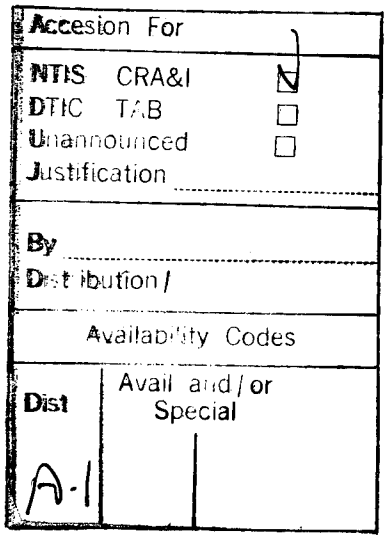
ARMY MEDICAL SPECIALIST CORPS





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Foreword

Although the Army Medical Specialist Corps was only established by the Congress a scant twenty years ago as the Women's Medical Specialist Corps and, as such, is the newest of the six corps of the Army Medical Service, I am delighted to note that the editors and authors have wisely given proper perspective to the dimensions of the achievements of the corps by incorporating in this historical account the period from 1917 to 1961.

By the inclusion of material concerning the growth of this important adjunct to the Army Medical Service team, one learns of the 1,500 pioneer women who served as dietitians, physical therapists, and occupational therapists in Army hospitals, both at home and abroad during World War I and of those who continued to serve, as civilian employees, until World War II.

It is particularly interesting to me, as I am sure it will be to others, to contrast the position of the members of the Army Medical Specialist Corps today, with their well-deserved recognition, compatible promotion policy, long-range educational and training program, and the like, with the poorly defined and frequently misunderstood and frustrating experiences of the World War I era and for many years thereafter.

The fact that the Army Nurse Corps had been established in 1901 did not, it is surprising to note, insure general acceptance of other women specialists in the Army and for several decades the laborious struggle for recognition and status continued. It was achieved, of course, in 1947, and in retrospect, one might say it was long overdue.

The period between the two World Wars was an arduous one for the dietitians, physical therapists, and occupational therapists—as civilian employees they were subjected to reduction actions, they had no civil service classification until just before World War II, housing was rarely available, and opportunities for specialized or graduate training were virtually nonexistent.

The World War II period is described in great detail in this volume, and is in itself a fascinating Army Medical Service historical account. During World War II, for example, 1,643 dietitians and over 1,600 physical therapists served worldwide in a commissioned status with the Army Medical Department. The commissioning of these two professions had been authorized in 1942; however, for those dietitians and physical therapists interned by the Japanese in Manila, their first knowledge of having achieved commissioned status did not come until the day of their liberation. The War Department had wisely kept this circumstance as top secret information to avoid compromise of the civilian category of these women.

Occupational therapists were not commissioned at any time during World War II, nor were they authorized oversea assignments. The rationale, as this history so clearly details, was that there would be

little need for treatment of war-injured soldiers since soldiers requiring such treatment would be transferred to Veterans' Administration hospitals. Needless to say, this proved fallacious reasoning as over 900 occupational therapists were employed in U.S. Army hospitals in the Zone of Interior during World War II and many hundreds could have been profitably employed in oversea areas had the authorization existed. I personally have the most acute recollection of such a need in the hospital center I commanded and recall, even at this late date, the "robbing Peter to pay Paul" machinations which were required in order to implement our occupational therapy program.

This history of these three professions is replete with the problem of obtaining and retaining sufficient personnel. This, of course, parallels the history of the Army Nurse Corps and is not incompatible with known nationwide shortages of such professional specialists. Great strides, however, as a reading of this history indicates, have been made through astute career management which has afforded members of the corps opportunities of specialized and graduate training. It is a truism that professional growth is achieved through continuing education and these three professions have placed due emphasis upon one of the major objectives of my office—education and training of all personnel.

This volume is the result of the dedicated efforts of its 17 authors, all of whom, except for the early days of World War I, had actual experience in the period about which they have written.

I am especially appreciative of these efforts and of the untiring effort of Col. Emma E. Vogel, WMSC, USA (Ret.), the first Chief of the Women's Medical Specialist Corps, who during the several years that this volume has been in preparation has unceasingly rendered assistance and guidance to the authors and the editors in addition to fulfilling her own writing responsibilities.

I congratulate all members of the Army Medical Specialist Corps for their splendid record as an integral part of a young and progressive corps and I add a special word of appreciation for those who have done so much to prepare this splendid historical account.

LEONARD D. HEATON,
Lieutenant General,
The Surgeon General.

Preface

The history of dietitians, physical therapists, and occupational therapists in the Army Medical Service commences during World War I when a small group of young dedicated women served in Army hospitals both in the United States and overseas as pioneers in their respective professions. This volume includes only a brief résumé of the administration of these three groups during World War I and the period between the two World Wars. It is concerned primarily with the professional services and educational and administrative activities of dietitians, physical therapists, and occupational therapists from the beginning of World War II to January 1961, two decades which witnessed marked scientific advancement and professional growth in each of the three professions.

The coverage of the activities of the three professional groups posed a problem for those charged with determining the format of this volume. It was believed that the interest of the majority of potential readers would be confined to one of the three professions, and it seemed highly desirable to arrange the major portion of the volume so that the reader could follow the history of the profession in which he had particular interest to the exclusion of the others without loss of continuity or corps concept.

This has been accomplished by dividing the volume into four parts. Part I consists of three sections, covering respectively the activities of dietitians, physical therapists, and occupational therapists in the Army Medical Service before World War II. Part II covers the administration, training, and professional activities of the three groups during World War II. Part III relates the history of the corps from its inception as the Women's Medical Specialist Corps, its change in composition as the Army Medical Specialist Corps in August 1955, to the terminal date of this volume, January 1961. Part IV relates separately the history of the educational programs and professional services of these specialists from World War II to 1961. It is therefore possible by selecting appropriate sections of the volume to follow separately the history of each professional specialty, including or not, as the reader wishes, the history of the corps per se. By the same token, the administrative history of the corps may be read without reference to the rest of the volume.

It was not intended that this volume serve as a mere recital of historical facts and events. It was envisaged rather as a record of the professional services to patients in Army hospitals of dietitians, physical therapists, and occupational therapists as well as a realistic account of the administrative achievements and vicissitudes of these three groups both before and after their incorporation into one corps. It is hoped that some knowledge and understanding of the past may serve as an inspiration to the present and future members of the corps.

The principal sources for the writing of this history have been official documents and pertinent historical records compiled and saved during the years as a result of the foresight and wisdom of individuals who looked forward to the day when such a volume might be written. The statistics presented are those which have been personally compiled by the authors either from official or unofficial records maintained either by the Office of the Chief, Army Medical Specialist Corps, or by the professional section concerned. They do not always represent official Medical Department statistics but they do reflect information obtained from records regularly assembled and periodically reported to The Surgeon General.

Many members of the corps were awarded decorations and commendations during World War II. These are not recorded in this history because of the insufficient information that was available. It was believed to be more appropriate to omit any listing rather than to include one which would be incomplete.

Information was also obtained from active-duty personnel who had knowledge and experience in selected professional areas and from those who reviewed the manuscript. The names of reviewers are in the Acknowledgments. Their comments, suggestions, and challenges were of the utmost value to the authors and the editors in revising the material to reflect accuracy in the professional and administrative material presented.

The volume could not have become a reality without the support, guidance, and encouragement of the late Maj. Gen. Silas B. Hays, The Surgeon General, who authorized its preparation. On behalf of all the dietitians, physical therapists, and occupational therapists who have made the history herein recorded, the editors wish to express appreciation to Lt. Gen. Leonard D. Heaton, The Surgeon General, who continued to support the writing project; Col. John Boyd Coates, Jr., MC, USA, former Director and Editor in Chief of The Historical Unit, U.S. Army Medical Service, who gave unstintingly of his time, judgment, and knowledge; and to Maj. Gen. Floyd L. Wergeland who served so ably as chairman of the Advisory Editorial Board. The Army Medical Specialist Corps in general and the editors in particular are greatly indebted to Charles M. Wiltse, Ph. D., Litt. D., Chief Historian, The Historical Unit, for his many helpful suggestions in reorganization of the volume and revision of manuscript content.

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CHAPTER I

Events Leading to the Formation of the Women's Medical Specialist Corps

Colonel Emma E. Vogel, USA (Ret.),
and *Major Helen B. Gearin, USA (Ret.)*

WORLD WAR I

Dietitians, physical therapists, and occupational therapists became a part of the medical program of the U.S. Army during World War I. They served as civilian employees not only in hospitals in the United States but also in hospitals with the American Expeditionary Forces in France and with the army of occupation in Germany after the armistice.

In this period and in the years intervening until World War II, although they were subject to Army regulations, they were not accorded the rights or benefits authorized for military personnel with whom they served. During World War I, they were not eligible for the benefits of the war-risk-insurance program nor were they entitled to retirement pay for service-connected illness or disability. After the end of hostilities, they were not permitted extended hospitalization in Army hospitals for injuries or illnesses incurred while on duty with the Army; neither were they entitled to treatment in other federal hospitals. Overseas, they were required to wear the prescribed hospital and street uniforms but received no uniform allowance nor did they have any items of the uniform issued to them during the war by the Army. The American National Red Cross furnished many articles of the uniform and equipment free to those going overseas and provided the street uniform at cost price.

Among the many medical officers who were impressed with the value of the services rendered by these women during World War I was one young Regular Army medical officer who later became The Surgeon General of the Army. In this capacity, Maj. Gen. Norman T. Kirk (fig. 1) played a vital role in the passage of legislation which gave full military status in the Army of the United States to the nurses, dietitians, and physical therapists[1] and the later legislation which authorized the establishment of the Women's Medical Specialist Corps and Regular Army status for nurses, dietitians, physical therapists, and occupational therapists.[2] It is unlikely that these bills would have been favorably considered by the Congress had it not been for General Kirk's strong

[1] Public Law 350, 78th Congress, 2d Session, approved 22 June 1944.
[2] Public Law 36, 80th Congress, 1st Session, approved 16 Apr. 1947.



FIGURE 1—Maj. Gen. Norman T. Kirk, USA, The Surgeon General, 1 June 1943-31 May 1947.

support and determination to improve the status of women serving in the Medical Department.

In July 1919, Miss Lenna F. Cooper, Supervisor of Dietitians, Surgeon General's Office, recommended that (1) all female professional civilian personnel employed in Army hospitals be accorded a status similar to that of members of the Army Nurse Corps, and (2) a separate corps for dietitians be established, to be administered by a director of dietitians in the Surgeon General's Office. (See Appendix A, p. 593.) No action resulted from these recommendations.

RECOMMENDATIONS FOR MILITARY STATUS, 1931

In January 1931, Miss Grace H. Hunter, Chief Dietitian, Walter Reed General Hospital, Washington, D.C., pointed out to The Surgeon General that there had been no appreciable change in the salary or status of dietitians since World War I.[3] Army hospitals were losing their experienced dietitians because of more attractive salaries elsewhere. Miss Hunter recommended (1) a graduated salary scale, (2) salary increases commensurate with years of experience and responsibilities, (3) a military status for dietitians similar to that of the members of the Army Nurse Corps, and (4) centralized supervision and direction of dietitians.

In February 1931, similar recommendations were forwarded to The Surgeon General by Miss (later Col.) Emma E. Vogel, Supervisor of Physical Therapists, and Miss Alberta Montgomery, Supervisor of Occupational Therapists, both on duty at Walter Reed General Hospital.[4] In addition to Miss Hunter's recommendations, Miss Vogel recommended (1) the establishment of a Medical Auxiliary Corps to consist of dietitians, physical therapists, and occupational therapists separate from but with the same benefits as those authorized for the Army Nurse Corps, and (2) the establishment of a Medical Auxiliary Corps Reserve group to consist of graduates of the Army training courses in these three specialities and former employees in the Medical Department in these three categories.

In reply to these recommendations, The Surgeon General, in March 1931, approved in principle an increased salary scale. He pointed out, however, that funds for the salaries of civilian employees were constantly being curtailed and to accomplish salary increases it would first be necessary to effect a reduction in force of these employees. Centralized supervision of the dietitians was not approved and the question of a military status was held in abeyance. At the same time, in a letter to The Surgeon General, Col. (later Brig. Gen.) Roger Brooke, MC, Com-

[3] Letter, Miss Grace H. Hunter, Chief Dietitian, Walter Reed General Hospital, to The Surgeon General, 31 Jan. 1931, subject: Status of the Dietitian in U.S. Army Hospitals.

[4] (1) Letter, Miss Emma E. Vogel, Supervisor of Physical Therapists, to The Surgeon General, 9 Feb. 1931, subject: Increased Salary and Recognition of Physical Therapy Aides. (2) Letter, Miss Alberta Montgomery, Supervisor of Occupational Therapists, to The Surgeon General, 12 Feb. 1931, subject: Graduated Salary Scale for Occupational Therapy Aides.

manding Officer, Fort Sam Houston Station Hospital, Tex., indicated that at least one hospital commanding officer also recognized the desirability of military status for the dietitian and the physical therapist.[5]

NATIONAL ECONOMY ACT, 1933

The need for a permanent status was clearly demonstrated in 1933. That year, under the provisions of the National Economy Act, the number of veterans hospitalized in Army hospitals for non-service-connected disabilities was drastically reduced. Since the salaries of dietitians, physical therapists, and occupational therapists were largely paid from funds derived from the Veterans' Bureau (now Veterans' Administration), their services were abruptly terminated in many Army hospitals and markedly curtailed in others. Some of these services were partially restored the following year as funds became available for salaries (on a reduced scale) when the Medical Department assumed the responsibility for the treatment of patients referred by the Civilian Conservation Corps.

These women, however, continued to feel a sense of insecurity in their positions. Since civil service status was not authorized for them, there was no provision for retirement and limited opportunity for increase in salary. Economic pressure following the passage of the National Economy Act resulted in a steady but gradual decrease in the number of these specialists in the Medical Department. By April 1938, there were only 45 dietitians, 35 physical therapists, and 9 occupational therapists employed.[6] Their morale was somewhat improved in June 1938 with the issue of Executive Order No. 7916 which directed that all civilian positions in the Medical Department at Large, paid out of appropriated funds, would be brought within the competitive classified civil service status not later than 1 February 1939.

RECOGNITION OF NEED FOR MILITARY STATUS

The first congressional champion of military status for these groups was Representative Carl Vinson. During his many visits to patients at Walter Reed General Hospital over a period of years, he had observed the work performed by physical therapists and had become an ardent supporter for an improved status for them. Realizing that it would be impossible to initiate legislation to provide a military status for this group without the support of The Surgeon General, early in 1937, Representative Vinson requested his views on the subject.[7]

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[5] 1st Indorsement, Col. Roger Brooke, MC, Commanding Officer, Station Hospital, Fort Sam Houston, Tex., to The Surgeon General, 26 Mar. 1931, through The Surgeon, Eighth Corps Area, Fort Sam Houston, Tex.

[6] Memorandum, Lt. Col. R. D. Harden, MC, Office of The Surgeon General, for General Reynolds, 8 Apr. 1938.

[7] Letter, Hon. Carl Vinson, Chairman, Committee on Naval Affairs, House of Representatives, to Maj. Gen. C. R. Reynolds, The Surgeon General, U.S. Army, 27 Feb. 1937.

In reply, The Surgeon General stated that physical therapists had no claim to a commissioned status which did not apply equally to dietitians and occupational therapists.[8] He advised Representative Vinson that commissions for these employees would not be requested for they would not be required to enter a war zone or serve at the front as were members of the Army Nurse Corps. In view of this opinion, Representative Vinson did not pursue the subject at that time. Throughout the years, however, he continued to be vitally interested and influential in working for military status for these women.

In 1938, Brig. Gen. Wallace C. DeWitt, Commanding General, Army Medical Center (later Walter Reed Army Medical Center), Washington, D.C., wrote to The Surgeon General saying that, in his opinion, the time had come to insure that dietitians, physical therapists, and occupational therapists were accorded a military status similar to that of members of the Army Nurse Corps.[9] This was not General DeWitt's first effort in behalf of these women, for over a period of years he had often expressed his belief in the need for a military status for these groups. In spite of the fact that war clouds were already beginning to form on the horizon over Europe, The Surgeon General did not concur in this recommendation and took no action.

LEGISLATIVE EFFORTS

The first legislative effort to authorize a military status for these groups was initiated early in 1939 by Senator Morris Sheppard.[10] His interest in promoting this action was stimulated by his niece, Miss (later Maj.) Olga Heard, a dietitian on duty at Walter Reed General Hospital. In reference to this bill, The Surgeon General stated that if dietitians and physical therapists were to properly fulfill their function in Army hospitals, they should be accorded a military status.[11] In commenting on these bills, the Secretary of War recognized that the services of dietitians and physical therapists were essential, but stated that occupational therapists, although necessary in time of war, were not considered essential from the standpoint of becoming a permanent adjunct in the Medical Department.[12] The proposed legislation, however, was not considered to offer sufficient advantage to the Army to justify the additional cost which would be involved. The Secretary of

[8] Letter, Maj. Gen. C. R. Reynolds, The Surgeon General, to Hon. Carl Vinson, Chairman, Committee on Naval Affairs, House of Representatives, 3 Mar. 1937.

[9] Letter, Brig. Gen. Wallace DeWitt, Commanding General, Army Medical Center, Washington, D.C., to The Surgeon General, War Department, 19 Mar. 1938, subject: Status of Dietitians, Physiotherapy and Occupational Therapy Aides.

[10] S. 1615, 76th Congress, 1st Session, presented by Hon. Morris Sheppard, Chairman, Committee on Military Affairs, U.S. Senate, 27 Feb. 1939, A Bill, To authorize the appointment of female dietitians and female physiotherapy and occupational-therapy aides in the Medical Department of the Army.

[11] Memorandum, Maj. Gen. C. R. Reynolds, The Surgeon General, for Assistant Chief of Staff, G–1, War Department (Liaison), 15 Apr. 1939, re: S. 1615 and H.R. 4934.

[12] Letter, Harry W. Woodring, Secretary of War, to Senator Morris Sheppard, Chairman, Committee on Military Affairs, U.S. Senate, 7 July 1939.

War also stated that the legislation was not in accord with the program of the President, and consequently, no hearings were held.

Senator Sheppard was not easily discouraged, for he introduced his bills again in 1940 and 1941 including only dietitians and physical therapists. Neither of these bills was favorably considered, since the War Department saw no need for militarizing these women at that time. Such action also might have encouraged various other civilian groups employed in Army hospitals to importune Congress for similar legislation. At that time, it was generally considered that the services of dietitians and physical therapists would not be required overseas in the event of war, and therefore, the protection afforded by the military status would not be essential. Within a year after the presentation of the last bill dietitians and physical therapists were assigned to the first hospital units which went overseas early in 1942.

In each of these legislative efforts, Senator Sheppard had the strong support of Representative Vinson. Even though these early attempts to introduce legislation failed, they served a useful purpose for, in the discussion of these proposals, members of the various committees in Congress became familiar with the duties and responsibilities of these employees and their lack of military status.

WORLD WAR II

World War II clearly demonstrated that civilian status for women serving overseas in a military organization was unjust. As in World War I, dietitians and physical therapists going overseas in 1942 were not permitted to wear the U.S. insignia or an arm brassard, so the only means of identifying them as citizens of the United States was a flimsy piece of paper about 4 by 7 inches, which was easily lost.[13] Neither were these women entitled to avail themselves of war-risk insurance authorized for military personnel. For injuries incurred while in the actual performance of their duties in the United States, they were protected under the Federal Compensation Act but this act afforded no security to civilian employees serving overseas.[14] This was an unfortunate status for professional women who were subject to the same risks and hazards as the military personnel with whom they served. It was exceedingly difficult for those not associated with the military to comprehend the reasons for these discriminations, and as a result, personnel procurement was slow.

In 1942, Brig. Gen. (later Lt. Gen.) W. D. Styer, Chief of Staff, Services of Supply, pointed out that dietitians and physical therapists were serving overseas with virtually no protection under international law. He directed that an immediate investigation be made concerning

[13] Certificate of Identity, Form 61, Medical Department, U.S. Army (Revised), 17 Apr. 1915. This certificate was superseded by W.D. A.G.O. Form No. 65–10, 20 May 1942.

[14] Compensation Act II (9–728), United States Employees Compensation 1938, subject: Right to Compensation for Personal Injuries of Civil Employees of the United States, Under Federal Compensation Act of 7 Sept. 1916, as amended.

the feasibility of initiating legislation to provide them with the protection to which they were entitled. In reply, Maj. Gen. James C. Magee, The Surgeon General, stated that the functions of dietitians and physical therapists were as important in the care of the sick as those of the nurse in Army hospitals and that they should have the same protection.[15] Since legislation to improve the status of members of the Army Nurse Corps was under consideration at that time, it was expedient to include dietitians and physical therapists in the proposed bill. In testifying at hearings on this bill, Brig. Gen. (later Maj. Gen.) Miller G. White, Assistant Chief of Staff, G–1 (personnel), commented on the difficulties encountered in getting dietitians and physical therapists to go overseas in civilian status and in providing housing and subsistence for them. He recommended that they be accorded the same status as Army nurses.

At the hearings on 13 October 1942, Miss Helen S. Willard, Chairman, War Service Committee, American Occupational Therapy Association, said that her association strongly recommended that occupational therapists be included in the proposed legislation. At the hearing held on 16 November 1942, Brig. Gen. Larry B. McAfee, Deputy Surgeon General, testified that the reason for including dietitians and physical therapists in the bill was that, along with nurses, they were the only women authorized for oversea units. Following these hearings, the bill was rewritten to include dietitians and physical therapists as recommended by the War Department and was passed by the House of Representatives.

At the hearing before the Senate on 25 November 1942, Dr. Winfred Overholser, Chairman, Committee on Neuropsychiatry, National Research Council, and Superintendent, St. Elizabeths Hospital, Washington, D.C., testified in favor of including occupational therapists and pointed out that procurement of this specialized personnel would be exceedingly difficult if they remained in the civilian status. In the discussion, General McAfee stated that if a wounded man could not be returned to combat duty within 120 days, he would be evacuated to a hospital in the United States where the services of occupational therapists would be essential. The report submitted on 3 December 1942 recommended favorable consideration of the bill with several amendments, chief of which was the inclusion of the Navy Nurse Corps on the same basis as the Army Nurse Corps.

RELATIVE RANK STATUS

On 22 December 1942, the 77th Congress passed Public Law 828 which authorized for dietitians and physical therapists a military status with relative rank in the Medical Department for the duration of the war and 6 months thereafter. The military status was enthusiastically

[15] Memorandum, Brig. Gen. W. D. Styer, Chief of Staff, Services of Supply, for Brig. Gen. James E. Wharton, Director of Military Personnel, Services of Supply, 11 June 1942, subject: Civilians Assigned to Medical Department Units, with 2d indorsement thereto, 14 July 1942.

welcomed by them for now they were part of the Army, not merely with it. They accepted their new status with pride. Because occupational therapists were not included in the bill, they continued to serve as civilian employees in Army hospitals in the United States. Their lack of military status was to have an adverse effect on the procurement of this group during the war years. Following enactment of the law, Helen C. Burns[16] was designated as Director of Dietitians and Miss Vogel as Director of Physical Therapists. Both were appointed in the relative rank of major but received the pay and allowance of captains.

Under Public Law 77–828 the dietitians and physical therapists were not fully commissioned Army officers since their appointments were with relative rank in the Medical Department only. This law had been in effect several months when Congress passed legislation authorizing full military status in the Army of the United States for officers appointed in the Women's Army Corps. In comparing the privileges authorized under these laws it was observed that officers appointed in the Women's Army Corps were entitled to allowances for dependents—a privilege which was not accorded to the nurses, dietitians, and physical therapists. A bill (H.R. 3761) designed to amend Public Law 77–828 was introduced in the House by Representative Frances P. Bolton on 1 December 1943.

COMMISSIONS IN THE ARMY OF THE UNITED STATES

When the amendments were first discussed, there were some members of the Committee on Military Affairs, House of Representatives, who, at that time, favored legislation to authorize a permanent commissioned status for these women. However, in May 1944, the Secretary of War stated that while the War Department favored legislation to authorize for nurses, dietitians, and physical therapists a full commissioned status in the Army of the United States for the duration of the war and 6 months thereafter, it did not consider the time appropriate to enact legislation affecting the peacetime organization of the Army.[17] He further stated that the War Department recognized the inequities which existed because of the relative rank status and would interpose no objection to enactment of the legislation under consideration. The bill, passed as Public Law 78–350 on 22 June 1944, authorized for these personnel full commissioned status in the Army of the United States with the same rights, benefits, and privileges as other commissioned officers. Another milestone in the long struggle for military recognition had been passed.

CONSIDERATION OF PERMANENT MILITARY STATUS

Shortly after the termination of World War II, a series of conferences began in the Surgeon General's Office to formulate plans for the

[16] Later Maj. Helen B. Gearin, WMSC.
[17] H. Rept. 1512, 78th Congress, 2d Session, 25 May 1944.

postwar legislative program.[18] On 29 January 1946, The Surgeon General recommended [19] the establishment in the Regular Army of an Army Nurse Corps and a Women's Medical Specialist Corps, the latter to consist of dietitians, physical therapists, and occupational therapists, both corps to consist only of officers. In summary, he stated that it was necessary that these corps be militarized in the peacetime Army, for the following reasons:

1. Nurses, dietitians, and physical therapists were officers in the Army of the United States during World War II, and in this capacity, had been a credit not only to the Medical Department but to the Army as a whole. Occupational therapists had served with distinction as civilians during the war and should also be militarized in the peacetime Army. Qualified personnel in these categories were being recruited by civilian and other governmental agencies, and if the Army were to retain their services, it was essential that they be offered commissions in the Regular Army.

2. These professional personnel were indispensable to the efficient operation of Army hospitals and their militarization would enable the Army to utilize their services when, where, and as needed both overseas and in the United States.

3. The cost of militarizing these specialists in the peacetime Army would be no greater than the cost of their employment as civilians.

4. Since the public had looked with pride on nurses, dietitians, and physical therapists as commissioned officers during World War II, it would be demoralizing to these groups if their commissioned status were not continued in the postwar Army.

5. The work of all—the nurse, the dietitian, the physical therapist, and the occupational therapist—was interrelated and their militarization would foster teamwork in the care of patients in Army hospitals and insure permanency and continuity in such care.

On 30 April 1946, the Assistant Chief of Staff, G–1, called a conference to consider legislation proposed to establish Regular Army status for dietitians, physical therapists, and occupational therapists. Because of the wide divergence in their duties, there was considerable discussion as to whether three corps, each headed by a director with the rank of lieutenant colonel might be preferable to one corps containing the three specialties headed by a director in the rank of colonel.[20] The Legislative Branch of the War Department finally decided that there should be one corps, to be called the Women's Medical Specialist Corps. It would parallel the structure of the proposed Medical Service

[18] These conferences were usually attended by Col. Florence A. Blanchfield, Chief, Army Nurse Corps; Maj. Helen C. Burns, Director of Dietitians; Maj. Emma E. Vogel, Director of Physical Therapists; Miss H. Elizabeth Messick, Chief, Occupational Therapy Branch; and representatives of the Personnel, Legal, and Planning Divisions in the Surgeon General's Office.

[19] Memorandum, Maj. Gen. Norman T. Kirk, The Surgeon General, for Assistant Chief of Staff, G–1, attention: Lt. Col. E. P. Smith, 29 Jan. 1946, subject: Military Status for Army Nurses, Physical Therapists, Dietitians, and Occupational Therapists.

[20] Memorandum for Record, 30 Apr. 1946, subject: Conference, General Kirk, General Paul, G–1 on Legislation to Create the Army Nurse Corps, Dietitian Corps, Physical Therapist Corps, and Occupational Therapist Corps in the Regular Army.



FIGURE 2—After signing Public Law 80–36, President Truman was photographed with (left to right) Col. Florence A. Blanchfield, Lt. Comdr. Ruth B. Dunbar, Maj. Helen C. Burns, and Maj. Emma E. Vogel.

Corps which was to consist of several distinct groups of male commissioned specialists. No action was taken on the legislation by the 79th Congress before its adjournment in August.

PUBLIC LAW 36, 80TH CONGRESS, 16 APRIL 1947

The 80th Congress convened on 3 January 1947. Within 5 weeks the proposed legislation was presented to a subcommittee of the Committee on Armed Services, House of Representatives, by Representative Margaret Chase Smith who had long endorsed full military recognition for women serving in the Armed Forces. She pointed out that passage of the legislation would not increase the per capita expenditures over those which existed during the wartime period. The bill was passed in the House on 10 March and on 24 March received favorable consideration in the Committee on Armed Services in the U.S. Senate,[21] and subsequently was passed by the Senate.

On 16 April, President Truman signed Public Law 80–36, the Army-

[21] Hearing before the Committee on Armed Services, U.S. Senate, 80th Congress, 1st Session, 24 Mar. 1947, on H.R. 1943.

Navy Nurses Act of 1947, establishing the Army Nurse Corps and Women's Medical Specialist Corps in the Regular Army. The ceremony was witnessed by Representative Smith, author of the bill and chairman of the subcommittee; members of the committee; General Kirk; Col. Florence A. Blanchfield, ANC, Chief, Army Nurse Corps; Major Vogel; Major Burns; as well as Rear Adm. Clifford A. Swanson, The Surgeon General of the Navy; and Lt. Comdr. Ruth B. Dunbar, Assistant to the Chief, Navy Nurse Corps.

Later, President Truman invited Colonel Blanchfield, Commander Dunbar, Major Vogel, and Major Burns to his office in the White House. Expressing his pleasure at the passage of the bill, he had his photograph taken with them (fig. 2). Each was presented with one of the pens he had used in signing the bill.

Thus the corps was authorized. The permanent military status accorded the dietitians, physical therapists, and occupational therapists gave recognition to their 30 years of professional service in the Army medical program. Detailed in the chapters which follow is the development of the professional programs of the three constituent groups during World Wars I and II and their subsequent activities as components of the Women's Medical Specialist Corps.

Part I

THE CONSTITUENT GROUPS BEFORE WORLD WAR II

CHAPTER II

Dietitians Before World War II[1]

Colonel Katharine E. Manchester, AMSC, USA, and
Major Helen B. Gearin, USA (Ret.)

Section I. World War I and Demobilization (1917-23)

Although the dietitian did not serve with the Army until 1917, the need for her services had long been felt. Well recognized in history is the work of Florence Nightingale during the Crimean War (1854–56). Through her efforts, the entire kitchen departments in Army hospitals in Crimea were systematically remodeled. Diet kitchens were set up in 1855 in Scutari. From these kitchens for the first time, the ill and wounded soldiers were served clean and nourishing food as a part of their medical care.

In two essays on "Taking Food" and "What Food?", Miss Nightingale clearly reflects her insight into the dietary problems of patients: [2]

> Every careful observer of the sick will agree in this that thousands of patients are annually starved in the midst of plenty, from want of attention to the ways which alone make it possible for them to take food. This want of attention is as remarkable in those who urge upon the sick to do what is quite impossible to them, as in the sick themselves who will not make the effort to do what is perfectly possible to them.
>
> * * * * * * *
>
> It has been observed that a small quantity of beef tea added to other articles of nutrition augments their power out of all proportion to the additional amount of solid matter.
>
> The reason why jelly should be innutritious and beef nutritious to the sick, is a secret yet undiscovered, but it clearly shows that careful observation of the sick is the only clue to the best dietary.
>
> Chemistry has as yet afforded little insight into the dieting of [the] sick.

The Medical Department first visualized the necessity for specially trained nurses to assist in feeding the sick during the Spanish-American War in 1898. At that time, the subject of nutrition as applied to a large aggregation of men was not generally understood, but experiments and observations were being made by scientists in an effort to establish a properly balanced and adequate diet for both the ill and well. Dr. Anita Newcombe McGee, giving testimony before a congressional committee in 1898, stated that a considerable number of female nurses had been employed in military hospitals in charge of diet work and that

[1] Unless otherwise indicated, the primary source of information for this chapter is: Manchester, Katharine E.: History of the Army Dietitian. [Official record.]

[2] Nightingale, Florence: Notes on Nursing: What It Is, and What It Is Not. [Facsimile of First American Edition Published in 1860 by D. Appleton and Co., New York.] Philadelphia and Montreal: J. B. Lippincott Co., 1946, pp. 36, 41–42.

their services were most satisfactory.[3] The small number who were employed as "dietists" during the Spanish-American War were retained for only a few years following its close.

QUALIFICATIONS AND PROCUREMENT

When the United States entered World War I, there were no dietitians assigned to Army hospitals. The lack of these specialists was soon keenly felt in many hospitals due to the steadily increasing numbers of war-injured soldiers, the need for conservation of necessary food, and the great number of chronic and convalescent patients requiring diets. In the early months of the war, the American National Red Cross Dietitian Service was called upon to furnish dietitians for base hospitals in the United States and for units going overseas. The National Committee on Dietitian Service of the Red Cross, formed in December 1916 to assist with the enrollment of dietitians, established the first qualifications for dietitians in base hospitals.[4] A basic requirement was a 2-year college course in home economics supplemented by at least 4 months' practical experience in the dietetic department of a general hospital. Endorsements were required from the director of the school in which the dietitians received their training and the superintendent of the hospital where they were employed. Dietitians had to be between 25 and 35 years of age. A physical examination by a family physician was also required.

By authority of the Secretary of War, under Executive Order of 11 May 1917, dietitians were appointed by The Surgeon General as civilian employees in the Medical Department at Large for temporary duty for the period of the war emergency. The Civil Service Commission waived the written examination usually required for appointment because of the war. The basic salary of the staff dietitian was $60 per month and of the head dietitian, $65. (See Appendix B, p. 595.) Those going overseas received an additional $10 per month. The dietitians were authorized housing in the nurses' quarters if rooms were available (fig. 3).

By November 1917, the oaths of office of the first 18 dietitians to be assigned to camp hospitals in the United States were forwarded to the Supplies and Accounts Division, Surgeon General's Office, for approval.[5]

The distinction of being the first dietitian to serve overseas with a base hospital unit could be claimed by Anne T. Upham of Base Hos-

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[3] S. Doc. 221, 56th Congress, 1st Session. Report of the Commission Appointed by the President to Investigate the Conduct of the War Department in the War of 1898. Washington: Government Printing Office, 1900, vol. 7, pp. 3168–3181.

[4] The American Dietetic Association had not yet been organized so there was no other national professional group to assist with recruitment or the establishment of qualifications.

[5] The names of these pioneers: Helen Charlotte Aldrich, Bertha Mabel Barber, Mary C. DeGarmo, Nellie Elizabeth Flicker, Anna Bell James, Lola Reid Mace, Josephine L. Perry, Grace Ethel Redmond, Elizabeth C. Hill, Ethel E. Smith, Carol Sykes, Carrie E. Turnbull, Hazel M. Wilson, Lena Wright, Helen McGavy Pond, Ethel Jordon, Marjorie Mercer, and Nancy Elizabeth Kritzer.

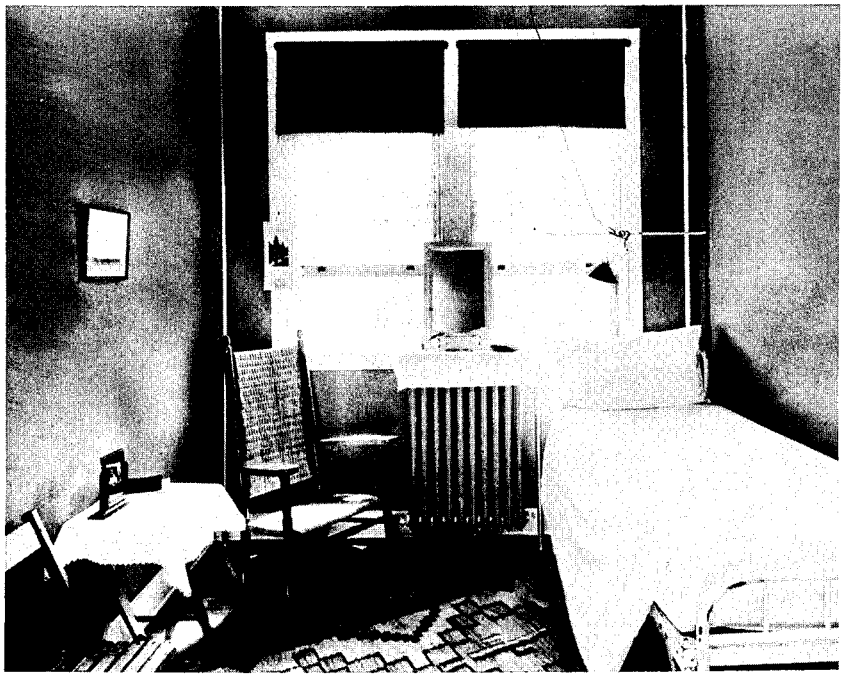


FIGURE 3—Room in nurses' quarters, General Hospital No. 21 (later Fitzsimons General Hospital), Denver, Colo., 1920.

pital No. 4. This unit was organized at Lakeside Hospital, Cleveland, Ohio. It sailed from New York on 8 May 1917.

Other dietitians among the first to serve overseas were Marjorie Hulsizer of Base Hospital No. 5, organized at Harvard University, Boston, Mass.; Mary Redford Harold of Base Hospital No. 2, organized at Presbyterian Hospital, New York, N.Y.; Florence Bettman of Base Hospital No. 10, organized at Pennsylvania Hospital, Philadelphia, Pa.; Rachel Watkins of Base Hospital No. 21, organized at Washington University, St. Louis, Mo.; and Mary Lindsley and Margaret Knight of Base Hospital No. 12, organized at Northwestern University, Chicago, Ill. These units sailed between 11 and 24 May 1917 and were the first six base hospitals sent overseas for duty with the British Expeditionary Force.[6]

Because recruitment of dietitians was slow, Army hospitals in the United States and overseas were supplied with a barely adequate number of dietitians. Those who volunteered did so because of their patriotic desire to serve their country. Assignments were made where the

[6] The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1927, vol. II, pp. 20, 630–648.

[7] Dock, Lavinia L., et al.: History of American Red Cross Nursing. New York: The Macmillan Co., 1922, p. 1425.

need was greatest. By Armistice Day, 356 dietitians had been assigned to military hospitals, 84 overseas and 272 in the United States.[7]

SUPERVISING DIETITIAN, SURGEON GENERAL'S OFFICE

From the earliest months of the war, Miss Dora E. Thompson, Superintendent of the Army Nurse Corps, had felt the need for a supervising dietitian to care for the activities of dietetic service in the Surgeon General's Office. It took months to resolve the technicalities concerning the appointment of a civilian to that position. Miss Lenna F. Cooper (fig. 4), Director, School of Home Economics, Battle Creek College, Battle Creek, Mich., was appointed to this position by the Civil Service Commission upon the recommendation of The Surgeon General. She took her oath of office on 11 November 1918, Armistice Day, a little late to bring much in the way of aid and encouragement to dietitians in the service during the war. Miss Cooper was assigned to the Office of the Superintendent of the Army Nurse Corps, because her work was so closely allied to that of Miss Thompson. Her duties included general supervision of the work of all dietitians—recruiting, assignment, transfer, discipline—and the inspection of Army hospital dietary departments. Miss Cooper's leave of absence from Battle Creek College could not be extended and she relinquished her position in the Surgeon General's Office on 7 August 1919. Miss Josephine Happer was Miss Cooper's replacement. She was assigned to Walter Reed General Hospital, Washington, D.C., and remained acting supervisor of dietitians until January 1920.

STATUS AND DUTIES

Many misunderstandings arose concerning the status of dietitians going overseas. On 2 October 1917, the Red Cross issued a circular letter to all base hospitals being activated stating that when a dietitian was not a nurse she would come under the heading of a "civilian employee and should be included in the civilian list." Each chief nurse was instructed to communicate with the medical director of the base hospital in order to reserve a vacancy for the dietitian from the civilian positions authorized because otherwise no salary or transportation could be secured. The dietitian as a civilian employee was not charged against the overall authorization of nurses.

Perhaps the reason that dietitians accomplished as much as they did was because they were in a sense undisciplined. Their training had given them fundamental knowledge of their subject matter together with a genuine desire to put this to practical use. Since they were not oriented to the discipline of either the soldier or nurse they worked on their own initiative, little troubled by precedent, proceeding as fast and as far as the commanding officer or mess officer would permit. Surely, whatever success the dietitians had to their credit in the early part of the war was because once given the opportunity, they were able, in most instances, to demonstrate their value to the service.



FIGURE 4—A contrast in uniforms. At the annual meeting of the American Dietetic Association in 1942, Miss Lenna F. Cooper (right), supervisor of Army dietitians in 1918, models her uniform for Miss Helen C. Burns, supervisor in World War II.

Since there were no regulations published for dietitians before May 1918, the duties of dietitians were not standardized. Overseas, their duties varied from taking care of the nurses' home and giving occasional assistance to the officers' mess to planning and serving diets to patients. In some instances, the dietitians themselves prepared food for the very sick patients or had charge of the general hospital diet kitchen. During the early months of the war, few dietitians were given an opportunity to plan menus and supervise the preparation of regular diet food in the patients' kitchen.

Miss Upham, assigned to Base Hospital No. 4 which had been loaned to the British Government, found that there was little concept among the British of what a dietitian was supposed to do. At first, Miss Upham supervised the nurses' messhall and performed housekeeping duties in the nurses' quarters instead of working in the hospital kitchen. She explained this by saying, "I was in a British hospital where there never had been a dietitian; consequently, I had to prove to the British officials that we could be of service." Evidently her sense of humor carried her through many disheartening experiences. On one occasion, a British commanding officer, reading the roster of the unit, saw the word dietitian after her name. He asked, "What kind of a creature is that?" At first, the general opinion prevailed that she knew only how to serve "ice cream and dainty foods." She was later introduced to a British official as "our lady cook." However, by June 1918, her capabilities were recognized and she was given complete charge of the planning, preparation, and service of food to all patients, in addition to supervising the special diets and the officer patients' diets.

The first authority that outlined the duties of the dietitian overseas and established her status as a civilian employee was published in May 1918.[8] The commanding officers were urged "to use their [the dietitians'] expert knowledge for the correction of * * * monotonous and ill-balanced dietary, poor service, and lack of cleanliness in the kitchen and the kitchen personnel," and to exercise the constant vigilance and attention to details to successfully administer the mess.

Miss Mary Pascoe who was assigned successively to Base Hospitals Nos. 8, 117, and 214 illustrated the inconsistencies of this circular when she stated that "The net result of all this was practically nil. For how could the dietitian supervise, lacking authority to give orders? She could use wile and guile, persuading the mess sergeant to carry out her wishes—an energy wrecking, energy dissipating procedure; or she could finally seclude herself in some niche and cook. Only thus could she be assured that at least the 'light diets' would be edible."

Miss Cooper, during her tour as supervising dietitian in the Surgeon General's Office, inspected the dietary departments of 30 Army hospitals in the United States. Realizing from these inspections that there was an overlap of the responsibilities of the mess officer and the dietitian, she

[8] American Expeditionary Forces Circular No. 27, 13 May 1918.
[9] Circular Letter No. 131, Office of The Surgeon General, 8 Mar. 1919.

worked hard to obtain standardization of the dietitians' duties. In March 1919, a circular letter [9] was published which defined the duties and status of dietitians in military hospitals and made her responsible for her professional work to the commanding officer of the hospital. As an assistant to the mess officer she was to cooperate with him and the chief nurse. It pointed out that even though the dietitian was a civilian employee of the Medical Department she was not to be classified with cooks and maids for "to place a competent dietitian on the same basis with cooks and maids is an injustice to her and a disadvantage to the hospital in which she is working."

Despite all the handicaps that befell the dietitians in World War I, the services rendered justified their existence as a part of the Medical Department. The work of the dietitian was remarked upon by a member of the American Expeditionary Forces. Miss Mary Hungate, dietitian, Base Hospital No. 51, on returning to the United States, met a brigadier general who did much to hearten the dietitians by personally thanking them for their good work. From previous experiences in Army hospitals, the general recalled that the food was unfit for the sick. However, when he became a patient in an American Expeditionary Forces hospital, he found the food much improved. Upon inquiry, he learned that a trained dietitian was responsible.

Another tribute paid to the dietitians in World War I came from Maj. Roy G. Hoskins, MC, Division of Food Nutrition, Surgeon General's Office, who visited nearly every camp and cantonment hospital in the United States. Major Hoskins said, "When the dietitians first came into the Army, they encountered many difficulties incident to the introduction of women into what had previously been in the military experience a strictly masculine pursuit. I have much admiration for the skill with which they met these difficulties, and the valuable service they rendered to the Army." Likewise, the annual report of The Surgeon General to the Secretary of War in 1919 recognized the value of food and nutrition for both the sick and well.

The increasing demand by hospitals for additional personnel and the complimentary verbal reports from commanding officers were evidence of the popularity of dietitians. One interesting assignment in other than hospital food service was that of the dietitian who was assigned in 1919 to Rockwell Field, San Diego, Calif., to work on the diet of flyers.[10]

FOOD, PERSONNEL, AND EQUIPMENT

In addition to the struggle for status and authority as civilians in an established military organization, the dietitians were required to work with limited food supplies, untrained personnel, and a shortage of equipment. Effective on 26 May 1918, the ration allowance of 50 cents a day per patient was approved by the Secretary of War. The value of

[10] Annual Report, Supervising Dietitian (Miss Lenna F. Cooper), Medical Department, U.S. Army, to The Surgeon General, 7 July 1919.

the ration was 60 cents [11] for Army hospitals overseas and for hospitals in the United States with tuberculous patients.

The ration issued to base hospital units varied in different areas. In England, U.S. Army hospitals were authorized to draw the special troop ration for enlisted personnel and civilian employees and any part of the ration desired for nurses and patients. They could supplement this allowance by local purchases with the exception of meat and sugar which could not be bought in excess of the ration allowance.[12] From the accounts of dietitians who served overseas in World War I, it was evident that food was an uncertain commodity. Hospitals which were on a direct railroad to the frontline had food supplies sent on the ammunition trains. If the track ahead was clear, they would go by the hospital without stopping to unload the food. In addition to the difficulties of transportation of food, there was little in the ration that was suitable for the desperately ill and wounded men. Butter in 5-pound cans was rancid and inedible. Fresh milk was not available, and eggs when available cost from $1.25 to $3.00 a dozen. Canned goods were of poor quality, and canned vegetables usually consisted of corn, peas, tomatoes, and more tomatoes.

Miss Pascoe, on returning from France in 1919, was asked to speak before the New York Association of Dietitians. She mentioned the quantity of tomatoes in the rations, closing with a vocal outburst against a "scheme of life that had almost drowned me in tomatoes." She was ashamed and humiliated when a lady in the back of the room chided her by saying that tomatoes were valuable because of their vitamin C. During her service overseas, Miss Pascoe had not had an opportunity to learn of the discovery of vitamin C.[13]

Ordinary foods such as gelatin, junket, cocoa, broth, and other items required for light and special diets were totally absent. Flour, sugar, canned and powdered milk, and dried turnips were plentiful. Bacon and prunes were received in varied amounts from time to time. Frozen beef, a scarce item, had to be cooked upon thawing because of lack of refrigeration. The dietitians developed recipes in an attempt to disguise the identity of some foods which they received in quantities such as canned salmon, corned beef, and so forth.

During the war, there was a shortage of experienced cooks especially in the hospitals. Cooks and kitchen police for the hospital kitchens came from every possible source. Miss Hungate wrote that she "had never seen a more cosmopolitan gathering than the kitchen force in Base Hospital No. 51. Beside the student from Colgate, who had enlisted in the hospital corps in order to drive an ambulance, sat an ex-acrobat from Ringling's [Ringling Brothers Circus]. The cooks who occupied the seats of honor included one handsome Italian, one East Side Jew,

[11] A ration is food for the subsistence of one person for 1 day.

[12] The Medical Department of the United States Army in the World War. Washington: Government Printing Office, 1926, vol. VI, p. 693.

[13] Mrs. Mary P. Huddleson (formerly Mary Pascoe) as editor of the *Journal of the American Dietetic Association* during World War II included mention of all research and investigation in the *Journal* for the information of dietitians serving in World War II.

a Virginia Negro, and an Anglo-Saxon who had formerly labored in a Kentucky brewery. In addition, there were three German prisoners of war, one Russian, a little homeless waif adopted after his daily pilfering of our garbage cans, and three volatile chattering French women."

All during the war, ambulatory patients worked in the hospital messes. Mrs. Caroline B. King reported that the convalescent soldiers made excellent cooks. Many dietitians had recollections of the erratic cooks and the shellshocked personnel who ducked under the nearest table if a pan clattered to the floor.

In August 1919, Miss Pascoe reported to Miss Cooper that better training for Army cooks in health, food preparation, sanitation, and economy was needed in all the Army hospitals. Of the many cooks who served with her in hospitals in France only two had had previous training or experience as cooks either in the Army or civilian life. Miss Pascoe's best mess sergeant had starred on the New York stage. Of her diet kitchen staff, one was a Metropolitan Opera singer, another a big league ball player, and another a man worth $20 million.

Army hospitals in the United States were equally short of qualified mess personnel. Miss Mary Foley, dietitian at Fort Riley Base Hospital, Kans., mentioned that diet cooks assigned to each kitchen under the supervision of the dietitian were often inexperienced as well as disinterested in their work. Quite often the diet cook assigned was a kitchen police who had done unsatisfactory work in the messhall. Because of the shortage of help and the lack of skills of the supervisors, the dietitians were placed in charge of two messhalls and kitchens of the hospital as an experiment to improve food service. The dietitians were in charge of the preparation of food for all patients. This gave them an opportunity to teach the cooks how to prepare food for approximately 20 different types of diets which resulted in a greater variety of food for the patients. At the end of 2 months, an official inspector from the Surgeon General's Office commended the commanding officer of the hospital on the two sections supervised by the dietitians as the cleanest and best organized of any Army hospital in the United States. In addition to their regular duties, the dietitians conducted classes in dietetics [14] and cooking 2 nights a week for the mess sergeants, cooks, and kitchen police.

The dietitians overseas and in the United States had to improvise much of the mess equipment used in Army hospitals. Only certain items of equipment were authorized for issue with the No. 5 Army range for use in base and evacuation hospitals overseas. With this limited equipment, it was evident that many additional items were needed.

Mrs. King, on arriving in France, prepared the first meal out-of-doors on field ranges sunk in yellow mud. The wind eventually blew the stovepipes across the field, and rain put out the fires. The new hospital, when completed, was a conglomeration of huts and tents in the open

[14] The Army Hospital Dietitian in World War I. J. Am. Dietet. A. 20: 398, June 1944.

field. When the diet kitchen was built, it consisted of 12 wood-burning ranges, 4 sinks, and several huge tables that the corpsmen had manufactured from rough lumber. It was evident from the letters reviewed in the record that the tent kitchens had little or no equipment. Bottles were used for rolling pins, new GI garbage cans for mixing bowls, and small fenceposts for mashing potatoes.

Miss Knight, of Base Hospital No. 12, worked in a tent messhall seating 320 persons, 8 at a table. Serving was done cafeteria style, and all food was carried across an open road from the cookhouse. An improvised dishwarmer had been built. It was a huge box lined with pieces of tin from flattened cracker boxes. The shelves were of woven wire fencing and heat was furnished by a little oil stove on the bottom shelf. Dishwashing was done out-of-doors. Only a canvas stretched over tent poles protected the dishwashers. It took six army stoves, each with a huge pot, to supply hot water for dishwashing. Sometimes 1,450 persons were served each meal in this tent messhall, which meant that dishes had to be continually washed during the serving period.

The first reference concerning the use of food carts in Army hospitals was found in a memorandum from Lt. Col. John R. Murlin, SC, to Col. Deanne C. Howard, MC, Surgeon General's Office, dated 19 February 1919. He stated that the best food cart of which he had any knowledge from various inspections of hospitals was the one devised by Lt. Col. William R. Dear, MC, at Camp Lee, Va. To quote, "This cart, built on the fireless cooker principle, kept the food thoroughly hot. It was mounted on large wheels and was provided with springs so that there was no slopping of food along the corridors."

From 1917 to 1920, hospital commanders of various hospitals in the United States made requests to The Surgeon General for new items of food service equipment, such as food carts, meat choppers, aluminum pans and dishes, cakemixers and doughmixers, buttercutting machines, steel dishwashing machines, electric potato peelers, electric cookers, electric stoves, portable ranges for diet kitchens, and 40-gallon steam-jacketed kettles. Because of war shortages and limitations, many of these items could not be supplied.

UNIFORMS

As a civilian employee, the dietitian in World War I was not entitled to wear the uniform issued to the Army Nurse Corps. By necessity, she was required to wear whatever uniform was available. This was particularly true of the dietitians serving overseas, inasmuch as there was no source of uniforms upon which they could draw when any item of clothing became too worn to wear. Mrs. King, in 1918, noted that her oversea uniform consisted of two chambray dresses and one slate blue suit. It wasn't long before they became faded and her mess officer complained to the commanding officer, "If you don't give my dietitian another uniform, I'm going to wrap her in an American flag!"



FIGURE 5—American National Red Cross gray travel uniform worn by Miss Mary Pascoe, dietitian, who served overseas in World War I.

On 15 August 1917, the Surgeon General's Office published specifications for uniforms.[15] The indoor uniform for dietitians would consist of a white, one-piece dress, a rolled white collar, white cap, and a caduceus with the letter "D" on it. For foreign service, the outdoor uniform was a blue cotton-crepe dress, when white was impracticable, a white cap, and insignia. The outdoor uniform included an Oxford gray Norfolk suit, an overcoat, a black velour hat for winter, a black or white straw sailor hat for summer, gray gloves, black or white shoes, a white or gray waist, and a black ribbon tie and a plain bar pin. On the

[15] Special Regulations 41, Office of The Surgeon General, 15 Aug. 1917.

lapels of the suit and on the collar of the overcoat, the insignia and the letters "U.S." were worn.

According to a circular letter issued by the Red Cross on 2 October 1917, a gray worsted dress, cape, ulster, and black velour hat were provided for the dietitians. By April 1918, the uniform situation had been restudied. The white uniform was made like the nurses' uniform. The Red Cross cape could be worn if the dietitian was enrolled in the Red Cross. A gray travel uniform (fig. 5) made in the same style as the Army nurses' uniform was to be purchased after assignment to duty. The dietitian was proud to be entitled to wear the Red Cross Dietitians' Badge, if she was enrolled under the Red Cross, and to be permitted to wear the letters "U.S." and the caduceus with the letter "D," when available.

Miss Hungate, in recounting her experiences overseas, wrote of her embarkation at New York as follows: "The hundred nurses all wore street uniforms of blue serge, blue velour hats and tan shoes, while I, the Dietitian, the hundred and oneth, was duly fitted out in a similar suit of gray, a black hat and black shoes. There was no question about it, I was the odd member of the family * * *, we scurried in through a coal-hole down in the bowels of the ship, and I, with my gray suit and black hat, trailed in the rear as pleased as Punch over being allowed to go along, even though no one, myself included, had any definite ideas about just what I was going to do."

TRAINING

The Army's urgent need for qualified dietitians was well known to Miss Cooper long before her assignment to the Surgeon General's Office because of the work she had done with the Red Cross Committee on Dietitian Service. As director of a school of home economics, she realized that students could be more adequately prepared to work in Army hospitals if special training were given and emphasis placed on the food service procedures of the Army. After collaboration with the dietitian at Camp Custer Base Hospital, Mich., she planned a special 4-month training course for those of her students who were interested in working in Army hospitals. Field trips were made by the students to the Base Hospital to observe the Army methods.

However, realizing the immediate need for large numbers of dietitians with Army training, Miss Cooper conceived the idea of sending capable students from the Battle Creek Sanitarium to the Base Hospital, for practical training. She wrote to Lt. Col. Ernest E. Irons, MC, Commanding Officer, Camp Custer Base Hospital, as follows: "It has occurred to me that there would be no better place for training these dietitians for Army work than in an Army hospital. Would it be possible for you to allow us to send to you some of the best students for training as student dietitians?" The Surgeon General approved this training course for pupil dietitians and requested that 2 weeks prior to the com-

pletion of the 4-month course a report of the efficiency of these dietitians be forwarded to his office with a recommendation as to the advisability of appointing them as dietitians.

The 4-month course for pupil dietitians at Camp Custer Base Hospital was quite comprehensive in scope. The first month was spent doing administrative work, such as distributing menus to wards, receiving and checking diet cards and supply slips, totaling diets for cooks, keeping accounts, and maintaining records of the various diets. By observing in various kitchens and wards, they became acquainted with food service, tray service, garbage inspection, and dish sterilization. During the first month, they also observed in the commissary the Army system of buying, ordering, and issuing food. The second month, the pupil dietitians were assigned to the patients' kitchen where they planned menus, calculated caloric values of three meals each week, ordered supplies for regular and light diets, and supervised preparation of food for patients including special diets. During the last 2 months, the pupil dietitians took charge of the nurses' kitchen and acted as diet supervisors on the ward.

The four pupil dietitians at Camp Custer Base Hospital, who entered on duty between 15 October and 1 November 1918, completed training in February 1919. This was the first training program on record for dietitians in Army hospitals, and even though it was too late to be of much help in World War I, it is significant because it was the forerunner of the Army training courses for dietitians.

Before her resignation in 1919, Miss Cooper recommended to The Surgeon General that a training school for Army dietitians be established at Walter Reed General Hospital. There, qualified dietitians would be under observation and instruction as to the special features of the Army and work for a period of time before being sent to other posts where they would probably be the only dietitians. A training course, however, was not established until 1922. (See Appendix C, p. 597.)

DEMOBILIZATION

Dietitians returning from overseas for demobilization were given a cursory physical examination for any gross evidence of contagious disease. Even though the dietitians had been exposed to the hazards of war and had incurred disabilities resulting from service under arduous war conditions, they were not eligible for the hospitalization privileges which were available to military personnel. More than one dietitian physically disabled as a result of her service with the Army was given assistance in hospitalization by the Red Cross.

Most of the dietitians returned to civilian positions as soon as possible after demobilization. Final discharge papers were forwarded from the Surgeon General's Office at the expiration of accrued leave, and discharge was made with the approval of the Secretary of War.

DECORATIONS AND COMMENDATIONS

Four dietitians, Florence Bettman, Margaret Knight, Anne T. Upham, and Rachel Watkins, gained considerable recognition when they were cited in 1919 by the British Government "In recognition of meritorious services rendered the allied cause."

In addition, Marjorie Hulsizer was decorated by King George V of England as well as by the French Government. Miss Hulsizer in introducing the comparatively new profession of dietetics into the British Army was called "home sister" in contrast to the British Army nurses' title "nursing sister." A memorial award given by the American Dietetic Association was established in 1945 to perpetuate the memory of Marjorie Hulsizer Copher in recognition of her distinguished service to the dietetic profession. The first recipient of this award was 1st Lt. Ruby F. Motley, Medical Department dietitian, released prisoner of war of the Japanese in World War II.[16]

DEATHS

Records indicate that four dietitians died while on duty with the Army in World War I. The two dietitians who died while serving in cantonment hospitals in this country were Miss Olive Norcross of Worcester, Mass., at Camp Dix, N.J., on 26 September 1918, and Miss Mada Morse of Foxboro, Mass., at Camp Taylor, Ky., on 24 September 1918. The two dietitians who died while serving overseas were Cara Mea Keech, Base Hospital No. 68, 18 October 1918, and Marion Helen Peck, Base Hospital No. 44, 17 February 1919. Miss Keech was buried in England and Miss Peck was buried in Suresnes, France.

RECOGNITION ON THE NEED FOR MILITARY STATUS

In July 1919, The Surgeon General orally requested that Miss Cooper, Supervising Dietitian, submit recommendations on the future position of the dietitian in Army hospitals. (See Appendix A, p. 593.) Subsequent history proves that most of the recommendations made by Miss Cooper to improve the status of dietitians after World War I were adopted during World War II. She stated that there was a need for dietitians on the permanent staff of the larger Army hospitals, as in civilian institutions. In view of the many letters received from dietitians expressing disappointment and a feeling of unfairness in not receiving the same privileges as granted to nurses, Miss Cooper recommended that all "female civilian employees of the Medical Department in the field receiving their appointment from the Secretary of War (in other words, technically trained women) should be granted the same privileges as are granted the members of the Army Nurse Corps." To accomplish this she recommended the establishment of a separate corps

[16] The First Marjorie Hulsizer Copher Memorial Award. J. Am. Dietet. A. 21: 703–704, December 1945.

for dietitians with a competent dietitian as director in the Surgeon General's Office. The director was to "be put on the regular list of inspectors of the Hospital Division, to be called upon to make inspection where the mess is involved." Miss Cooper thought that dietitians belonging to this corps and assigned in the field should be responsible professionally to the commanding officer. Despite all the handicaps that confronted the dietitian in World War I, she believed that the contribution they had made to improve patient care proved their qualification to be a permanent part of the Medical Department.

Section II. Peacetime (1923–40)

Although the experiences of World War I were disheartening to many dietitians, their services had brought into vivid reality the need for qualified dietitians in Army hospitals. By 1931, the American College of Surgeons required that a qualified dietitian be employed on the staff of a hospital before approval by that organization could be obtained. The educational and professional qualifications established by the Surgeon General's Office required that an applicant have a 4-year college course with a degree in foods and nutrition plus an 8- to 12-month course in a recognized school for hospital dietitians.

In 1937, in addition to a bachelor's degree from an accredited college or university with a major in food and nutrition or institution management, graduation from an approved 12-month training course was required. Throughout the peacetime period, the qualifications for dietitians met the requirements established by the American Dietetic Association. Applicants had to meet the Army physical qualification standards. The basic salaries (Appendix B, p. 595) for civilian dietitians ranged from $840 per annum in 1923 to $1,820 in 1942, and were paid from various funds: the Medical and Hospital Department, Army; the Civilian Conservation Corps; or the Veterans' Bureau (now Veterans' Administration).

TRAINING

During the peacetime period, three dietitians, Miss Genevieve Field (1922–25), Miss Grace H. Hunter (1925–33), and Miss (later Lt. Col.) Helen C. Burns [17] (1933–42), in addition to being the chief dietitian at Walter Reed General Hospital, were also responsible for the administration of the training course. They maintained liaison with The Surgeon General on all dietitian activities both in professional and personnel areas. The improvement of the status of the Army dietitian during peacetime years and the high standard of the training course for hospital dietitians at Walter Reed General Hospital were largely due to the planning, supervision, and recommendations of these dietitians.

The training program was initiated at Walter Reed General Hos-

[17] Later Maj. Helen B. Gearin, WMSC.

pital, 2 October 1922, as part of the Medical Department Professional Service Schools at the Army Medical Center. The course was organized under the direction of Brig. Gen. James D. Glennan, Commanding General, Army Medical Center (later Walter Reed Army Medical Center), Washington, D.C., and Miss Field who was assigned there during World War I. This was the only training course for dietitians conducted by the Army from 1922 to 1942. The program always met the requirements of the American Dietetic Association. As of August 1942, approximately 210 dietitians had been graduated from this course. (See Appendix C, p. 597.)

ASSIGNMENTS, PROMOTIONS, AND RESIGNATIONS

Dietitians were assigned to Army hospitals at the request of the commanding officer of the hospital. Upon resignation or transfer of a dietitian, the commanding officer communicated with The Surgeon General and stated whether or not a replacement was desired. The dietitians were normally graduates of the training course for hospital dietitians at Walter Reed General Hospital.

The Surgeon General's Office also sent letters to commanding officers of the various hospitals stating the date that a class of dietitians would complete training at Walter Reed General Hospital. This facilitated the placement of these graduates and aided in filling vacancies more promptly.

Even though The Surgeon General strongly recommended that Army hospitals employ only those dietitians who had training at Walter Reed General Hospital, in a few cases where serious shortages existed it was deemed necessary for commanding officers to employ civilian trained dietitians provided they met the qualifications established by The Surgeon General. The Surgeon General approved these appointments only as an emergency measure such as in the case of Miss (later Maj.) Ruth Boyd employed at Letterman General Hospital, San Francisco, Calif., in 1936.

Recommendations for promotions were made through the commanding officer of each hospital to The Surgeon General. The Surgeon General, by authority of the Secretary of War, then approved the promotion. Resignations were submitted to the commanding officer of the hospital by the dietitian. The commanding officer approved the resignation and submitted it to The Surgeon General with request for replacement if one was desired. The Surgeon General, in turn, approved the resignation and issued a final order for discharge.

STRENGTH

The number of dietitians on duty in Army hospitals gradually increased during the peacetime years from 24 in 1923 to 53 in 1939. One drastic cutback in strength occurred in 1933 as a result of the National Economy Act. In the 3-month period from March to June, 28

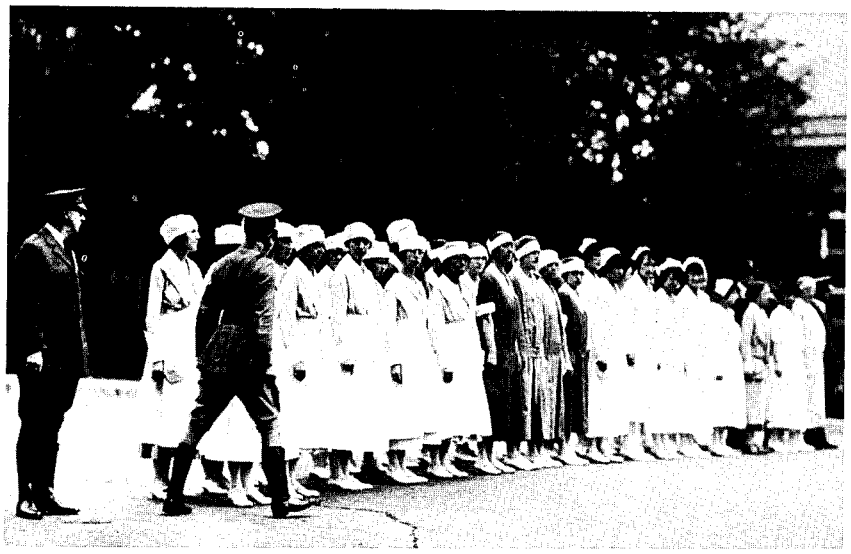


FIGURE 6—Fourth of July muster, Walter Reed General Hospital, Army Medical Center, Washington, D.C., 1925. Left to right: Occupational therapists, physical therapists, dietitians, and other Medical Department personnel. (U.S. Army photograph.)

dietitians were released, leaving only 7 dietitians serving with the Medical Department. By 1934, a majority of the dietitians had been reemployed by the Army.

The value of having this number of highly qualified dietitians was soon evident. The knowledge and experience which these dietitians had gained in their years of service in Army hospitals enabled them to assume positions of responsibility and leadership during the period of rapid expansion for World War II.

UNIFORMS

During the early peacetime period, it is believed that the on-duty uniforms worn by dietitians in Army hospitals were much like the white uniforms worn by the dietitians in World War I. In order to distinguish the dietitians from nurses, General Glennan recommended to The Surgeon General that dietitians be authorized to wear one blue ribbon on their caps, the same shade of blue used in the lining of the cape issued to dietitians by the Red Cross in World War I. The Surgeon General, in August 1922, authorized the wearing of a band of blue ribbon no wider than one-half inch on the dietitian's cap.

In 1925, The Surgeon General described the dietitians' uniform as a straight one-piece dress of white poplin or percale (fig. 6). A small white cap of Indian linen was worn. An Oxford gray cape lined with blue flannel completed the uniform. Later, the cap was changed to

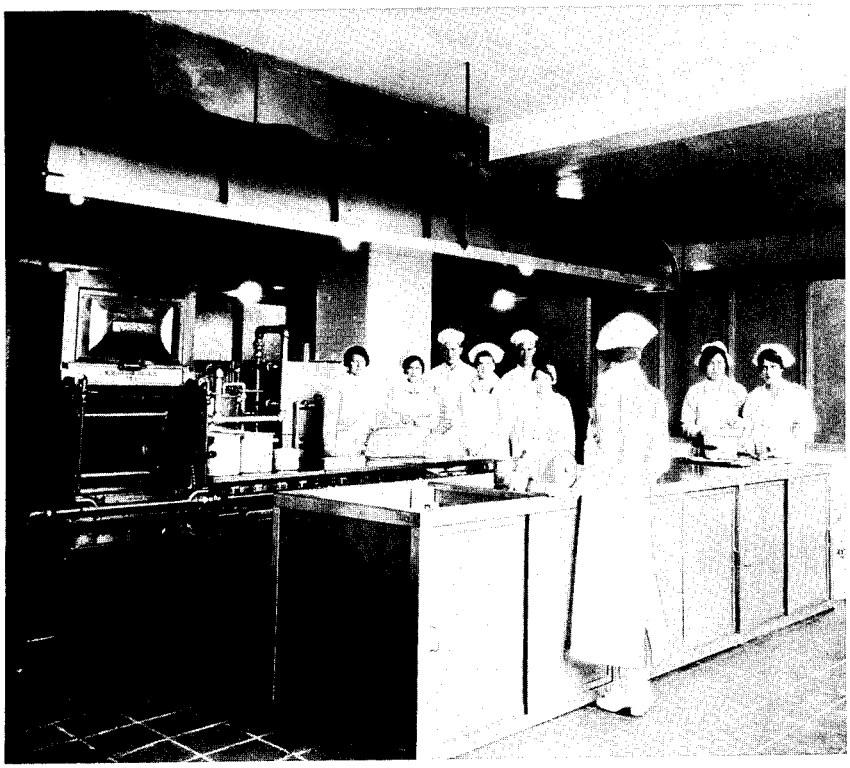


FIGURE 7—Dietitian instructing diet kitchen employees in new Mess No. 2, Walter Reed General Hospital, Army Medical Center, Washington, D.C., 1928. (Note tile floor.) (U.S. Army photograph.)

white lawn; the head dietitian was authorized to wear one band of blue velvet ribbon one-half inch in width on the cap, and the graduate dietitian, one band of blue velvet, three-eighths of an inch.

STATUS AND DUTIES

The dietitians assigned to Army hospitals after World War I were confronted with many of the problems that existed prior to the signing of the armistice. Dietitians were still civilians employed in a military organization working under a mess officer of the Medical Administrative Corps. Their duties in some hospitals were of such scope that they carried great responsibility, and in other hospitals, they were assigned only the supervision of the preparation and service of special diets.

The scope of the Army dietitian's work and the responsibility she was given were dependent to a large extent upon the person to whom she reported directly and to the hospital commander. Dietitians were allowed more and more responsibility in patient feeding in Army hos-

pitals as the science of nutrition progressed and the place of diet in the prevention and treatment of disease was recognized. Dietitians were assigned to certain medical wards to assist with the metabolic treatment of the patient. In the larger Army hospitals, dietitians supervised the main mess as well as the diet kitchen (fig. 7). They also contacted regular and modified diet bed patients on the wards in order to insure good dietary care. In addition, their duties included teaching courses for patients with diabetes as well as others on modified diets.

An indication that dietetics was becoming more and more important in Army hospitals was evidenced by the appointment of a Medical Corps officer to the position of Director, Dietetic Department, Walter Reed General Hospital, on 1 November 1929. Maj. (later Col.) A. L. Parsons, MC, the first medical officer to fill this position, had two assistants, one, an officer of the Medical Administrative Corps, and the other, the chief dietitian. Because of the training course for dietitians, Walter Reed General Hospital was the only Army hospital authorized the position of chief dietitian. Dietitians in charge at other hospitals were known as head dietitians.

An article in the *Journal of the American Dietetic Association* in 1930 described in detail the duties of administrative dietitians, scientific (therapeutic) dietitians, and teaching dietitians at Walter Reed General Hospital.

The administrative dietitian, assigned to the hospital mess, was required to have knowledge of food supplies, cost and marketing conditions, buying, receiving, checking, storing, and distribution of food. She was responsible for the planning of balanced menus, preparing orders for all foods, and supervising the preparation and cooking of foods. She arranged the duties of the employees and had supervision of their work. She checked the amount of food and food supplies sent to the wards and made ward rounds to confer with doctors, nurses, and patients. The supervision of the serving of food in the messhall, dining rooms, and wards was part of her responsibility. It was pointed out that this dietitian had a great deal of influence in controlling the food budget of the hospital which had to be regulated to effect every possible economy and still maintain a high standard of efficiency.

The scientific (therapeutic) dietitian was in charge of special diets. In addition to patients with diabetes, many other conditions and diseases called for scientific management by the dietitian. Experimentation was done with the ketogenic diet for patients with epilepsy. Walter Reed General Hospital at this time was serving 7,500 special diets a month. The importance of the therapeutic dietitian in other Army hospitals continued to increase.

The teaching dietitian had an important function in the teaching of patients and student nurses, as well as student dietitians. The training school for hospital dietitians at Walter Reed General Hospital brought the medical and surgical departments into closer contact with the dietary department as the officers instructing the group became familiar

with the fact that the dietitians were scientifically trained and well able to aid them in their nutritional problems with patients. As these close relationships were continued in other Army hospitals, the dietetic treatment of the patient was improved throughout the Army.

By 1933, the dietitian had become such an important member of the medical team that Maj. Gen. Robert U. Patterson, The Surgeon General, expressed grave concern over the discharge of dietitians because of economy legislation. He stated in a letter to Dr. Malcolm T. MacEachern, Director, American College of Surgeons, that dietitians had come to be considered essential to the proper functioning of Army hospitals. He explained that as many as possible were being retained contingent upon the availability of funds.

Since World War I, there had been no regulations published to standardize and clarify the work of dietitians in the Army. In January 1931, Miss Hunter, chief dietitian at Walter Reed General Hospital, in a letter to The Surgeon General, stated that "The status of the Hospital Dietitian employed by the Army is not generally understood, nor is there a wide appreciation of the difficulties under which she labors." She mentioned that in the more than 12 years during which dietitians were employed by the Army, there had been no material change in their status and no regulations had been published outlining their duties. No action was taken on this letter.

Throughout the thirties, hospital commanders, medical officers, directors of dietetic departments, and the chief dietitian at Walter Reed General Hospital persisted in trying to establish a definite status for Army dietitians. It was still evident that some regulations would have to be published. In 1936, Miss Burns recommended that the circular letter which had defined the status and duties in 1919 [18] be revised to standardize the duties of dietitians in Army hospitals and clarify the problems that dietitians were still facing. Miss Burns stated that "consideration of the duties and status of dietitians in a number of military hospitals indicates the necessity for a general statement defining the dietitians' place and duties."

Brig. Gen. Wallace C. DeWitt, Commanding General, Army Medical Center, Washington, D.C., incorporated Miss Burns' suggestions in a report to The Surgeon General. Information from stations where graduates of the Walter Reed School of Hospital Dietitians were assigned indicated that their services were not always utilized in a manner for which their education and training had adequately prepared them. General DeWitt cited one case in which a dietitian was required to relieve the cook every afternoon. There were even instances where the dietitian occupied a position subordinate to that of the mess sergeant.

Even though a revision to this circular was never published, the fact that all the dietitians received training at Walter Reed General Hospital tended to give uniformity and a high standard of food service in Army hospitals that otherwise could not have been maintained.

[18] See footnote 9, p. 20.



FIGURE 8—Diet kitchen, Fitzsimons General Hospital, Denver, Colo. (Courtesy of National Library of Medicine.)

In July 1937, Maj. Carl R. Mitchell, MC, Director of Dietetics, Walter Reed General Hospital, pointed out that dietitians, as far as their professional work was concerned, should be responsible to the commanding officer. Considering that the dietitians were well educated and thoroughly trained, Major Mitchell thought they should be permitted to exercise the same authority over mess personnel that the head nurse on a ward exercised over ward personnel. Under the mess officer, the dietitian was to be responsible for the entire food service to patients. Her duties were to plan menus for all diets, keep the food cost within the allowance, supervise the preparation and service of all meals to cafeteria (ambulatory) patients, keep a close inspection of waste, direct employees, assist in the ordering of food supplies and the procurement of kitchen equipment, instruct and demonstrate preparation of special diets to patients, and make ward rounds to contact patients, doctors, and nurses.

FOOD, PERSONNEL, AND EQUIPMENT

The conditions under which dietitians worked varied in different installations. The local food products at some hospitals were excellent and the value of the ration entirely adequate because of the economical food supply. In hospitals located on isolated Army posts, it was more difficult to provide a variety of food and to remain within the ration because this allowance did not always advance with the seasonal price of local foods. The general hospitals were allowed the monetary value of

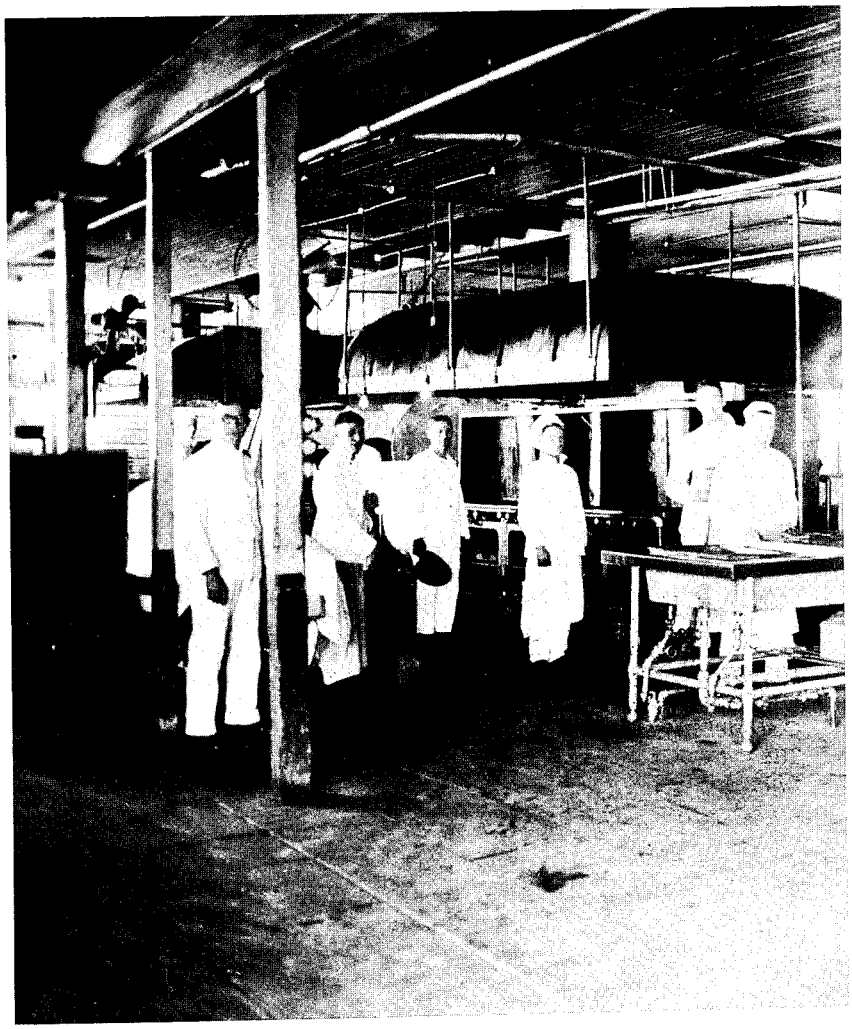


FIGURE 9—Kitchen in Mess No. 2, Walter Reed General Hospital, Army Medical Center, Washington, D.C., 1921. (Note concrete floor.) (U.S. Army photograph.)

the garrison ration plus 50 percent. However, small station hospitals did not receive the extra rations that were allowed the general hospitals, even though they had patients who were on a general hospital status and required special diets. It was necessary for these smaller hospitals to practice the strictest economy, thus making it difficult to maintain high food standards.

The Quartermaster Corps provided food for the hospitals. However, it was sometimes necessary to supplement these supplies by the purchase

of fresh fruits and vegetables from local markets. Meats and dairy products at all stations were Government inspected.

In 1925, the value of the ration varied from $0.27 to $0.31, and it was necessary for dietitians to take advantage of low-priced foods such as fish and poultry when in ample supply in the local market. In 1932, the ration was as low as $0.22. On 3 January 1933, the meat component of the garrison or troop ration was amended to include fresh chicken and fresh pork, in addition to the former bacon and fresh beef allowance, and fresh eggs.[19] Fresh milk was added for the first time, along with certain fruits and vegetables. Since all Army hospitals were then allowed the garrison ration plus 50 percent, this provided sufficient funds for food for special diets and nourishment.

The ration allowance was adequate during the remainder of the peacetime period. The food served in Army hospitals was of excellent quality. The ration was sufficiently liberal to take care of the patients' needs, and authority to make outside purchases of food and patient welfare items was continued during this period. Selective menus for officers' wards, women's wards, and officers' messhalls were inaugurated at Walter Reed General Hospital in 1930 and at Fort Sam Houston Station Hospital, Tex., in 1936.

Many hospitals employed civilians for kitchen-police duty and in some instances civilian cooks were employed. In 1941, a training course for enlisted hospital diet cooks was established at Walter Reed General Hospital to train cooks in the preparation and service of diets for patients in small hospitals where no dietitian was assigned.

During the twenties, many improvements were made in mess equipment. These included the installation of labor- and material-saving devices, new ranges, electric mixers, electric meat grinders, electric food choppers, and replacement of the Diller and Dear food carts and containers by the Drinkwater type. Water coolers with ice compartments were placed in many of the messhalls. Ward diet kitchens were equipped with steam tables, electric ranges, electric hot plates, dishwaters, and white top sani-onyx tables (fig. 8). Modern dishwashing rooms were built in general hospital messhalls for the first time. Although some Army hospitals had tile floors, in 1928, The Surgeon General approved the installation of tile floors in messhalls and kitchens in many more Army hospitals, replacing the unsightly concrete floors that were exceedingly difficult to keep clean (fig. 9). Separate cafeteria lines for ambulatory patients as well as enlisted duty personnel were in vogue in most of the general hospital messes at this time. Ambulatory patients on diets were even served in the cafeteria lines. Several electric food carts were used at Walter Reed General Hospital in 1929. Meat-slicing and bread-slicing machines were also in use in many hospitals in 1929. This modern equipment did much to improve the quality of food service in Army hospitals, and it was purchased through the hospital fund in some instances.

[19] Army Regulations No. 30–2210, Changes No. 1, 3 Jan. 1933.

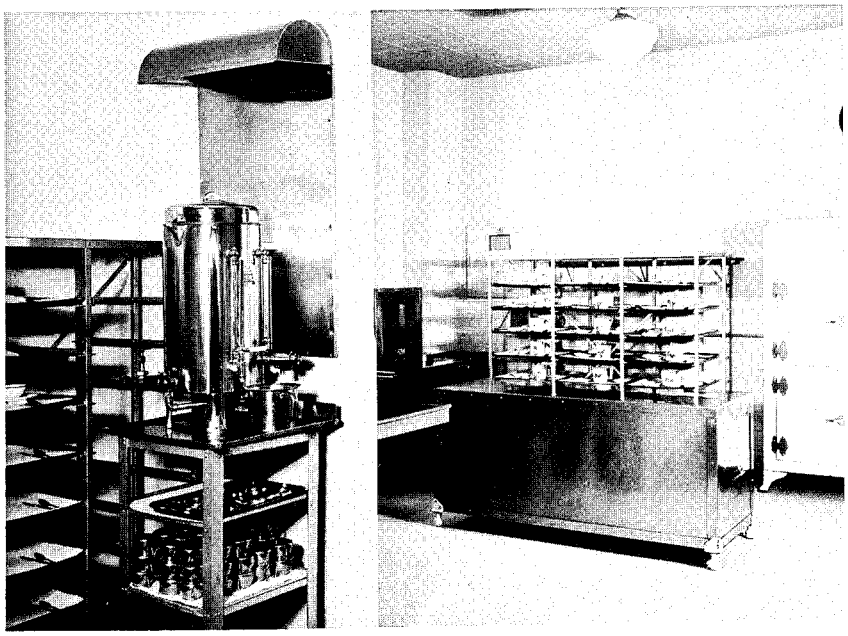


FIGURE 10—Diet kitchen, Walter Reed General Hospital, Army Medical Center, Washington, D.C., 1943. (U.S. Army photograph.)

By 1932, gas-burning broilers and bake ovens, meat, fish, and bone cutters, rotating gas-burning toasters, stainless steel tabletops, stainless steel sinks, electric refrigerators, electric dough dividers, and bread wrapping and sealing machines were in use in at least two Army hospitals. In the mid-thirties, walk-in refrigerators with compartments for different types of food were being installed. Cereal cookers, electric mixers, automatic water heaters, and quickfreeze rooms were also being installed. During the late thirties, automatic waffle irons, electric ranges and ovens, electric grills, and steak cubing machines were more widely used. Coffee urns were installed in individual ward kitchens about this time. By 1940, the equipment in the mess departments of the permanent Army hospitals was modern and adequate (fig. 10). Even the smaller station hospitals had replaced much of their old equipment.

By the time World War II was imminent, the ration allowance was sufficient to provide well-balanced and appetizing meals for patients in Army hospitals, and under the supervision of trained dietitians, high standards of food production were being maintained. Adequate equipment and well-trained personnel contributed to the maintenance of these standards during the peacetime years.

CONTINUED RECOGNITION OF THE NEED FOR MILITARY STATUS

Throughout the peacetime period, the champions who had so faith-

fully persisted in trying to establish definite duties and status for dietitians in the Medical Department recognized that many of their problems could be solved by military status.

Miss Cooper, Supervising Dietitian in the Surgeon General's Office at the close of World War I, continued her interest in the status of dietitians in Army hospitals. In reply to a letter written by her to The Surgeon General in 1930, Brig. Gen. Henry C. Fisher, Acting Surgeon General, stated: "At present dietitians on duty in Army general hospitals are in the status of civilian employees and function under the direction of the commanding officer. This is proving a satisfactory arrangement for peacetime. Regarding future emergencies, when the services of large numbers of dietitians might be required as in the World War, * * * a new law must be enacted to give military status to these individuals."

At the end of World War I, Miss Cooper had officially started the fight for legislation which continued for the next 13 years. During this time, many people worked for the establishment of military status for dietitians, among them, Miss Hunter and Miss Burns, chief dietitians at Walter Reed General Hospital; Major Parsons, Director of Dietetics at Walter Reed General Hospital; Col. (later Brig. Gen.) Roger Brooke, MC, Commanding Officer, Fort Sam Houston Station Hospital; and General DeWitt.

Throughout the peacetime years dietitians desired to become a permanent part of the Medical Department. It was the everlasting goal toward which all Army dietitians strived. The education and experience requirements for candidates to be eligible for service as dietitians in the Army were so high and the services that they rendered so important, it was thought that it could only be a matter of time before legislation was enacted making them a permanent group in the Medical Department.

CHAPTER III

Physical Therapists Before World War II (1917-40)[1]

Colonel Emma E. Vogel, USA (Ret.)

Section I. Physical Therapists (1917–19)

THE PHYSICAL RECONSTRUCTION PROGRAM IN THE MEDICAL DEPARTMENT

Physical therapy as a recognized profession in the Medical Department had its beginning in World War I as an important phase of the physical reconstruction program. The experience of European countries already at war had clearly demonstrated the effectiveness of programs to conserve manpower. These programs were directed toward the restoration of the wounded soldier to military duty as soon as possible, or if that was not feasible, to return him to civilian life in a physical condition which would enable him to function in the highest degree possible consistent with his injury.

Since the United States had no experience in such programs early in 1917, Maj. Gen. William Crawford Gorgas, The Surgeon General, designated a committee of Army medical officers to study and report on the program conducted in British Army hospitals. These officers reported most enthusiastically on the program, and, as a result, on 22 August 1917, the Division of Special Hospitals and Physical Reconstruction was established in the Surgeon General's Office. Physical reconstruction was defined as maximum mental and physical restoration of the individual achieved by the use of medicine and surgery, supplemented by physical therapy, occupational therapy or curative workshop activities, education, recreation, and vocational training. Physical therapy was described as consisting of hydrotherapy, electrotherapy, and mechanotherapy, active exercise, indoor and outdoor games, and massage.

Early in 1918, Dr. Frank B. Granger of Boston, Mass., was appointed a captain in the Medical Reserve Corps and assigned as Chief, Physical Therapy Section, Division of Physical Reconstruction, Surgeon General's Office. Nationally known as a pioneer in this field, he was well

[1] (1) Physical therapy was first known as physiotherapy. In World War I, physical therapists were first known as reconstruction aides, and later referred to as physiotherapy aides. However, for the purpose of this history, the terms "physical therapy" and "physical therapists" will be used. (2) The primary source of information for the World War I portion of this chapter is: The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1927, vol. XIII.

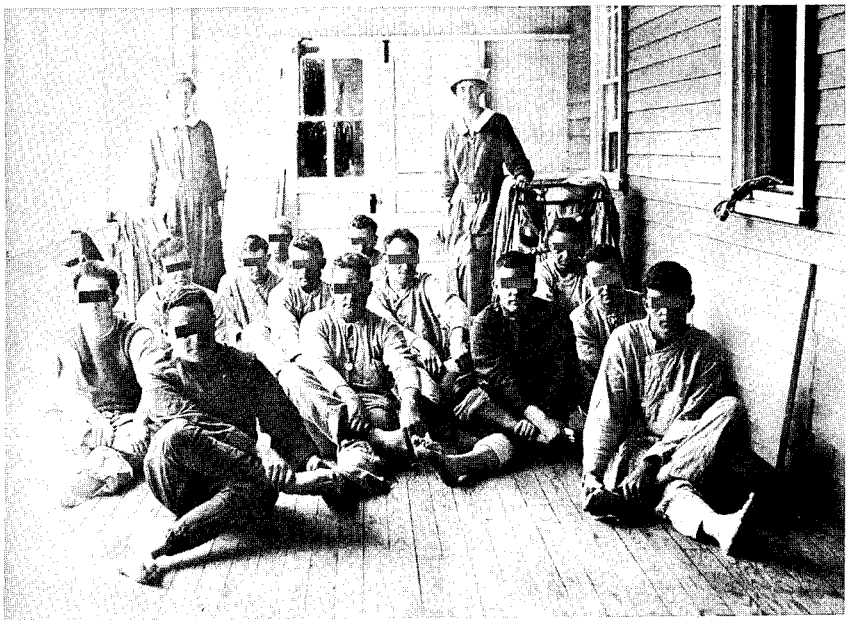


FIGURE 11—Group exercise, 1918. Group of patients administering self-massage and resistive exercise for foot disorders under the direction of Miss Mary McMillan (right).

qualified to introduce this new form of treatment to the Army. Under Captain (later Lt. Col.) Granger's administrative and professional genius careful selection of personnel was made, standardization of apparatus was initiated, informal instruction of medical officers was initiated, and physical therapy clinics were gradually established on a large scale. In developing this program, Captain Granger was confronted with many obstacles. Many medical officers were skeptical of the values claimed for physical therapy, but reconciled themselves to what they termed an intruder in the medical profession, feeling that it was a passing fad. Some medical officers were so incredulous that the only patients they would entrust to physical therapists were those whose condition could not possibly be impaired by the application of the new therapeutic measures.

The first Supervisor of Reconstruction Aides in the Surgeon General's Office was Miss Marguerite Sanderson, formerly President, Boston School of Physical Education, who reported for duty in January 1918.[2] After several months devoted to organizational and administrative prob-

[2] The records contain very little information relative to Miss Sanderson's previous experience in physical therapy other than the mention made of her work with Joel E. Goldthwait, M.D., Boston, Mass., from 1913 to 1915.

lems, she was transferred to Walter Reed General Hospital, Washington, D.C., to organize units for oversea hospitals. The first of these units sailed in June 1918. Miss Sanderson went to France in September 1918 where she was assigned as supervisor of reconstruction aides in physical and occupational therapy with the American Expeditionary Forces and later with the army of occupation.

The first physical therapist with the Army, Miss Mary McMillan, reported to Walter Reed General Hospital in February 1918.[3] Since she was afforded no clinic space, she administered treatments to patients on the hospital wards and utilized porch space for group exercise (fig. 11). By April, the first hospital physical therapy clinic in the United States opened at Walter Reed General Hospital.[4] It was a large U-shaped building [5] which consisted of a gymnasium, a large treatment room equipped with plinths and many types of electrical and heating devices, a hydrotherapy section, several small treatment rooms, and administrative offices. Physical therapists assigned to some Army hospitals, however, often found no space nor equipment, and many members of the hospital staff totally unfamiliar with this new specialty. If clinic space was available, it was often in a basement or some other area of the hospital not desired by any other service.

From the very beginning, the physical therapy programs lacked coordination. They were usually conducted in three different areas, that is, treatment in the clinic, in the gymnasium, and on the hospital wards. It sometimes happened that the treatment administered in one section was not known to physical therapists in the other sections, a situation not conducive to optimum therapeutic results. Neither was this treatment known to other members of the hospital staff. Gradually, a system of records was evolved to incorporate all of the patient's treatment on one card which was then available to all interested personnel.

With the return of a large number of disabled men in the months following the armistice, it became necessary to expand the physical therapy program. The number of physical therapists employed increased commensurately with the increase in the number of hospitals equipped with physical therapy facilities (table 1).

The contributions made by physical therapists are well summarized in the following statement made by a medical officer who served in physical therapy clinics of three different hospitals during the war: [6]

> I have never known of anything approaching the devotion of these girls to their work. They worked hard all day, attended lectures on technic after hours, held quizzes during the noon hour and in the evenings and could be found in the clinic until late hours trying out technics one upon the other * * *. No corps ever displayed greater loyalty, more unselfishness, greater devotion to

[3] Miss McMillan had had extensive training and experience in physical therapy in British hospitals before coming to the United States in 1915.

[4] Kovács, Richard: Electrotherapy and Light Therapy With the Essentials of Hydrotherapy and Mechanotherapy. 4th edition. Philadelphia: Lea & Febiger, 1942, pp. 23, 686.

[5] Since April 1918, the building has been renovated many times and now houses the Officers' Open Mess at Walter Reed Army Medical Center.

[6] Sampson, C. M.: Physiotherapy Technic. St. Louis: C. V. Mosby Co., 1923, pp. 9, 412–413.

duty or a better general high average of efficiency, from the chief aide to the humblest assistant aide, than did the reconstruction aide body during the heaviest work of the reconstruction period. Their *esprit de corps* became a thing remarked upon by all who observed their work.

TABLE 1—*Physical therapists and physical therapy facilities in the Medical Department, U.S. Army, October 1918 to May 1919*

Category	1918			1919				
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Physical therapists	125	378	504	530	674	718	748	700
Hospitals with physical therapy facilities	9	11	13	27	32	40	49	45

Source: Report of The Surgeon General, U.S. Army. Washington: Government Printing Office, 1919, p. 1178.

TRAINING AND PERSONNEL

Investigation showed that there were very few people in the United States who had had any education or experience in the field of physical therapy. The procedures were too technical to be administered by untrained personnel. Accordingly, it was proposed in September 1917 that the Army establish a physical therapy training course at the Soldiers' Home, Washington, D.C., for both physical therapists and enlisted men. For reasons not recorded, however, the plan did not materialize.[7]

Since the training of physical therapists had never before been attempted in this country, The Surgeon General invited several prominent educators to a conference in his office to discuss the problem which confronted him. As a result of this conference, an appeal was made to physical education schools to cooperate in establishing short intensive emergency physical therapy training programs. Early in 1918, The Surgeon General approved the outlines and plans submitted by the schools which were willing to undertake this training. In April, emergency physical therapy courses were initiated at the following institutions: American School of Physical Education, Boston, Mass.; Boston School of Physical Education, Boston, Mass.; Prose Normal School of Gymnastics, Boston, Mass.; New Haven Normal School of Gymnastics, New Haven, Conn.; Normal School of Physical Education, Battle Creek, Mich.; and Reed College, Portland, Oreg.

The largest enrollment was at Reed College where 200 students representing 72 universities or colleges and 31 states attended the second course.[8] In June 1918, at the urgent request of the president of Reed College, The Surgeon General granted Miss McMillan leave of absence from Walter Reed General Hospital to accept the position of director

[7] See footnote 1 (2), p. 41.

[8] (1) War Work For Women. Reed College Record, Portland, Oreg., No. 29, May 1918, and November 1918. (2) One of the students who graduated from Reed College was Miss (later Col.) Emma E. Vogel.

of the reconstruction clinic and instructor in massage for the emergency course at Reed College.[9]

It is believed that the curriculum offered at Reed College in 1918 was typical of the other emergency physical therapy training courses:

Subject	*Hours*
Anatomy:	
Theory	38
Laboratory	61
Physiology:	
Theory	16
Laboratory	16
Massage:	
Theory	38
Laboratory	74
Hydrotherapy	4
Electrotherapy	6
Remedial exercise:	
Theory	33
Laboratory	33
Pathology	26
Kinesiology	6
Psychology	10
Hospital management	2
Emergency treatment and bandaging	23
Personal hygiene	3
Ethics of nurses	2
Surgical clinic	15
Reconstruction clinic[1]	163
Development group exercise	28
Recreational exercise	23
Total hours	620

[1] Practical experience in the actual treatment of patients.

Its shortcomings were obvious before the first course was completed and it was planned that if necessary to continue the program, later courses would be more comprehensive. After the signing of the armistice, the emergency courses were terminated upon the completion of the courses then in progress.

Since exercise was to play a major role in the rehabilitation process, preference in the selection of students to attend these courses was given to those with high scholastic standing in the fundamentals of physical education. It is interesting to note that in evaluating the physical therapy program during World War I, Major Granger stated that in his opinion the best physical therapists were those who, prior to taking their physical therapy training,[10] had been graduated with a major in physical education.

[9] When this training program was terminated after the signing of the armistice, Miss McMillan returned to Walter Reed General Hospital. After being promoted to the grade of supervisor in October 1919, she served in an advisory capacity to The Surgeon General until 1920 on matters pertaining to the inactivation of physical therapy clinics and the discharge of physical therapists. Shortly after Miss McMillan's departure, in 1920, Miss Emma E. Vogel was appointed to the position of supervisor of physical therapists at Walter Reed General Hospital.

[10] Granger, Frank Butler: Physical Therapeutic Technic. Philadelphia: W. B. Saunders & Co., 1929, p. 164.

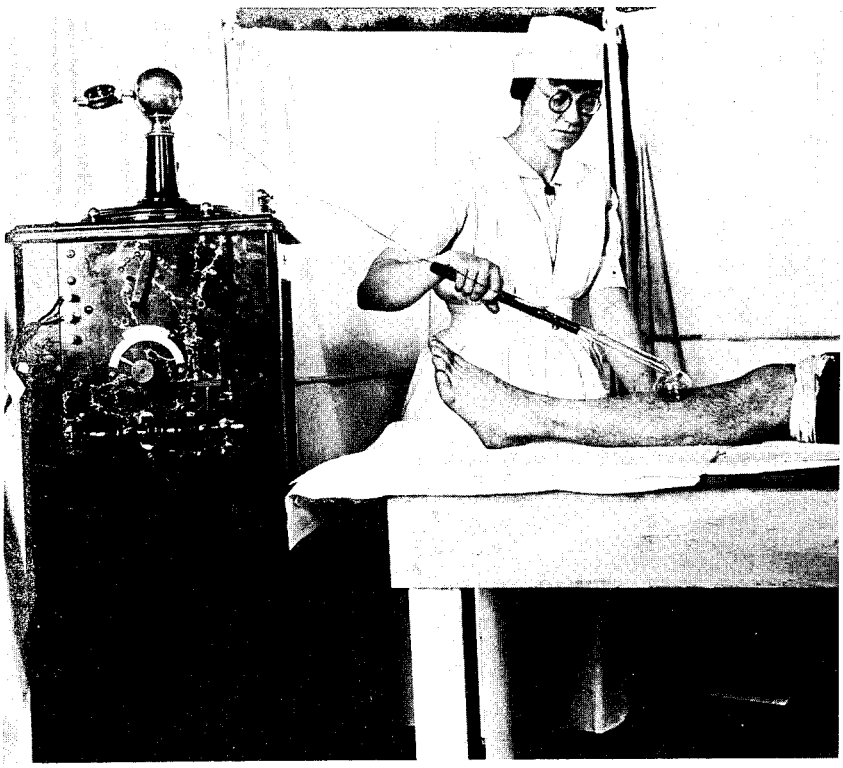


FIGURE 12—Uniform worn by physical therapists in some Army hospitals, 1920. Physical therapist is giving peripheral stimulation by means of a high frequency vacuum tube.

In July 1918, the medical director of physical therapy at Walter Reed General Hospital recommended to The Surgeon General that a course of training be immediately established at that hospital. The recommendation was based on the shortage of women adequately trained for military physical therapy. Such a program, however, was not implemented until 1922.

The exact number of physical therapists who served with the Medical Department during World War I is not known. From the available records, it appears that approximately 800 physical therapists were so appointed, most of whom were graduates of the emergency training courses.

UNIFORMS

The physical therapists' hospital uniform was a blue one-piece garment with a belt of the same material and detachable white collars and

cuffs. In some hospitals, they chose to wear a uniform and white apron similar to that worn by occupational therapists (fig.12). The cap worn by the staff physical therapists had a crown of blue organdy with a white band. The head physical therapist's cap was entirely white.

The street uniform worn by physical and occupational therapists during World War I was a two-piece dark gray suit, with a band of maroon and white braid on the sleeves. Worn with this was a partially belted cape of the same material, a black velour sailor-type hat (black straw for summer) trimmed with a maroon cockade and white braid, black hose, and high black shoes (fig. 13). Physical therapists going overseas were required to purchase and wear the prescribed street uniform, but its purchase and use in this country were optional. The insignia consisted of the bronze letters "R.A." (Reconstruction Aide). It was worn at the collar opening of the hospital uniform and on the lapels of the jacket and cape. Bronze caducei were worn on the lapels of the hospital uniform.

PROFESSIONAL ACTIVITIES

Army Hospitals in the United States

Since physical therapy was a newcomer in the medical world, many ward surgeons preferred to prescribe the treatment to be given to their patients. In most instances, the medical director of physical therapy was not authorized to prescribe the modality to be employed, or to make changes in the progression from passive to active exercise, for example, without consulting the ward surgeon concerned with the case. This system had one advantage in that the ward surgeons often came to the clinic to observe their patients, and with each visit they became more interested in physical therapy. It had the disadvantage of preventing the director of physical therapy from exercising his initiative and medical judgment.

By far the most time-consuming and the most popular form of physical therapy was massage which was prescribed for practically all patients (fig. 14). Unfortunately, its use was abused and often it was prescribed as a placebo. From records available, it appears that massage constituted about 40 percent of the total number of treatments administered while various types of exercise constituted only about 25 percent. Physical therapy measures were effectively used in the treatment of many conditions, but it was in the care of patients with orthopedic conditions and peripheral nerve lesions that it proved to be a most valuable adjunct. Space does not permit a discussion of all the types of patients treated by these procedures, hence only two of the larger groups will be discussed.

Amputations

Of the orthopedic conditions treated, patients with amputations constituted a very large percentage. Most of these patients had had no



FIGURE 13—Street uniform worn by physical and occupational therapists, World War I.

treatment other than initial surgery, usually a guillotine amputation performed in a field hospital. Consequently, these conditions were often complicated with infection, sequestra, contractures, deformities, bone and muscle atrophy, massive scar tissue, and edema. After corrective surgery, the routine physical therapy measures for amputees usually consisted of whirlpool baths or some form of dry heat and massage to mobilize scar tissue and reduce edema and passive exercise to stretch contracted muscles. This was usually followed by pressure exercises to toughen the stump end and the application of an elastic-type pressure bandage to assist soft tissue shrinkage. It was the responsibility of the physical therapist to instruct the amputee in the hygienic care of his stump, and, after the prosthesis was fitted, to instruct him in its use. Balance and walking exercises and games for at least an hour a day were stressed for lower extremity amputees; activities of daily living were emphasized for upper extremity amputees.

Peripheral nerve injuries

The treatment of patients with peripheral nerve lesions was discouraging to both the patient and physical therapist. Because of many months of inactivity, often with inadequate or no splinting, these patients usually demonstrated marked bone and muscle atrophy, extensive scar tissue involving nerves and tendons, and marked contractures and deformities, sometimes further complicated with causalgia, hyperesthesia, and circulatory conditions. After corrective surgery and splinting were accomplished, physical therapy procedures usually consisted of whirlpool baths, massage and stretching of the contracted muscles, re-educational exercises, and electrical stimulation of some type for paralyzed muscles. It is significant to point out here that, perhaps for the first time, galvanic and faradic currents were employed in determining the site and extent of the nerve lesion. Perhaps also for the first time, the physical therapist was called upon to give muscle strength (sometimes called "classification of muscle action") and sensory nerve tests. Copies of these tests were incorporated into the patient's permanent hospital record. At specialized hospitals where these patients were assigned, unlimited opportunities existed for the physical therapists to gain experience in use of various testing procedures and in evaluation of treatment. For example, in one hospital 1,700 patients with peripheral nerve injuries were hospitalized, over 600 at one time.[11] In many Army hospitals, medical officers on the neurosurgical service conducted special courses for physical therapists, stressing anatomy, muscle and sensory nerve distribution, and simple diagnostic tests for the common nerve injuries.

Army Hospitals With the American Expeditionary Forces

The physical therapy program in hospitals (fig. 15) supporting the

[11] See footnote 6, p. 43.

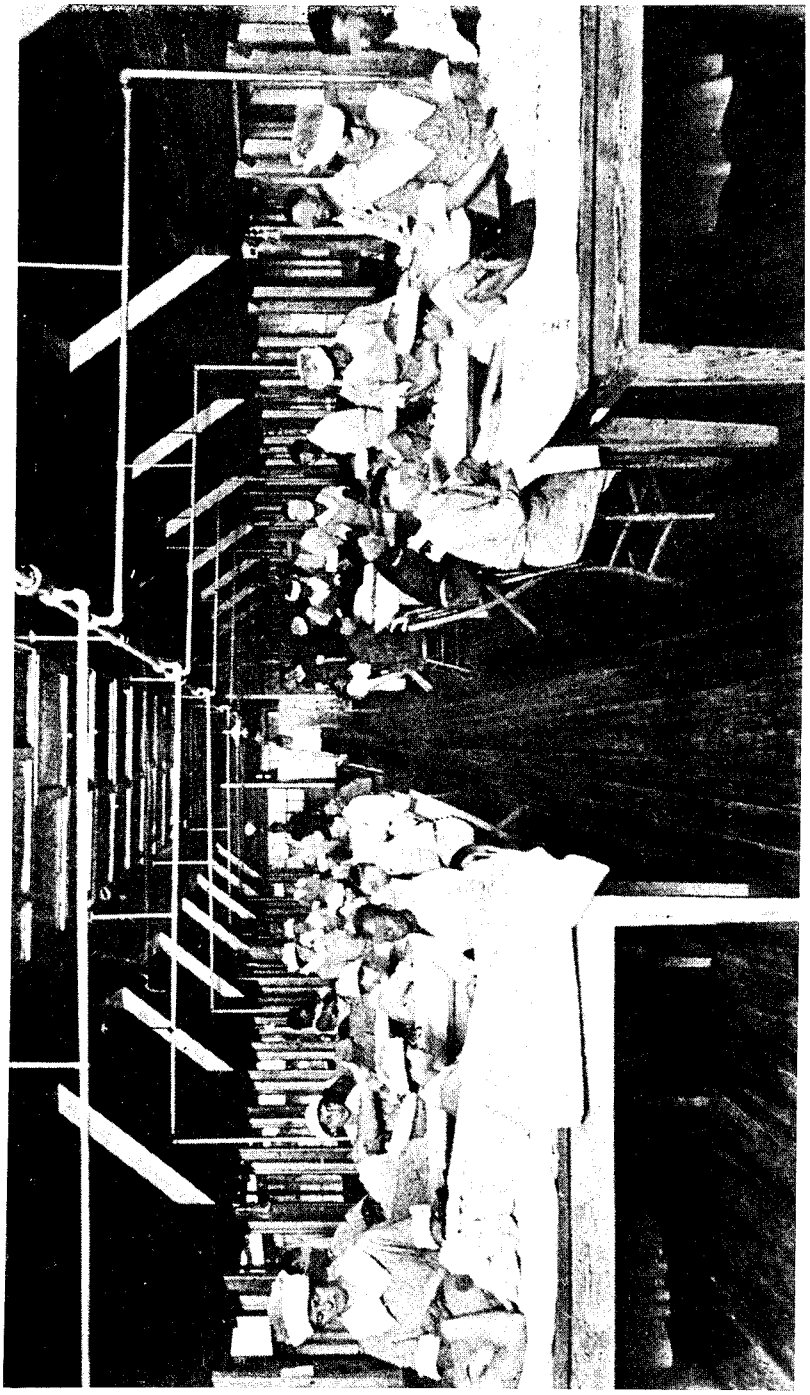


FIGURE 14—Physical therapy clinic, Fort Sam Houston Station Hospital, Tex., 1918.



FIGURE 15—Physical therapy clinic, U.S. Army Base Hospital, France, 1918. (Courtesy of National Library of Medicine.)

American Expeditionary Forces did not become as highly organized as it was in the Army hospitals in the United States, nor was it planned that it would be. Patients requiring long periods of hospitalization who would receive the most benefit from this type of treatment would be returned to the United States.

Approximately 80 physical therapists were assigned with the American Expeditionary Forces in late 1918.[12] By 15 March 1919, this number had been reduced to 71 and by 1 May 1919, that number had been further reduced to 54 assigned in 14 hospitals.[13] The records contain only meager reports of physical therapy activities in hospitals supporting the American Expeditionary Forces, but it is believed that the

[12] Report of The Surgeon General, U.S. Army. Washington: Government Printing Office, 1919, p. 1178.

[13] The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1927, vol. II, p. 129.

description of activities extracted from the report of the Savenay Hospital Center, France, is typical.

In October 1918 when four physical therapists arrived at the Savenay Hospital Center, their services were immediately utilized to assist the nurses in the care of a large influx of patients resulting from an influenza epidemic. As soon as this situation subsided, physical therapy was started in a small clinic. In December, a new clinic was opened in a large well-ventilated and well-equipped room and the number of physical therapists was increased to 30. Patients treated included those with gunshot wounds, peripheral nerve injuries, joint injuries, spinal cord and head injuries, amputations, trenchfoot, and many other conditions. When practicable, patients were grouped for curative exercises. These treatments were administered both in the clinic and on the hospital wards. During the winter months, a series of lectures were arranged for the physical therapists, and included such subjects as the pathology of contracture deformity, correction of contracture deformity by surgical and nonsurgical methods, use of splints and casts, mechanical treatment of joint injuries, and other allied subjects. The physical therapy program continued to function to full capacity until the discontinuance of the center.

Army Hospitals With the Army of Occupation

When the Third U.S. Army (army of occupation) established headquarters in Germany in January 1919, the surgical and orthopedic patients were concentrated in 2 evacuation hospitals to which 13 physical therapists were assigned. As the Third U.S. Army was reduced in size after the signing of the final terms of peace on 28 June 1919, the supporting hospitals were closed, and the physical therapists returned to the United States soon afterward.

Section II. Physical Therapists (1919–40)[14]

IMPACT OF ARMY PHYSICAL THERAPY ON CIVILIAN MEDICINE

Before World War I, there were very few physicians actively practicing physical therapy in the United States and these were often looked upon by the majority of their colleagues with suspicion.[15] Scattered groups of enthusiasts practiced electrotherapy in one area, hydrotherapy in another, and massage and manipulation in another. There were no physical therapy clinics in civilian hospitals where procedures could be evaluated or where research could be done. After the war, there became available several hundred physical therapists and an increasing number of physicians who had their first indoctrination in

[14] Information for the 1919–40 portion of this chapter is contained in the annual hospital reports submitted to The Surgeon General and the annual reports of The Surgeon General submitted to the Secretary of War during this period, supplemented by the author's personal files and knowledge.

[15] See footnote 4, p. 43.

physical therapy while serving in the Army. As a result, civilian practice in this field was given a tremendous impetus.

The organization which is known today as the American Physical Therapy Association was founded in 1921 by a nucleus of physical therapists who were or who had been in the service. Two objectives of this organization were "* * * to establish and maintain a professional and scientific standard for those engaged in the profession of physical therapeutics; [and] to increase efficiency among its members by encouraging them in advanced study." [16] Doctor Granger who assisted in the formation of the organization emphasized: "It is now necessary for you to maintain inviolate the high standard which you have initiated, but also by your influence and example to advance it to a still higher plane of usefulness and exactness." Miss McMillan was elected the first president of the organization and served until 1923.

During the twenties, the practice of physical therapy in the United States exceeded all expectations. The profession was sometimes widely exploited by cultists, and for a time, it seemed that overenthusiasm based on limited knowledge and experience threatened the future of this specialty. With a view toward placing the profession on a scientific basis, the American Academy of Physiotherapy was organized with Doctor Granger as its president. At the first meeting in Atlantic City, N.J., on 17 September 1923, Doctor Granger stated, "The World War resulted in the real birth of physiotherapy, and as a result it has begun to assume its rightful place in the medical world." [17] He pointed out the great need for standardization and recommended the establishment of a committee composed of physicians, electrical engineers, manufacturers, and representatives of the National Bureau of Standards to evaluate and standardize all electrical equipment.

During the rapid expansion of the profession, little attention was given to professional standards, ethics, or training and some commercial establishments even offered physical therapy training through correspondence courses. Because of this, in 1934, the House of Delegates of the American Medical Association passed a resolution stressing the need for control of the profession. As a result, in 1936, the Council on Physical Therapy (established in 1925) cooperated with the Council on Medical Education in making a survey of treatment practices and training courses.[18] After inspection by the latter council, a list of approved schools was published.

PHYSICAL THERAPY IN THE MEDICAL DEPARTMENT

As the World War I patients were discharged to return to civilian

[16] Hazenhyer, I. M.: A History of the American Physiotherapy Association. Phys. Therapy Rev. 26: 3–14, January-February 1946.

[17] Presidential Address, Frank B. Granger, M.D., before the first convention of the American Academy of Physiotherapy, Atlantic City, N.J., 17 Sept. 1923.

[18] See footnote 4, p. 43. Dr. Kovács states (p. 24) that the Council on Physical Therapy was formed in 1927. However, "The Board of Trustees reported the establishment of a Council on Physical Therapy in May 1925." From A.M.A. Digest of Actions of Board of Trustees, 1846–1958.

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life or were transferred to other hospitals, there was a general cutback in the physical therapy program in Army hospitals (table 2).

By 30 June 1921, the number of hospitals supporting this program had been reduced to six, namely:

Army and Navy General Hospital, Hot Springs, Ark.
Fitzsimons General Hospital, Denver, Colo.
Letterman General Hospital, San Francisco, Calif.
Fort Sam Houston Station Hospital, Tex.
Walter Reed General Hospital, Washington, D.C.
William Beaumont General Hospital, El Paso, Tex.

In the years following World War I, the Army focused its attention on stabilizing and standardizing physical therapy procedures. The gradual cutback in the number of physical therapists resulted in a careful screening of patients to exclude those for whom this treatment had been prescribed merely as a placebo.

TABLE 2—*Physical therapists and physical therapy facilities in the Medical Department, U.S. Army, July 1919 to June 1920*

Category	1919						1920					
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Physical therapists	558	516	464	433	426	401	379	322	276	241	212	175
Hospitals with physical therapy facilities	28	23	16	14	13	13	13	13	12	12	12	11

Source: Report of The Surgeon General, U.S. Army. Washington: Government Printing Office, 1920, p. 283.

During World War I, there were no medical officers assigned at the hospital level with any formal physical therapy training, because such training was not available in this country. The Army recognized this need, and in 1922, Maj. James B. Montgomery, MC, was directed to take instruction with Doctor Granger, who by that time had returned to Boston. Upon completion of this training, Major Montgomery was assigned to Walter Reed General Hospital to reorganize the physical therapy service and to act as an adviser to The Surgeon General on matters pertaining to this specialty. Maj. (later Brig. Gen.) Harry D. Offutt, MC, who succeeded him, also had physical therapy training. So far as is known, these are the only Army medical officers so trained during the early post-World War I years.[19]

In contrast to some of the hyperenthusiasts who preceded him, Major Montgomery was ultraconservative. Through his efforts close cooperation and liaison with the other hospital services were soon established. Ward surgeons no longer prescribed physical therapy procedures, instead they stated the desired objectives and relied on Major Montgomery's judgment to accomplish treatment. In other Army general hospitals, physical therapy activities were nominally under the direction of the chief of the medical, surgical, or X-ray service.

[19] During World War II, Col. Harry D. Offutt, MC, was assigned to the Surgeon General's Office as Chief, Hospitalization Division, where he was extremely helpful in advising on the many administrative problems concerned with the expansion of the physical therapy program and in promoting military status for physical therapists and dietitians.

In order to effect coordinated patient care, Major Montgomery recommended that physical therapy and occupational therapy be under the same medical direction and that the basic medical education of these women be the same. As a result, the liaison between these two groups was improved. Subsequently, a coordinated treatment program was developed which in turn resulted in improved patient care.

In general, the status of physical therapy in Army hospitals was in direct proportion not only to the interest and ability of the medical officer in charge, but also to the professional and administrative abilities of the chief physical therapist. With frequent changes in medical supervision, the continuity of the program came to be more and more the responsibility of the chief physical therapist. While there were no directives delineating her duties, it came to be understood that she was responsible for the supervision of patient physical therapy care, training of her staff, and liaison with other hospital services.

All vacancies in the position of physical therapist in Army hospitals were filled by graduates of the training course at Walter Reed General Hospital from 1922 until 1938. This was a great advantage. Familiarization with standardized techniques and Army procedures greatly facilitated their adjustment in new assignments and afforded continuity to all the physical therapy programs.

The permanent inclusion of physical therapy in the Medical Department hospitalization program was assured when physical therapy clinics were incorporated in all of the Army hospitals constructed during the twenties and thirties. On 1 July 1921, William Beaumont General Hospital received its first patients in a permanent two-story building replacing the temporary cantonment-type structure built during World War I. The new physical therapy clinic was well equipped with the most modern apparatus available at that time. In July 1930, the physical therapy clinic at Walter Reed General Hospital was moved from a temporary type of building to the ground floor of the so-called clinic building. The new physical therapy clinic, equipped with all the latest types of apparatus and regarded as a model department, was visited by many Army medical officers and civilian physicians as well as medical students in the Metropolitan Washington area. It also contained a large lecture and laboratory room for instructional purposes.

The Army and Navy General Hospital, established in 1886, was replaced in 1933 by a permanent-type structure. As did the old hospital before it, the new hospital utilized the therapeutic properties of the mineral hot springs in that area. The hydrotherapy section included the first therapeutic pool in the Army. It was patterned after the one at Warm Springs, Ga., and was equipped with weighted tables and chairs and an overhead carriage for conveying a chair or litter into the pool. Physical therapists used the pool to great advantage in giving underwater exercise to patients with arthritis.

The Fort Sam Houston Station Hospital was replaced by a modern permanent building in 1938 and was redesignated Brooke General Hos-

pital in 1942. This new building included a large physical therapy clinic, well equipped with all the latest types of electrical and manual exercise apparatus and a modern hydrotherapy section.

PERSONNEL

From 1 July 1919 to 1 July 1920, inclusive, the number of physical therapists serving with the Medical Department decreased from 558 to 175. At Walter Reed General Hospital, the number of physical therapists decreased from 62 on 1 October 1919 to 24 on 1 June 1920. This was typical of the rate of demobilization of physical therapists throughout the Army.

Upon discharge from the Army, many physical therapists were employed by the U.S. Public Health Service, and after 1921 by the Veterans' Bureau (now Veterans' Administration). Others were employed in industrial accident clinics or in schools for crippled children, both new ventures for physical therapists in the United States. Some were employed by orthopedic surgeons who had come to realize the value of physical therapy during their wartime experience.

For several years, physical therapists were assigned only in general hospitals, and then in limited numbers except at Walter Reed General Hospital where the physical therapy training course was conducted. It was not until the mid-thirties that commanding officers in a few station hospitals in the United States requested the assignment of a physical therapist. In the absence of directives, each department functioned in accordance with local hospital regulations. From 1920 to the late thirties, there was a constant turnover of physical therapists in Army hospitals. The rapid expansion of physical therapy in civilian and other federal hospitals frequently lured experienced and well-trained Army physical therapists to more remunerative positions.

In 1926, a survey made by Miss Emma E. Vogel, Supervisor, Physical Therapists, Walter Reed General Hospital, revealed that the salaries of Army physical therapists were not consistent with current standards. As a result of this study, The Surgeon General recommended that an improved salary scale be established.[20] Because of lack of funds it was never implemented. At this time, The Surgeon General directed that the use of the term "reconstruction aide" be discontinued in favor of the term "physiotherapy aide."

In 1931, Miss Vogel conducted another survey which revealed that there had been no material improvement in the salary or status of physical therapists since World War I.[21] Since it had been demonstrated that physical therapy was essential to the Army, it was Miss Vogel's contention that salaries should be sufficient to warrant the re-

[20] Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army, pp. 15–16.

[21] Letter, Emma E. Vogel, Supervisor, Physiotherapy Aides, Walter Reed General Hospital, to The Surgeon General, through channels, 9 Feb. 1931, subject: Request for Increased Salary and Recognition for Physiotherapy Aides.

tention of experienced personnel to carry on this program. Her report to The Surgeon General contained the following recommendations:

1. Establishment of an improved salary scale commensurate with years of service and responsibilities.

2. Authorization of advanced study on a detached service basis, the same as enjoyed by members of the Army Nurse Corps.

3. Establishment of a Medical Auxiliary Corps to consist of dietitians, physical therapists, and occupational therapists with the same salary, rights, and privileges as the Army Nurse Corps.

4. Establishment of a Reserve Corps to consist of graduates of the training courses in these three specialties at Walter Reed General Hospital and former employees of the Medical Department in these categories. However, again because of the lack of funds, no action was taken.

From 1919 to 1939, physical therapists and other civilian employees experienced considerable uncertainty as to the security of their positions, because there was no regular appropriation of funds for their salaries. From 1919 to 1924, these salaries were paid from Medical and Hospital Department (Army) funds. Beginning in 1924, many salaries were paid from funds which were received by the Army for the hospitalization of patients by the Veterans' Administration. The salaries of physical therapists were the same as those of the dietitians. (See Appendix B, p. 595.)

In 1933, the provisions of the National Economy Act resulted in a reduction of funds due to the cutback in the number of veterans being hospitalized in Army hospitals for non-service-connected disabilities. Consequently, the physical therapy program was drastically curtailed in some hospitals and discontinued altogether in others. The sudden reduction from 15 to 3 physical therapists at Walter Reed General Hospital was typical of changes which occurred in other Army general hospitals. The physical therapy clinic at Walter Reed General Hospital would have closed its doors had it not been that the three remaining physical therapists were willing to serve at reduced salaries and that students graduating from the training course that year volunteered to remain on duty with no compensation other than quarters and subsistence. In the 1933 annual report of Letterman General Hospital, the physical therapists were commended for their high morale and cooperation during this critical period when they worked far beyond their normal capacity. In 1933, local hospital funds were again augmented when members of the Civilian Conservation Corps were admitted to Army hospitals. Physical therapists were re-employed at reduced salaries. This situation continued until February 1939 when physical therapists were placed under the competitive classified system of the Civil Service Commission.[22] This status assured salaries paid from appropriated funds but contributed little to relieve feelings of

[22] Executive Order No. 7916, 24 June 1938, subject: Extending the Competitive Classified Civil Service.

insecurity. These events, however, dramatically demonstrated the need for a permanent military status.

In August 1938, in addition to the 10 physical therapists assigned to Walter Reed General Hospital, there were 27 assigned in 15 Army hospitals outside the District of Columbia, as follows: [23]

Army and Navy General Hospital, Hot Springs, Ark	4
Fitzsimons General Hospital, Denver, Colo	6
Letterman General Hospital, San Francisco, Calif	3
Fort Bragg Station Hospital, N.C	1
Fort Jay Station Hospital, Governors Island, N.Y	1
Fort Leavenworth Station Hospital, Kans	1
Fort Riley Station Hospital, Kans	1
Fort Sam Houston Station Hospital, Tex	3
Fort Sill Station Hospital, Okla	1
Fort Francis E. Warren Station Hospital, Wyo	1
Schofield Barracks Station Hospital, T.H	1
U.S. Military Academy Station Hospital, West Point, N.Y	1
Sternberg General Hospital, Manila, Philippine Islands	1
Tripler General Hospital, T.H	1
William Beaumont General Hospital, El Paso, Tex	1
Total	27

This small group of physical therapists constituted the nucleus around which the World War II expansion program was developed. Those with administrative and teaching experience later became the directors of the World War II emergency physical therapy training courses.

TRAINING

The annual report of The Surgeon General to the Secretary of War in 1919 stated that in May of that year the total number of physical therapists on duty was 700. Economic pressures imposed with the termination of hostilities and the gradual reduction in the number of hospital patients resulted in a rapid decrease in the number of physical therapists employed.

By late 1921, the separation of physical therapists had been accelerated to such an extent that the Medical Department was faced with an acute shortage of this personnel. By this time, those who had served in the Medical Department during the war had become established in more remunerative positions and were not interested in returning to the Army. Since there were no basic physical therapy training courses in the United States at that time, Major Montgomery recommended that the Medical Department initiate its own training program. The plan was concurred in and the first postwar basic physical therapy training program was established at Walter Reed General Hospital in the fall of 1922.[24] This course was organized as a part

[23] Physiotherapy Aides on Duty at Army Hospitals, Outside the District of Columbia, 19 Aug. 1938.

[24] Letter, The Surgeon General to Commanding Officer, Walter Reed General Hospital, 16 Aug. 1922, subject: Establishment of a Course of Training for Physiotherapy Aides at Walter Reed General Hospital, with 5 indorsements thereto.



FIGURE 16—First graduating class, Army physical therapy course, 1923. (One student was absent.)

of the Medical Department Professional Services Schools at the Army Medical Center under the command of Brig. Gen. James D. Glennan. The course was directed by Major Montgomery who was assisted by Miss Vogel. Eleven students completed this course in February 1923 (fig. 16).

The first course of 4 months' duration was available to qualified applicants who had satisfactorily completed not less than 2 years in an accredited school of physical education.[25] At that time there were a few 2-year physical education courses although the majority were 3- and 4-year courses. Prior to acceptance of her appointment, each student agreed that if she were later appointed as an Army physical therapist she would serve for at least 1 year.

The curriculum included subjects which were taken at the Army School of Nursing also conducted at the Army Medical Center (table 3). Courses pertaining to physical therapy techniques were taught by physical therapists. It was first thought that courses in anatomy, physiology, and bandaging could be taken with student nurses, but after a trial, it was decided that these subjects were more valuable to the student if the subjects were presented from the physical therapy viewpoint. Generally speaking, the course consisted of theoretical and practical instruction, demonstrations, and supervised practical application of techniques in the treatment of patients.

[25] Prospectus of the Hospital Training Course in Physiotherapy for Aides, Army Medical Center, Walter Reed General Hospital, 1925.

TABLE 3—*Comparison of curriculums in the physical therapy courses, Walter Reed General Hospital, Washington, D.C., 1922–23 and 1938–39*

Curriculum	Four months, 1922–23 (Hours)	Twelve months, 1938–39 (Hours)
Anatomy	125	220
Bacteriology	.....	14
Bandaging	15	25
Clinical practice	176	500
Communicable diseases	[1]10	.....
Current medical events	.....	50
Dental diseases	[1]10	.....
Dermatology	[1]5	5
Diet in disease	[1]5	.....
Diseases of the eye	[1]10	.....
Diseases of the ear, nose, and throat	[1]10	.....
Electrotherapy and electrophysics	65	90
Elements of hospital administration	.....	3
Fever therapy	.....	2
General medicine	[1]10	15
General surgery	[1]20	19
Hospital ethics	.....	5
Human metabolism	.....	10
Hydrotherapy	12	30
Massage	90	80
Materia medica	[1]20	.....
Military drill	[1]30	.....
Nervous and mental diseases	.....	10
Occupational therapy	.....	13
Oral hygiene	.....	1
Orthopedic surgery	[1]8	.....
Pathology	.....	6
Peripheral vascular therapy	.....	15
Phototherapy	6	30
Physiology	.....	15
Physiotherapy in orthopedics	.....	40
Public sanitation	[1]10	.....
Roentgenology	.....	12
Therapeutic exercise	40	65
Venereal diseases	[1]5	.....
Total hours	682	1,275

[1] Courses in the Army School of Nursing, Walter Reed General Hospital, Washington, D.C.

NOTE.—This course was supplemented by periods of observation at the Children's Hospital and the Crippled Children's School, both in Washington, D.C.

Source: Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army.

The graduation address for the first course was given by Colonel Granger.[26] In this talk, he paid high tribute to the World War I physical therapists:

> Their loyalty, their enthusiasm, their painstaking care, their professional ability, and their personality, not only were mighty factors in raising the morale and hastening the cure of the wounded in the hospitals, but also in providing to the too often skeptical medical officer the value of scientifically applied physical

[26] Graduation Address, Physical Therapy Course, Walter Reed General Hospital, by Lt. Col. Frank B. Granger, MC, 7 Feb. 1923.

> measures. All honor to the 815 Reconstruction Aides in physical therapy, picked from among several thousand applicants. * * * 95% of the aides were either graduates of normal schools of physical education or were college graduates who had majored in physical education. These aides all received at least 6 weeks of intensive training in physical therapy before being accepted by the Army * * *. You are heiresses to this high heritage, and I give it to you strictly in charge never to let any act of yours sully it in the slightest degree.

That the training program had impact on the care of patients and on the conduct of the physical therapy department itself is borne out by The Surgeon General's Annual Report, 1924, which contains the following comments submitted by the Commanding General, Army Medical Center: "The instruction and training of the junior aides under the direction of the Supervisor of Physiotherapy Aides has been well blended into the functioning of this department, and in addition the stimulative effect of this training has been of immense value to the department in maintaining efficient and cooperative work."

The length of the course and the prerequisites for appointment proved inadequate for producing the type of professional women desired by the Army. The course was lengthened to 6 months in 1924, 8 months in 1930, 9 months in 1932, and to 12 months in 1934, and the requisite education was increased from 2 years to completion of 4 years of college, with emphasis in physical education. A comparison of the curriculums of the 4- and 12-month courses is shown in table 3. This course was given annually at Walter Reed General Hospital beginning in 1922, with the exception of the year 1933–34 when this training program and other Army hospital activities were suspended because of provisions of the National Economy Act (chart 1).

The length of the physical therapy course was decreased from 12 months in 1938 to 10 months in 1939 and to 9 months in 1940. These reductions were made possible through the gradual elimination of courses which, while interesting, were nevertheless believed not to be essential to the basic training of physical therapists.

In 1928, when the American Physiotherapy Association assumed the function of a professional accrediting agency, the Army physical therapy training course was among the first to be accredited.[27] In 1936, when the Council on Medical Education and Hospitals of the American Medical Association became the official accrediting body for such courses, this course was approved [28] and continued to be approved.

In the early thirties, short courses were conducted to orient medical officers and students in the Army School of Nursing to physical therapy.

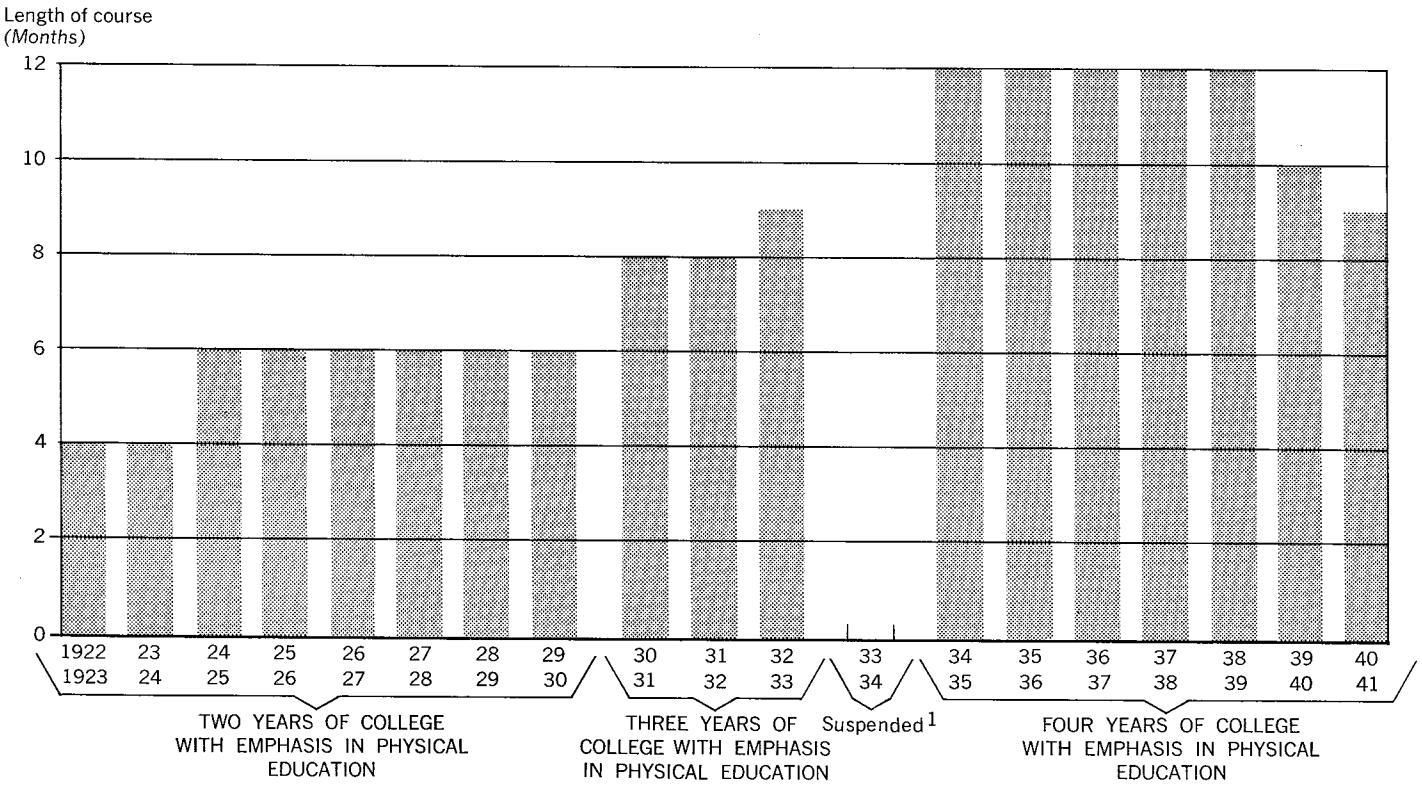
PROFESSIONAL ACTIVITIES

There was a marked change in the emphasis in Army physical therapy from 1920 to 1940, inclusive. The general trend was away from the "bake and massage" techniques which had been almost

[27] Approved School for Physical Therapy Technicians. J.A.M.A. 114: 1262–1263, 30 Mar. 1940.

[28] Survey of Schools for Physical Therapy Technicians. J.A.M.A. 107: 676–679, 29 Aug. 1936.

CHART 1—*Physical therapy training courses conducted by the Army at Walter Reed General Hospital, Washington, D.C., 1922-41*



[1] Course suspended because of provisions of the National Economy Act.

routinely included in patient prescriptions during World War I, to a program directed toward the patient's active participation in his rehabilitation. The emphasis shifted from treatment of an injured extremity to treatment of the patient as a whole. For example, exercise for orthopedic patients was directed not only to the injured extremity but also to the maintenance of good posture and normal muscle tone and range of motion in the uninjured extremities. To some extent, it may be said that this new concept of exercise which began in the twenties was the forerunner of what was to be known as physical reconditioning during World War II. There was also more emphasis on the human relations aspect and the patient-physical therapist relationship in the patient's recovery. A clean, cheery, well-organized physical therapy clinic staffed by well-groomed and capable physical therapists was found to be a strong morale factor for both patients and personnel.

Space does not permit a discussion of the many changes made between 1920 and 1940; a few, however, will be mentioned.

Treatment by use of the static machine and Bergonie chair, which had been administered largely for psychological effect during World War I, was discontinued altogether in the late twenties (fig. 17). During this same period, diathermy was used extensively in many general hospitals in the treatment of patients with pneumonia. It was believed that this treatment produced a stimulating effect on the body's normal defensive mechanism and gave symptomatic relief. These treatments were normally of 30 minutes' duration, administered every 4 hours until midnight.

During the late thirties, hyperpyrexia (induction of artificial fever by physical measures) in selected cases was initiated. Although the apparatus was not always located in the physical therapy clinic, the responsibility of administering this treatment was usually delegated to the medical director of physical therapy (assisted by specially trained nurses). With the development of the sulfonamide and penicillin compounds, the need for artificial fever decreased. It was still used for some years, however, in treatment of eye conditions.

Another innovation during the thirties was the use of the suction pressure apparatus, sometimes called the "Glass Boots." The equipment consisted of two plastic boots attached to a motor-driven ap paratus which produced an alternating negative and positive pressure within each boot. This treatment proved beneficial in the treatment of selected patients with peripheral and vascular disturbances (fig. 18).

At Fitzsimons General Hospital, irradiation from alpine and carbon arc lamps was used for the general tonic effect for tuberculous patients not only to supplement heliotherapy on cloudy days, but also to treat those patients who were unable to tolerate heliotherapy exposures for various reasons. Carefully supervised and graduated exercises for tuberculous patients initiated at that hospital in the early twenties were continued throughout the years. In the thirties, ultraviolet ir-

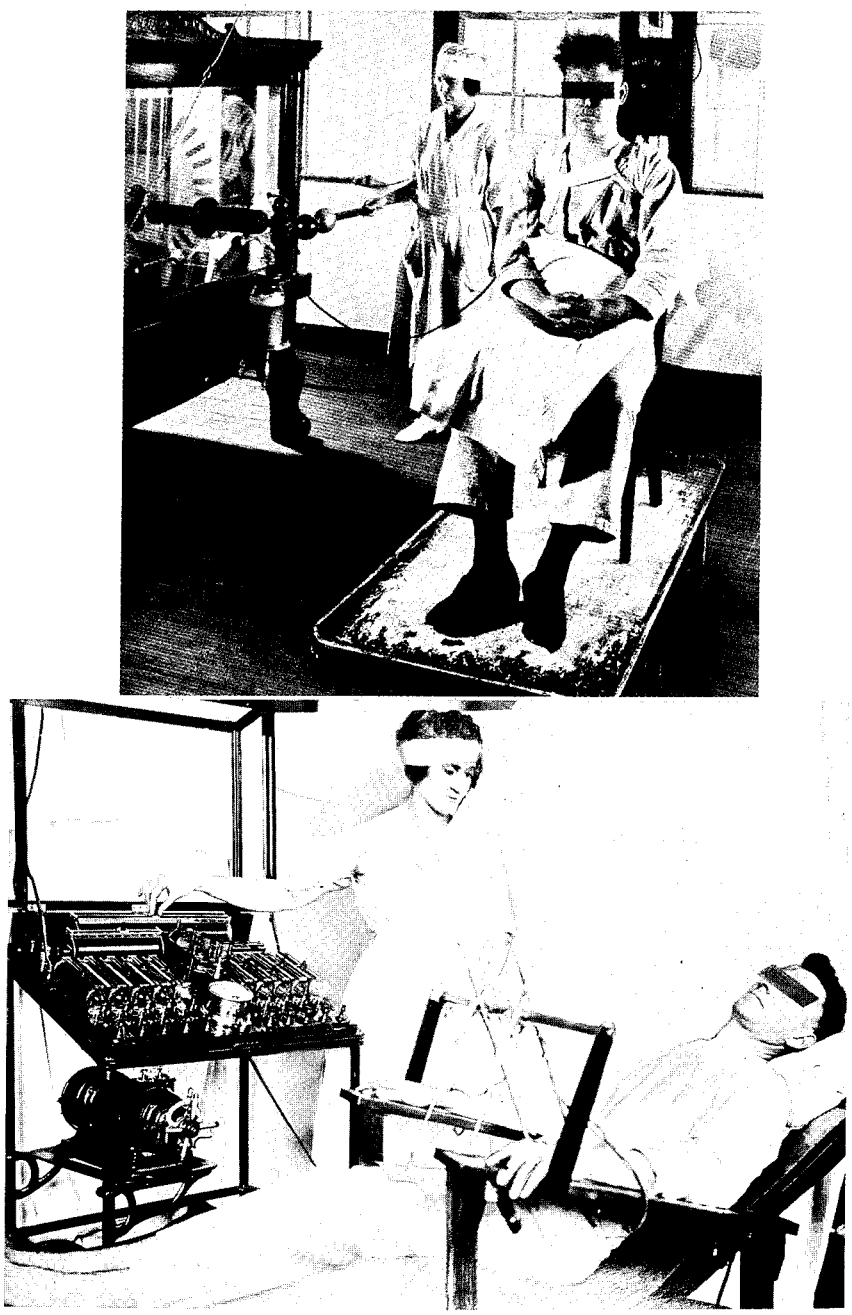


FIGURE 17—Electric treatment in physical therapy. (Top) Static condenser discharge. Metal electrode placed over cervical spine and patient charging and discharging in synchronism with the Leyden jars. (Bottom) Bergonie chair used for general electric treatment. (U.S. Army photograph.)

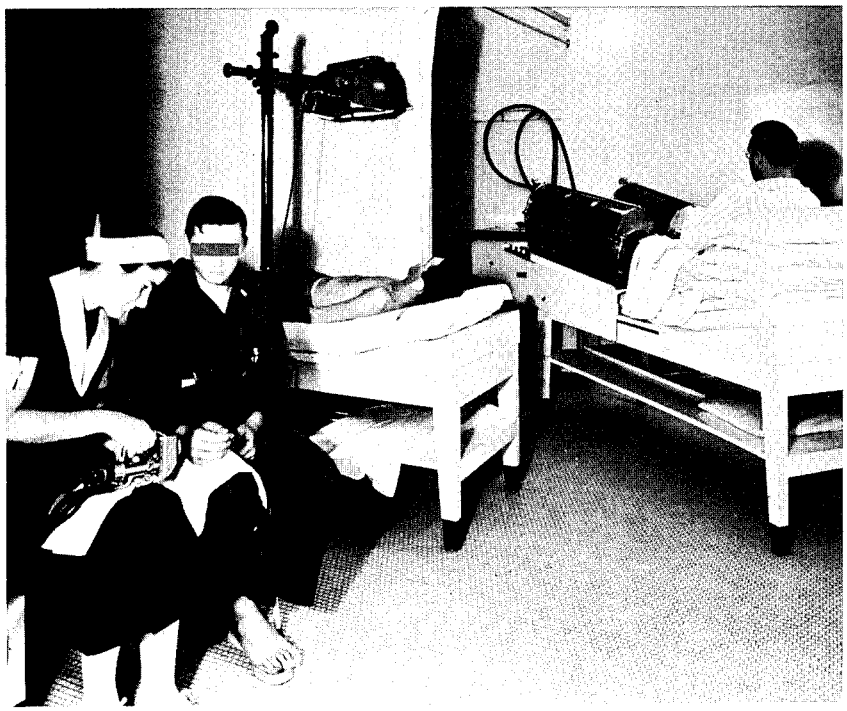


FIGURE 18—Modalities used in the thirties. Water-cooled ultraviolet lamp (left), air-cooled vapor lamp (center), and suction pressure apparatus (right). (U.S. Army photograph.)

radiation of open thoracoplasties was found to be beneficial in the healing process.

At Walter Reed and Letterman General Hospitals, hydrotherapy, systematic setting-up exercises, and progressive Goldthwait exercises sometimes supplemented by dancing and games were introduced in the treatment of neuropsychiatric patients.

In the late thirties, the physical therapy clinics at several general hospitals cooperated with the National Bureau of Standards and the U.S. Army Signal Corps in carrying out a series of tests on the first short-wave apparatus. Patients who volunteered for these tests reported that the heat generated by this apparatus expedited relief from pain and was more soothing than that generated with the conventional diathermy apparatus. Since the current produced by this machine seriously interfered with radio transmission and reception, it was recommended that procurement of this apparatus be delayed until changes in its construction had been accomplished.

EXPANSION PROBLEMS

When the President proclaimed a limited national emergency on 8 September 1939, the Medical Department took stock of its resources and found that physical therapy was faced with three immediate major problems: The procurement of professional personnel, both medical officers and physical therapists; equipment; and floor plans for physical therapy clinics.

Experience during the years clearly demonstrated that the medical director of the physical therapy service should be specially trained in this field. Shortly after the President's proclamation, plans were formulated in the Surgeon General's Office providing opportunities for interested medical officers to pursue 3 months of training in this specialty. Other interested officers were given on-the-job training by these specially trained officers. This program continued for several years and eventually the physical therapy clinics in all Army general hospitals in the United States were under the direction of officers who had completed this training.[29] However, the number of officers so trained was not sufficient to staff physical therapy clinics in oversea hospitals and in station hospitals in this country.

The procurement of a sufficient number of physical therapists in the event of war presented an even graver problem. In 1940, there were only 15 physical therapy courses approved by the Council on Medical Education and Hospitals of the American Medical Association, including the course conducted at Walter Reed General Hospital. Since the number of physical therapists in the entire country was far short of meeting both civilian and anticipated military needs a markedly accelerated Army physical therapy training program was mandatory (ch. VI, pp. 137–182).

On 6 March 1939, The Surgeon General communicated with the Director of the American National Red Cross, Washington, D.C., outlining Medical Department needs in the event of mobilization. In a series of subsequent conferences,[30] it was agreed that the Red Cross would enroll physical therapists who would constitute an immediately available reserve to meet anticipated requirements during the first 4 months following mobilization. This plan was approved, and in early 1940, The Surgeon General requested that the Red Cross initiate this enrollment as soon as practicable. Reporting on the progress of this enrollment, the Red Cross advised on 30 June that 1,200 announcements had been mailed to qualified physical therapists, 62 had completed applications, and 14 had enrolled.[31] This program was handicapped because physical therapists were required to take the civil service examination after enrollment with the Red Cross. Since these

[29] War Department Technical Manual 12–406, 30 Dec. 1943.
[30] Report of Conference Between Representatives of the American National Red Cross and The Surgeon General of the Army, 10 Apr. 1939.
[31] Report, American [National] Red Cross, subject: Enrollment of Medical Technologists, 30 June 1940.

individuals were enrolling with the Red Cross not to seek permanent employment with the Army, but rather to make themselves available in the event of a national emergency, the Civil Service Commission waived its requirement of certification. Although this program was not effective in procuring physical therapists, it did serve a useful purpose, in that it publicized the acute shortage of this personnel available for military service.

Surveying its stock of equipment, the Medical Department became acutely aware that there was no reserve of physical therapy equipment. Preparation of new equipment lists begun in January 1939 was far from complete.[32] The Medical Department Board and the Surgeon General's Office realized the need to bring the physical therapy equipment list up to date and requested the assistance of Capt. (later Brig. Gen., USAF) Benjamin A. Strickland, Jr., MC, Director of Physical Therapy, Walter Reed General Hospital. The procurement of equipment in an already tightening civilian market presented many problems. A few fly-by-night manufacturing concerns began to produce physical therapy equipment, which had to be carefully screened and evaluated because of the inferior quality of their products. In this evaluation, the Medical Department Board was assisted by the Council on Physical Therapy of the American Medical Association and the directors of physical therapy departments in Army general hospitals.

[32] Smith, Clarence McKittrick: The Medical Department: Hospitalization and Evacuation, Zone of Interior. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1956, p. 6.

CHAPTER IV

Occupational Therapists Before World War II (1917–40)[1]

Lieutenant Colonel Myra L. McDaniel, USA (Ret.)

Section I. World War I

The use of activity in the treatment of patients had been a part of civilian hospital programs long before World War I. Remedial work had been used in the United States since the early 1800's in treating mental patients and since the early 1900's in reeducating handicapped persons.[2] During this period, the philosophy regarding the industrial cripple had changed both in the United States and abroad. Formerly, the crippled and disabled had been supported by charity or philanthropy. Gradually, it was recognized that it would be wiser to try to equip these people with skills which would enable them to become both socially and industrially effective. This new concept of reeducation became the foundation of the Medical Department reconstruction programs for the wounded and mentally ill soldiers of World War I.

Each country engaged in the war had evolved its own reconstruction program aimed at returning the disabled soldier to duty, or if that was not possible, at preparing him to earn a living. In the spring of 1917, under the direction of Maj. Gen. William Crawford Gorgas, The Surgeon General, neuropsychiatrists, and orthopedic surgeons visited England, France, and Canada to study the reconstruction programs in those countries. They learned about many reconstruction problems, one of the most formidable to the neuropsychiatrists being the diagnosis and treatment of war neuroses.

On 6 April 1917, the United States declared war against Germany. The time to develop an Army reconstruction program had come and existing facilities were far from adequate. It was decided that a central division of reconstruction should be created, and special reconstruction hospitals should be designated in which the work of all departments could be correlated. Because of the emphasis placed upon occupation in the reconstruction programs of other countries, and because of the effectiveness of patient activity in civilian institutions in this country,

[1] Unless otherwise indicated, primary sources of information for this chapter are: (1) The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1927, vol. XIII. (2) The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1929, vol. X.

[2] Letter, Maj. Thomas W. Salmon, MRC, Division of Neurology and Psychiatry, Office of the Surgeon General, to Maj. C. L. Furbush, Executive Officer, Office of the Surgeon General, 5 Nov. 1917, subject: Training of Occupational Teachers for Reconstruction Hospital.

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occupational therapy became a basic part of the reconstruction program.

ORGANIZATION

On 22 August 1917, in the Surgeon General's Office, the Division of Special Hospitals and Physical Reconstruction was formed to coordinate the treatment and training of sick and wounded soldiers here and abroad and to secure employment for them when they were discharged. Maj. (later Brig. Gen.) Edgar King, MC, was assigned as chief of the division.[3]

The initial program, particularly the plans for placement of the retrained patients, proved to be too elaborate and was disapproved by the War Department. At this point, The Surgeon General of the Army called a conference of government and civilian organizations interested in reconstruction and rehabilitation problems. As a result of this conference, the separate functions of military, civilian, and government agencies were outlined. The Surgeons General of the Army and Navy were to be responsible for reconstruction and rehabilitation until the soldier or sailor was ready for discharge. Then civilian or other government agencies would continue the program. The War Department approved this arrangement on 31 July 1918.

In May 1918, the functions of the division were more clearly defined and the name was changed to the Division of Physical Reconstruction. Its intent was, through the use of mental and manual work, to restore to complete or maximum possible function, any military person disabled in line of duty. Every military person was entitled to this service prior to his discharge.

The first Supervisor of Reconstruction Aides in Occupational Therapy and Physical Therapy was Miss Marguerite Sanderson who had worked for several years with the well-known orthopedic surgeon, Dr. (later Col.) Joel E. Goldthwait of Boston, Mass. Miss Sanderson was appointed in January 1918 and assigned to the Division of Orthopedic Surgery, Surgeon General's Office. Her primary duty apparently was to recruit and arrange for training of personnel for these programs. Records indicate that medical officers in the Divisions of Orthopedic Surgery and Neurology and Psychiatry planned the scope of the treatment programs and detailed the functions of the aides. In May 1918, Miss Sanderson and the reconstruction aide program were tranferred to the Division of Physical Reconstruction.

The classification "reconstruction aide in occupational therapy" included four types of personnel: teachers of crafts, teachers of academic

[3] Assigned to the Division of Special Hospitals and Physical Reconstruction were representatives of the division of head surgery and the division of neuropsychiatry and psychology; a surgical adviser, technical advisers in the areas of commercial, professional, industrial, and agricultural education; an officer to abstract literature on reconstruction and reeducation; an officer concerned with educational propaganda; and three architects. (See footnote 1(1), p. 69.)

subjects, medical social workers, and office workers.[4] Inasmuch as this chapter records the history of those who were primarily concerned with craft activity, their subsequent title "occupational therapy aide" will be used throughout the chapter.

Early in 1918, the reconstruction program began operation. Official specifications for the work of occupational therapy aides, as drawn up by the Division of Physical Reconstruction and approved by The Surgeon General, 5 January 1918, required that it be a purely medical function for the therapeutic benefit of activity, and prescribed in early stages of convalescence.

Instructions published by the Surgeon General's Office in March 1918 classified all therapeutic work except physical therapy as occupational therapy and divided it into two types: ward occupations or shop and farmwork. In either case, medical officers selected the patients who were to participate. These instructions also provided that reconstruction hospitals were to have an educational officer in charge of assigning aides and patients within the program. Occupational therapy aides were generally assigned to work with patients on the wards. The trade and agricultural occupations were taught by male instructors who also supervised the curative workshop activities.

Qualifications

The task of selecting people to serve as occupational therapy aides was difficult, probably because no standards of training or education existed. The criteria for selection as finally determined were similar, insofar as age and physical and educational qualification, to those of the Army Nurse Corps and were evidently determined with an eye toward future equality of status and pay.

From records and correspondence we learn that high qualities of character and skill in handicrafts were the chief early requirements. Many of those selected early in the program had extensive art training and their knowledge of anatomy proved to be an asset to them, particularly when orthopedic surgeons discussed the disabilities of their patients and the bone and muscle involvements which resulted. However, the need for aides with varying qualifications was anticipated: "* * * it seems very probable that we will have to have two classes of aides, one * * * to perform the work as now outlined, and the second * * * more qualified medically * * * to handle * * * the nervous and mental cases." [5]

The earliest recorded list of qualifications stated:[6]

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[4] Letter, Maj. M. E. Haggerty, SC, Division of Reconstruction, Office of The Surgeon General, to Miss Marion C. Prentice, Director, Illinois School for Nurses, Social Service Department, Chicago, Ill., 18 Jan. 1919.

[5] Letter, Maj. H. R. Hayes, SC, Division of Orthopedic Surgery, Office of The Surgeon General, to Mrs. Martha Wadsworth, Avon, N.Y., 10 Mar. 1918.

[6] Information Circular B–524, signed by Col. Frank Billings, MC, Office of The Surgeon General.

> The qualifications * * * are in the main those of good teachers: knowledge and skill in the * * * occupation to be taught, attractive and forceful personality, teaching ability, sympathy, tact, judgment, [and] industry.

Not until June 1918 was hospital experience made a required part of preliminary training.[7]

Other prerequisites were: U.S. citizenship, 25–40 years of age, 60–70 inches in height, 100–195 pounds in weight, and ability to pass the physical examination required of members of the Army Nurse Corps. Applications were accepted from both single and married women. The latter group were to be assigned primarily in the United States.

Even though emergency courses were established for the training of occupational therapy aides, attendance at these courses was not required if an applicant was either a trained craftworker or a graduate of a school of industrial arts and crafts.[8] By August 1918, the equivalent of graduation from a secondary school was required and preference was given to normal school and college graduates with comparable technical training.

Selection, Appointment, and Assignment

In addition to the graduates of the training courses, the Army had three major sources of applicants for occupational therapy aide positions: volunteers recruited by private organizations for work with blinded soldiers in England and France, the National Society for the Promotion of Occupational Therapy, and the American National Red Cross.

Applicants were selected as occupational therapy aides by the Surgeon General's Office.[9] Letters of appointment, equivalent to contracts of employment, were given at the time the occupational therapy aides took their oaths of office; these were explicit concerning salary, maintenance, and provision for transportation and per diem while traveling. Appointments were for the duration of the war and for any further time that The Surgeon General thought their services were required.

Aides were assigned to specific hospitals or sent overseas in either a hospital unit or in a unit of aides for reassignment. There were two classes of occupational therapy aides; they worked with patients with orthopedic conditions or with war neuroses. Early in the program there was no established patient/therapist ratio, but in July 1918, tentative

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[7] Letter, Marguerite Sanderson, Supervisor, Reconstruction Aides, Office of The Surgeon General, to Professor T. W. Burckhalter, University of Pittsburgh, Pittsburgh, Pa., 12 June 1918.

[8] Letter, Marguerite Sanderson, Supervisor, Reconstruction Aides, Office of The Surgeon General, to Mrs. Anne Franklin, The Delineator, Butterick Building, New York, N.Y., 21 May 1918.

[9] In many instances early in the program's inception, candidates were screened by Mrs. Martha Wadsworth, Avon, N.Y., who had previous experience in obtaining volunteers from Junior League and other sources for work overseas with blinded soldiers. It was believed that screening by one person would assure high standards. She held personal interviews with candidates and checked personal and character references before recommending any applicant to the Surgeon General's Office for appointment. Mrs. Wadsworth functioned officially as a member of an advisory committee of the Division of Orthopedic Surgery, Surgeon General's Office.



FIGURE 19—Occupational therapy ward and workshop activities, 1918–20. (Top) Ward patients working with occupational therapist on the porch, Walter Reed General Hospital, Washington, D.C. (Courtesy of Harris & Ewing.) (Bottom) Ambulatory patients in woodworking and basketweaving room, Fitzsimons General Hospital, Denver, Colo.

approval was given the ratio of 2 occupational therapy aides for each 50 patients.[10]

Duties

By May 1918, it had been clarified that the function of occupational therapy aides was to teach crafts on the wards to patients who had impaired motor function or who were neurotic or mentally disoriented. Gradually, the occupational therapy aides also assumed responsibility for curative workshop activities in the treatment of ambulatory patients (fig. 19), taking over this function from enlisted personnel and male civilian instructors who had been concerned with vocational training but not medical treatment.[11] The Army emphasis on vocational training began to slacken in June 1919 when an amendment to the Smith-Hughes Act of 1917 placed the entire responsibility (selection, training, and payment) for the rehabilitation of disabled soldiers upon the Federal Board for Vocational Education.

Classification and Salaries

Occupational therapy personnel were classified in two grades: aides and head aides. The beginning salary for aides was $50 per month, and $65 the salary for head aides. Meals, lodging, and laundry were furnished, but when lodging and meals were not available, an additional $62.50 per month was allowed. When serving overseas, they received an additional $10 per month. Travel allowances covered transportation costs and $4 per diem.

Uniforms

The uniforms worn by occupational therapy aides both in the United States and overseas were similar to those worn by the physical therapists except that white bib aprons were authorized for the occupational therapy aides as a part of their hospital uniforms.

Basic clothing items, with the exception of the street uniforms, were supplied by the Red Cross without cost to each aide going overseas. Among these items were a raincoat, rubber boots, woolen underwear, outing flannel pajamas, woolen stockings, cotton stockings, woolen tights, one black and two tan pairs of shoes, and three hospital uniforms. The street uniform was purchased at cost through the Red Cross.[12]

TRAINING

In October 1917, Dr. Franklin Martin of the Council for National

[10] Letter, Col. Frank Billings, MC, Division of Reconstruction, to The Surgeon General, 2 July 1918, subject: The Assignment of Reconstruction Aides in Occupational Therapy and Physio-therapy to General Hospitals Functioning in Physical Reconstruction.

[11] The ratio of occupational therapy aides to workshop instructors at Walter Reed General Hospital changed from 39 aides to 6 workshop instructors in 1923 to 16 aides to 1 workshop instructor in 1932.

[12] Form C–428, Instructions for Reconstruction Aides, Overseas Service, Office of The Surgeon General.

Defense wrote to William Rush Dunton, Jr., M.D., president of the National Society for the Promotion of Occupational Therapy, requesting information on colleges or schools giving courses of instruction in occupational therapy.[13] Doctor Dunton replied that he knew of only two colleges (Teachers College, Columbia University, New York, N.Y., and Simmons College, Boston, Mass.) which were offering these, but he believed there were a number of courses being given in institutions throughout the country. On 26 November 1917, Dr. Dunton wrote to 54 hospitals and schools to gather further information. His first question was, "How much time in your nurses' training course is given to occupational therapy?" Of the 34 replies received (29 hospitals, 1 course conducted by the Red Cross, and 4 schools), 16 stated that no course in occupational therapy was offered and the remainder gave information on courses which ranged from 3 to 48 hours.

The Surgeon General's Office, however, was to emphasize courses specifically for occupational therapy aides and divorce this training from nurses' training programs. In January 1918, a basic outline was proposed by the Surgeon General's Office for guidance of any organization which wished to establish emergency training programs.

Outline of basic 10-week course, January 1918:[1]	*Hours*
Weaving	49
Wood carving	49
Woodworking	30
Basketry	30
Pasteboard construction and elementary bookbinding	30
Leatherworking	30
Incidentals (rugmaking, modeling, netting, knitting or crocheting, stenciling, and beadwork)	43
Design	49
Total	310
Hospital routine	7
Invalid teaching	26
Practice work	42
Total	75
Grand total	385

[1] Letter, Mrs. Martha Wadsworth, Avon, N.Y., to Maj. Henry R. Hayes, SC, Division of Orthopedic Surgery, Office of The Surgeon General, 2 Feb. 1918, with enclosure, subject: Suggestions for School Course for Occupational Aides Based on Tentative Outline Made at Conference, January 28th, 1918. Early in 1918, Mrs. Wadsworth had been designated by the Surgeon General's Office to screen all candidates for appointments as occupational therapy aides. As a representative of the Surgeon General's Office, she was also consulted on curriculum content.

It soon became apparent that knowledge of crafts would have to be supplemented by medical lectures and hospital practice, and in September 1918, a more complete course was proposed.

Outline of revised course, 12–16 weeks, September 1918:[1]	*Hours*
Handcrafts:	
Weaving	39

[13] These courses were not called occupational therapy courses, but had names such as invalid occupations, occupation treatment for nurses, or bedside occupations.

Chair caning or rush seating	12
Woodworking	45
Basketry	36
Bookbinding	15
Block printing	6
Metal (tin and copper work)	24
Cordworking	12
Rugmaking	9
Modeling	15
Design	51
Total	264
Lectures:	
History, principles, and purpose of occupational therapy	3
Principal methods of teaching	9
Elementary applied psychology	12
Special problems of the handicapped	11
Disorders of central nervous system	5
Maladjustments	1
Kinesiology	5
Hospital routine etiquette	2
Conferences and discussion	16
Total	64
Hospital practice	264
Total	592

[1] Letter, Susan C. Johnson, Director, Training Course for Teachers of Occupational Therapy, Columbia University, New York, N.Y., to Dean James E. Russell, Education Department, Division of Reconstruction, Office of The Surgeon General, 30 Sept. 1919.

Several emergency training programs were established early in 1918 under certification of the Surgeon General's Office.[14] These included the Boston School of Occupational Therapy, Boston, Mass. (Mrs. Joel E. Goldthwait, Chairman), Training Course for Teachers of Occupational Therapy, Teachers College, Columbia University (Miss Susan C. Johnson, Director), and War Services Classes, New York, N.Y. (Mrs. Howard Mansfield, Chairman). By June 1918, certification was dropped because the estimated number of occupational therapy aides needed was modified from 1,000 to 300.

The qualifications for admission to an occupational therapy course in 1918 were quite general: at least 23 years of age, U.S. (or allied country) citizenship, a suitable personality, some artistic or mechanical skill, and willingness to serve full time during the war emergency.

The courses conducted in civilian institutions varied in length from an 8 weeks' emergency program, for those already proficient in some craft, to an 8 months' program.[15] Credit was sometimes given for previous medical or craft experience, and in some instances, students, on their own initiative, stayed in the hospital practice phase beyond the required time.

[14] Prospectus, Boston School of Occupational Therapy, Boston, Mass., 1918.
[15] Prospectus, Philadelphia School of Occupational Therapy, Philadelphia, Pa., 1918.

PROGRAMS IN ARMY HOSPITALS IN THE UNITED STATES

Occupational therapy in the Medical Department began as a very limited and experimental program on the orthopedic wards at Walter Reed General Hospital, Washington, D.C., in February 1918. Col. Elliot G. Brackett, MC, Chief, Division of Orthopedic Surgery, Surgeon General's Office, initiated the program with three occupational therapy aides under the direction of Maj. Thomas M. Foley, MC, Chief, Orthopedic Service, Walter Reed General Hospital. At that time, no official funds were provided to support this program nor was it clear where this service should be placed in the hospital organizational structure. By May 1918, reconstruction programs in Army general hospitals had been started at Fort McHenry, Md., Fort McPherson, Ga., and Lakewood, N.J. By July, 21 additional hospitals were designated to participate in the program.

Although the impetus for initiating occupational therapy in Army hospitals came from orthopedic surgeons and neuropsychiatrists, it, unlike physical therapy, was placed organizationally under the education section, perhaps because many aides had come from the teaching field. By July 1919, directors of reconstruction programs were assigned to the reconstruction hospitals, and both components of the reconstruction programs (education service and physical therapy) were placed under their direction.

Amputations

The Army furnished only provisional artificial limbs to the disabled soldier who, after discharge, obtained his permanent limb (s) from the Bureau of War Risk Insurance. The use of provisional appliances made possible immediate fittings and early corrections of stump defects, and enabled surgical, prosthetic, physical therapy, and, most important, reeducation programs to be coordinated (fig. 20). Also, the patient had time to learn about appliances before making his final choice.

Occupational therapy aides worked with upper extremity amputees both before and after they had obtained their artificial limbs. Strap attachments above the stump were so contrived that eating utensils, paint brushes, and tools could be used until the artificial limb was available. Emphasis was placed on strengthening muscles above the site of amputation and on regaining proficiency in the use of the extremity.

The first upper extremity appliances were simple in design and fabrication. The socket was plaster of paris with a metal clamp attachment with which implements could be held. Later, an inexpensive arm was fabricated with a universal end-attachment plate in which a hand, a tool, or a hook could be fastened. Occupational therapy's goal was to enable the patient to gain maximum use and control of the appliance.



FIGURE 20—Occupational therapy for amputees, Walter Reed General Hospital, Washington, D.C., 1918. A. Upper extremity amputee uses attachment plate to assist in squaring a piece of wood.



FIGURE 20—Continued. B. Lower extremity amputee working on handmade wood lathe in treatment program. (U.S. Army photograph.)

Blindness

The occupational therapy program at General Hospital No. 7, Roland Park, Md., the only blind treatment center, was directed toward alleviating two major problems of newly blinded soldiers: Adjustment to loss of eyesight and limitation of physical activity. The work was complicated by the hostility and discouragement of patients who had been misled, by uninformed persons, into thinking they would encounter golden opportunities to earn great sums of money and would be almost unrestricted in the things they could do.

The reconstruction program was a practical one, aimed mainly at increasing the patients' manual dexterity. It included manual training, typing, vocational instruction, reading and writing Braille, and academic courses. In some areas, this original program was too optimistic as to the ability of the blind to compete with the nonblinded. It was being modified when the Army decided to discharge blind patients and transfer them to the jurisdiction of the Red Cross for further rehabilitation.

Head and Nerve Injuries

In neurological complications resulting from either head or nerve injuries, occupational therapy provided active exercise for muscles recovering from paralysis and aided greatly in reducing fibrosis of the small joints following interference with nerve function. As voluntary movements improved and endurance increased, exercise was directed toward timing and accuracy and patients were assigned to specialized activities in the curative workshops.

Neuropsychiatric Conditions

When the question of occupational therapy in neuropsychiatric hospitals was first considered, the feasibility of introducing such procedures generally into the neuropsychiatric wards was doubted. Occupational therapy was thought to be applicable only to those cases which were less disturbed mentally. This opinion changed in a few months, however, as the aides increased their skill and the benefits of occupational therapy became clearer.

Neuropsychiatric patients were separated from other classes of disabled, and, in addition, men with war neuroses were separated from those with functional disorders because the latter would require more individual attention in vocational training. Also, it had been found that men with war neuroses were inclined to be faultfinders and troublemakers and a few could corrupt general morale and make vocational training particularly difficult.

The war produced some substantial changes in the care of neuropsychiatric patients. As their number increased, active treatment replaced custodial care, individualization was stressed, and diagnosis was

no longer considered an end in itself. With the decrease of physical restrictions and, in some places, their complete removal, the climate became that of a hospital, rather than a jail.

Occupational therapy in the neuropsychiatric sections had an independent and important place under the immediate direction of the psychiatrist. Reports of the beneficial results of occupational therapy applied to neuropsychiatric patients are found in the histories of several of the general hospitals. A few extracts illustrate the aspects of the work commented upon:

In 1919, the commanding officer, Fort Sam Houston Station Hospital, Tex., reported:

> Prior to the establishment of this work among the mental and nervous cases of this hospital it was practically impossible to avoid placing the patients who were in the department in an enforced state of idleness. It is a natural consequence that idle insane patients are prone to continual self-analysis and elaboration of delusions. Likewise, unoccupied, the cases of precocious dementia are very prone to mental deterioration. With the advent of the industrial pursuits and the presence of the reconstruction aides in daily attendance among the patients, there is a noticeable improvement, a lessened tendency toward excitement or seclusiveness.

The following is taken from the account of the neuropsychiatric activities at General Hospital No. 2, Fort McHenry, for 1917–20:

> In the treatment of nervous and mental disorders occupation and recreation were of paramount importance. An occupational aide who had the happy faculty of exciting interest in a catatonic praecox, of arousing the interest of a patient in the depressed phase of a manic-depressive psychosis, of directing to useful and constructive channels the hyperactivity of a maniac, or who might be able to replace the obsessive idea of a psychasthenic with a healthy, helpful, and interested thought, certainly accomplished a great deal toward the recovery of such a patient.

Osteomyelitis

For patients with osteomyelitis, occupational therapy was prescribed to restore or improve function of stiffened joints. As the patient became engrossed in a project, he would actively exercise the contracted muscles and stiffened joints. Activities to involve use of the upper extremity appear to have had major emphasis, and included metalworking, woodworking, toymaking, and weaving.

Pulmonary Tuberculosis

Bed rest, climate, and heliotherapy were key factors in the treatment of tuberculous patients (fig. 21). For this reason, reconstruction programs for these patients developed very gradually. During the febrile stage of the disease, all unnecessary exertion was contraindicated. Although it was obvious that these long-term patients became discontented and very restless, chiefs of medical services in several hos-



FIGURE 21—Heliotherapy ward, Fitzsimons General Hospital, Denver, Colo. (Courtesy of National Library of Medicine.)

pitals actively opposed adoption of an activities program even after it had been made mandatory by The Surgeon General.[16]

Six hospitals were originally designated for treatment of tuberculous patients, but by October 1919, this number was cut to two—General Hospitals No. 19, Oteen, N.C., and No. 21, Denver, Colo.

Patients were divided into three classes:

1. Bed patients (very little activity).
2. Ambulatory patients (mild exertion, prescribed rest periods).
3. Patients with inactive tuberculosis (gradual increase of routine to full day's activity).

These classes were generally subdivided further by the hospitals to provide a means for more accurate scheduling of the patient's daily routine.

Occupational therapy programs in tuberculosis hospitals consisted mainly of ward occupations, academic work, and some curative work-

[16] One chief of a medical service thought tuberculous patients should not be permitted to take exercise in any form (General Hospital No. 21, Denver, Colo.). Another considered mental work deleterious (General Hospital No. 8, Otisville, N.Y.). Another could see no good feature in any variety of reconstruction activity (General Hospital, Fort Bayard, N. Mex.). History indicates that those who continued to oppose the policy and program as approved by The Surgeon General were transferred to other medical fields of activity. (See footnote 1(1), p. 69.)

shop activities.[17] Shop courses were seldom used because patients well enough to participate usually demanded a discharge. Certain hospital activities—for example, laundry, kitchen, bakery, printshop, usually included in curative workshop schedules—were considered inappropriate for tuberculous patients because the work was too confining, there was danger of infecting others, or the work schedule was too demanding.

Materiel Problems

Occupational therapy programs encountered some early difficulties. One, described in the Walter Reed General Hospital report to The Surgeon General for 1918, was lack of funds for supplies and equipment: The original $3,000 authorized by The Surgeon General for this hospital was not adequate. Base hospitals experienced the same problem. In the crisis, the Red Cross placed $200 per month for supplies and equipment at the disposal of each hospital having a reconstruction program. By May 1919, adequate finances were generally available.

In addition, there were problems related to the disposition of articles made in occupational therapy. At first there were no restrictions, but too many patients began spending too much time making articles to sell, rather than taking advantage of available educational courses. Instructions issued from the Surgeon General's Office in October 1918 stated that materials for articles having sale value would be purchased through the hospital fund, the articles would be sold through the post exchanges or other sources, and the price of the materials returned to the hospital fund afterward. These rules tended to discourage commercialism among the patients. Tuberculous patients were permitted exceptions to the rules, however, because producing salable articles tended to increase their confidence in their ability to become self-supporting. This was an important morale factor.

PROGRAMS WITH THE AMERICAN EXPEDITIONARY FORCES

The first American troops reached France on 25 June 1917. Before the end of the war, more than 2 million men were sent there, creating tremendous problems in logistical support. Equipment for many of the occupational therapists with the American Expeditionary Forces had to be improvised or obtained locally. No records are available to indicate the total number of occupational therapy aides assigned; that they were there and that they were effective is borne out in reports of hospital activities during this period. On 16 June 1918, the first occupational therapy aides arrived overseas with Base Hospital No. 117, La Fauche, France, a neuropsychiatric unit. The second group arrived

[17] A comprehensive description of the reconstruction program for tuberculous patients can be found in The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1927, vol. XIII, pp. 189–202.

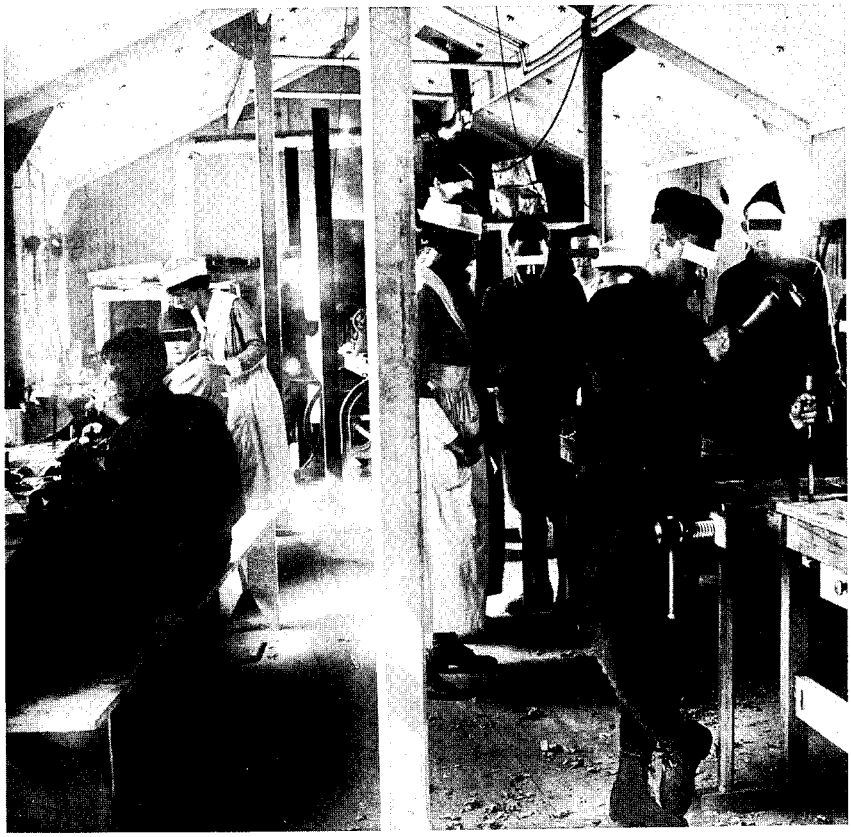


FIGURE 22—Occupational therapy aides, Evacuation Hospital No. 27, army of occupation, Coblenz, Germany. (Courtesy of National Library of Medicine.)

on 13 August 1918 and were initially assigned to work with orthopedic patients at Base Hospital No. 9, Chateauroux, France. As of May 1919, there were 55 occupational therapy aides with the American Expeditionary Forces, 17 of whom were stationed in Germany with the Third U.S. Army (fig. 22).

Patients most often treated by occupational therapy aides were those with orthopedic injuries and neuropsychiatric disorders whose conditions were such that a return to combat or other oversea duty was anticipated. Patients whose condition would prohibit further duty overseas were evacuated to the United States.

In July 1918, Colonel Goldthwait, Chief Consultant in Orthopedic Surgery, American Expeditionary Forces, stressed the need for a large number of aides trained in bedside occupation. As a result, Gen. John J. Pershing recommended to the War Department, on 2 August 1918,

that 10 occupational therapy aides accompany each base hospital sent overseas and be reassigned after their arrival.[18]

Col. Thomas W. Salmon, MC, Senior Consultant in Neuropsychiatry, American Expeditionary Forces, in an August 1918 letter, wrote enthusiastically about the work of the occupational therapy aides at Base Hospital No. 117:[19]

> The Reconstruction Aides, especially those working in handicrafts, are worth their weight in gold. I could use 20 of that type in the A.E.F. today to the best advantage. Perhaps I could use some of the "highbrow" type, but I am not sure. At any rate, if the amount of cubic feet which they will occupy on the voyage has to be considered, send me those trained with the feebleminded, who have industry, optimism and bright, receptive minds.

As a consequence of that letter, occupational therapy aides sent overseas for work with neuropsychiatric patients were required to have previous experience in working with the mentally ill and be skilled in bedside occupations.

Status

In the beginning, there was no aura of distinction about being an occupational therapy aide. Except for those assigned with the neuropsychiatric hospital units, the early status of the aide was that of an unknown entity. Few people knew what the aides were supposed to do. They were civilians in a military setting, and they were a new professional group with the Army. It was an understandable situation, in retrospect, since the term "occupational therapy" had only been in use since 1917, and there had been insufficient time for the aides to earn stature and recognition through professional accomplishment. One aide reported, "We were nondescripts. We were pioneers going out with hardly the military status of scrubwomen." [20]

In several hospitals, until their duties were clarified, the occupational therapy aides assisted the nurses. Miss Lena Hitchcock, occupational therapy aide, assigned to Base Hospital No. 9, comments as follows on her nurses' aide activities:[21]

> I went on duty at 6 a.m., and until 9 a.m. did nurses' aide work (administered Dakin's solution to all patients receiving the treatment, swept out 70 beds with a whiskbroom, washed 70 faces and prepared 4 dressing carts (assisting at one), did all sterilizing). Lunched from 11:30 a.m. to 12 m., back to the ward until 6 p.m., interrupted by supper at 5 p.m. (1/2 hour), * * * time spent from 6 to 8 p.m. as nurses' aide as well as three Sundays per month.

Even after the occupational therapy programs were organized, these were sometimes halted temporarily so that the aides could assist the

[18] Cablegram, Gen. John J. Pershing to The Adjutant General, Washington, 2 Aug. 1918, par. 9.

[19] Letter, Maj. Frankwood D. Williams, MC, Division of Neurology and Psychiatry, Office of The Surgeon General, to Mrs. Howard Mansfield, New York, N.Y., 19 Aug. 1918.

[20] Hoppin, Laura Brackett: History of the World War Reconstruction Aides. Millbrook, N.Y.: William Tyldsley, p. 76.

[21] Personal correspondence of Miss Lena Hitchcock, Reconstruction Aide in Occupational Therapy in World War I, with the author.

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nurses when large convoys of sick or wounded soldiers arrived. This was particularly evident during emergency periods in the fall of 1918 when all hospital activity was focused on caring for the influenza patients from the transports and the wounded from the Meuse-Argonne Campaign which lasted from 26 September to 11 November 1918.

In November 1918, the occupational therapy aide's role as a nursing assistant was made official: "* * * when their services are not required in their special work they may be temporarily assigned to duty as nurses' aides." [22]

Orthopedic Programs

The accounts of the occupational therapy programs for orthopedic patients at Base Hospital No. 9 and Base Hospital No. 8, Savenay, France, are representative both in problems encountered and work accomplished.

Since the occupational therapy aides had been sent to France with no supplies or equipment, they used their own funds and imagination to supply them. They salvaged empty tin cans and wooden boxes to begin their metalworking and woodworking programs. The ingenuity and enthusiasm of the aides were infectious and the wounded soldiers themselves soon saw possibilities for materials for projects. Shell casings were their major contribution. These came in all sizes and were extremely popular as they provided a source of brass of different thicknesses for projects which could be graded in size and difficulty according to the treatment needs of the patient.

As for equipment, an almost destitute situation prevailed in both hospitals. Base Hospital No. 8 started with one chest of tools, while Base Hospital No. 9 began its occupational therapy programs with one clawhammer and an old, fancy French plane. Later, both hospitals accumulated lathes, saws, and drills, and aides and patients built looms and other necessary equipment (fig. 23).

Orthopedic surgeons examined the patients and recommended activities for them. The diagnostic categories included fractures, gunshot wounds, peripheral nerve injuries, and amputations. The objectives of treatment were twofold: (1) Psychological—to have the patient recognize his abilities and to divert his attention from his disabilities; (2) physiological—to maintain and improve function of the injured part or, in the case of upper extremity amputation, to work toward skilled and dexterious use of the remaining extremity.

These objectives were met through distinct programs for bed and ambulatory patients (fig. 24), as follows:

Bed patients.—Activity requiring little physical effort but much concentration and coordination: woodcarving, leatherwork, blockprinting, simple weaving, and knitting.

Ambulatory patients.—As soon as possible, patients with upper ex-

[22] Circular No. 56, American Expeditionary Forces, 19 Nov. 1918.

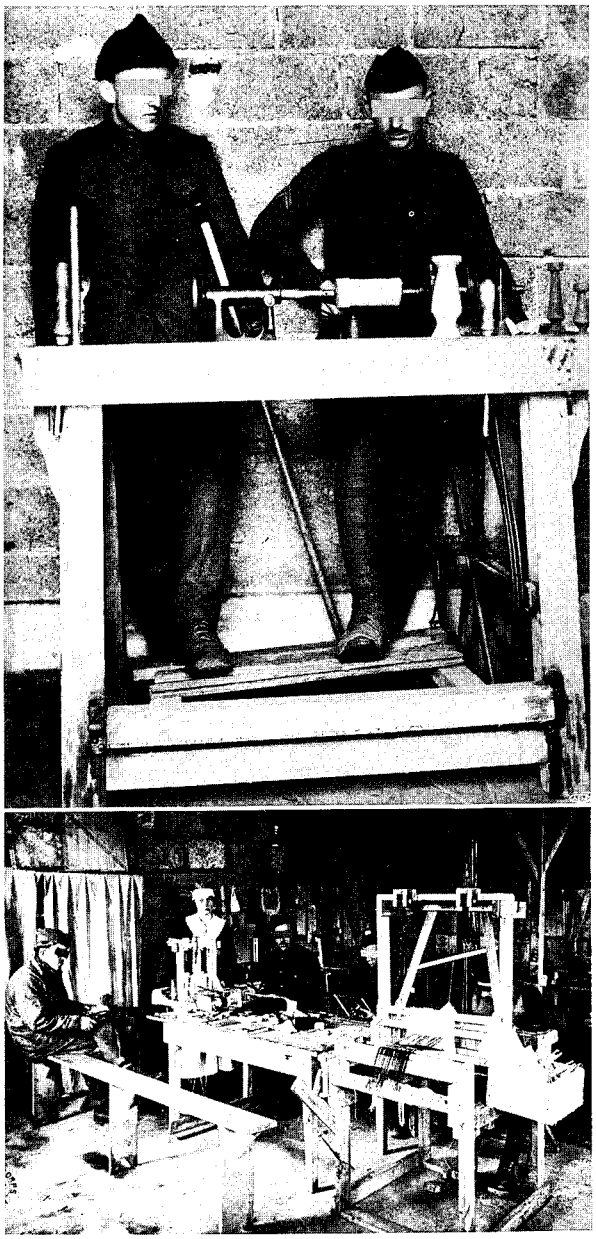


FIGURE 23—Handmade occupational therapy equipment, American Expeditionary Forces. (Top) Treadle wood lathe, Base Hospital No. 9, Chateauroux, France. (Bottom) Wood floor and table looms, Base Hospital No. 214, Savenay, France. (Courtesy of National Library of Medicine.)

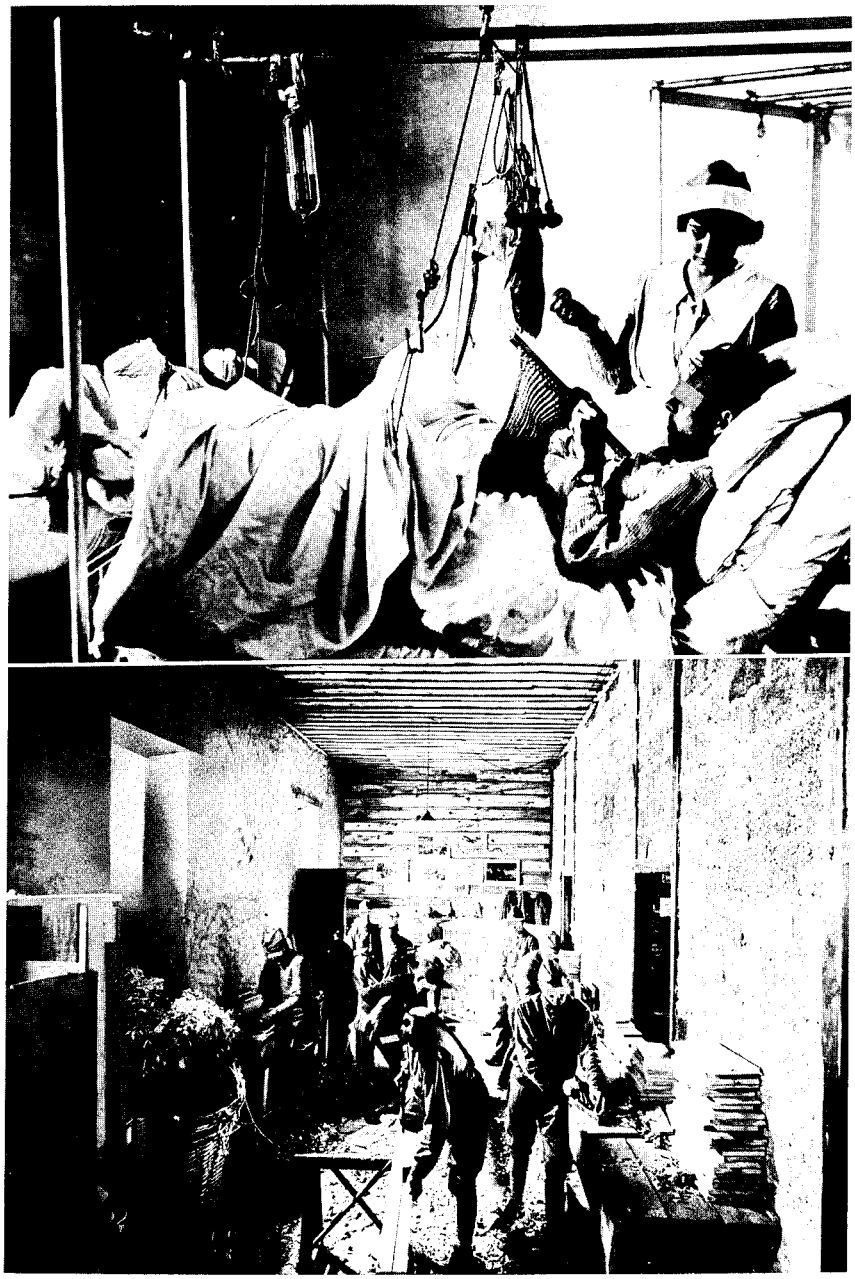


FIGURE 24—Occupational therapy for orthopedic patients, Base Hospital No. 9, Chateauroux, France. (Courtesy of National Library of Medicine.) (Top) Bedside occupational therapy for patient with gunshot wounds of both legs. (Bottom) Woodworking shop.

tremity injuries to be engaged in light activity (light brasswork, woodcarving, and general carpentry) to maintain muscle tone and to prevent stiffness and atrophy. Hand drills were used to improve and strengthen grasp. Men unable to grasp wore gloves which could be tied to the handle of the tool to achieve a beginning pattern of motion. Sawing was considered the best exercise for shoulder conditions. Metal hammering on lightweight brass provided flexion and extension for wrist problems. Patients with lower extremity injuries used looms, saws, and drills to increase strength and range of motion or did workbench projects to increase standing endurance and strength.

Approximately 2,400 upper extremity amputees were returned to the United States.[23] Very little was written about the occupational therapy program for amputees, although reports from Base Hospital No. 9 indicate early attempts in retraining because of loss of the dominant hand or arm.

Neuropsychiatric Programs

Neuropsychiatric service with the American Expeditionary Forces was begun in December 1917, when Colonel Salmon was appointed director of psychiatry. The most urgent problems he faced were (1) to provide psychiatric service to troops in the field and (2) to establish a special hospital for the treatment of men with war neuroses who were appearing in increasing numbers in base hospitals. A neuropsychiatrist was assigned to each combat division to handle the first problem. By February 1918, a special hospital had been selected at La Fauche and 16 base hospitals were receiving or ready to receive neuropsychiatric patients. Later, a special neuropsychiatric hospital was established at a base port to facilitate evacuation to the United States.[24]

By the time the United States entered World War I, new methods of combat—high explosives, liquid fire, tanks, poison gas, bombing planes, trench warfare—had created a novel entity called shellshock. There was some controversy as to whether the cause was mental or physical, but the condition gradually became recognized as a functional war neurosis. It usually occurred in unwounded soldiers. Since shell explosives were seldom a factor in the onset of the condition, an attempt was made to abolish the term "shellshock" but its popularity prevailed, particularly among the troops.

The functional war neuroses[25] were the only group of neuropsychiatric patients to be treated with the direct objective of return to

[23] The Medical Department of the United States Army in the World War. Washington: U.S. Government Printing Office, 1927, vol. XI, pt. 1, p. 718.

[24] Evacuation was not easily accomplished. No special vessels were designated for the transportation of neuropsychiatric patients and they had to be included in the limited hospital accommodations available on the return trips. There was misunderstanding as to what constituted proper accommodations for these patients, and, as a result, some were retained in the port hospital while other sick and wounded were more rapidly evacuated. Treatment programs were continued during this period so that there was no gap in the care of these patients.

[25] The following conditions were classified as war neuroses: Neurasthenia, hypochondriasis, hysteria, anxiety neurosis, anticipation neuroses, effort syndrome, exhaustion, timorousness, and gas and concussion syndrome.

duty with the American Expeditionary Forces. Other neuropsychiatric patients (psychoses, mental deficiency, constitutional psychopathic states) were returned to the United States.

The number of neuropsychiatric hospitals to which occupational therapy aides were assigned is not known, but the program at Base Hospital No. 117, which was the treatment center for functional war neuroses, appears representative of occupational therapy activity. A study of British and French management of patients with war neuroses disclosed that early treatment prevented loss of effective manpower. Base Hospital No. 117, operating on this principle, was most successful, returning 50 percent of these patients to combat and 40 percent to other military duty.

Equipment, supplies, and space were available for occupational therapy at Base Hospital No. 117 since this unit had been planned and organized in the United States; thus, some of the problems which confronted the orthopedic programs were not present. Money and credit were given by the National Committee on Mental Hygiene and, as supplies diminished through use, by the Red Cross.

One of the basic treatment principles was that work was one of the most important parts of symptomatic cure. More than 80 percent of the patients were always working—in the fields, building roads, chopping wood, or in the workshop. Work selected was always of a type that would provide tangible proof of effort.

Meta Anderson, occupational therapy aide, in her report of activities at Base Hospital No. 117, comments on the work scheme as follows:

> From early in June until the end of the war nearly 3,000 cases of war neurosis passed through the hospital. A large proportion of these took part in some kind of work in the workshop as part of their treatment. It was possible to judge, therefore, with a fair approach to accuracy, just what this sort of work was able to do for them, and how necessary a part of the hospital for the neuroses is a workshop.
>
> * * * * * * *
>
> The workshop was considered a sort of specialized therapy directed to a more definite end, planned to treat some definite symptom or to meet some special indication, while the other work was regarded as a kind of therapeutic background underlying the whole scheme of curative effort. The physiological and psychological needs were met by the use of muscular effort in the production of tangible articles. The handling of the tools and the various movements of sawing, nailing, screwing, and hammering, and the finer and more coordinated movements of wood carving, metal work of various kinds, weaving, and tinning, as well as much more delicate and more emotionally inspired technique of painting, sketching, and printing, supplied the essential training that the paralysis, tremors, and other symptoms needed.

Occupational therapy was carried out experimentally in a neuropsychiatric hospital in the forward area. The experiment lasted only 2 weeks but the medical officer in charge indicated that, through the assistance of workshop treatment, men were returned to duty who had previously been listed for evacuation to base hospitals for further treatment.

Inservice Educational Programs

During the winter of 1918–19, regular courses in psychiatry and neurology were given to hospital personnel, including occupational therapy aides, at Base Hospital No. 117 and Base Hospital No. 214, Savenay, France. During the same period, lectures by various surgeons were given on orthopedic subjects to the aides at Base Hospital No. 8.

Section II. Peacetime

By July 1919, only 19 Army general hospitals in the United States remained in operation for the treatment of the war injured. Some hospitals had been turned over to the U.S. Public Health Service,[26] others had reverted to base hospitals in which only the sick of the camp commands were treated, and some had been deactivated. By June 1921, only six general hospitals were in operation for the treatment of patients with serious chronic conditions and those requiring general hospital care.[27]

Because of the decreasing activities, physical reconstruction was discontinued as a division in the Surgeon General's Office in June 1919 and became a section in the division of hospitals. Although a reconstruction service was maintained in all the general hospitals and at the Fort Sam Houston Station Hospital, close supervision of the work and personnel was not maintained by the Surgeon General's Office. A general policy of decentralization gave greater responsibility for professional services to the commanding officer in the hospital.

PERSONNEL

The actual number of occupational therapy aides on duty during World War I is unknown. Mrs. Eleanor R. Wembridge, Supervisor, Occupational Therapy Reconstruction Aides, reported that on 1 January 1919 there were 455 aides in the service; 358 of these were on duty in the United States and 97 were on foreign duty.[28] It has been estimated that 1,400 reconstruction aides were employed as of June 1919 in the United States but since this category could include physical therapists, teachers, and social workers, in addition to occupational therapy aides, the figure is vague insofar as the number of occupational therapy aides is concerned. In December 1926, the Surgeon General's Office recommended that physical therapy and occupational therapy aides be designated as such, since the term "reconstruction aide" for

[26] Until the Veterans' Bureau (now Veterans' Administration) was established in 1921, all discharged servicemen could be treated in U.S. Public Health Service hospitals under the provisions of the Bureau of War Risk Insurance.

[27] Army and Navy General Hospital, Hot Springs, Ark.; William Beaumont General Hospital, El Paso, Tex. (newly constructed, received its first patients on 1 July 1921); Fitzsimons General Hospital, Denver, Colo.; Letterman General Hospital, San Francisco, Calif.; Walter Reed General Hospital, Washington, D.C.; Fort Sam Houston Station Hospital, Tex.

[28] Wembridge, Eleanor R.: Historical Sketch of the Work of the Occupational Aides in the Division of Physical Reconstruction.

both groups was confusing as it did not identify the activities for which they were employed.

The number of occupational therapists assigned to Army Hospitals decreased during the peacetime period, 1919–40. This decrease is most realistically illustrated by the Walter Reed General Hospital annual reports which show a cutback from 75 aides and 90 enlisted men in April 1919 to the discharge of all aides "without prejudice" in June 1933. The latter state resulted from an Army-wide reduction in force dictated by the National Economy Act of that year. Although one occupational therapy aide was reemployed in October, she was paid from Civilian Conservation Corps funds for treatment of their members in the hospital. In 1939, two aides were on duty; one was paid from Medical and Hospital Department (Army) funds, the other from Civilian Conservation Corps funds.

The status of the occupational therapy aide was that of a civilian employee, Medical Department at Large. There were no provisions for retirement or disability compensation in that category, nor was there a graduated salary scale which would provide for regular salary increments. In June 1931, a graduated salary scale was adopted. Retirement and other benefits, however, were not provided until 1939 when all civilians paid from Medical and Hospital Department appropriated funds [29] were brought under competitive civil service classification. The salary ranges throughout the peacetime period were very similar to those of the dietitians and the physical therapists. (See Appendix B, p. 595.) Aides continued to receive their appointment through the Surgeon General's Office, and vacancies in Army hospitals were filled by graduates of the Army course while that course was in existence.

TRAINING

A 6 months' training course for occupational therapy aides was begun in October 1924 at Walter Reed General Hospital. The purpose of the course was to provide a source of skilled aides for assignment in Army hospitals. Limited to a class of 10 students, this course offered advanced training in occupational therapy, medical subjects, and practical experience in applying the work in military hospitals.

Application for admission was made directly to the Commandant, Army Medical Center, Washington, D.C. Applicants could not be less than 20 nor more than 30 years of age and, since this was an advanced course, they had to be graduates of schools which required at least the minimum standards for training courses in occupational therapy. It was considered desirable to have additional training in a college or university. A civilian physician's health certificate was required even though the applicant's final acceptance was not assured until she had

[29] During this period, salaries were paid from one of three sources: Medical and Hospital Department (Army) funds, Civilian Conservation Corps, or Veterans' Bureau funds paid to the specific Army hospital for treatment of Civilian Conservation Corps or Veterans' Bureau patients.

passed the physical examination at Walter Reed General Hospital. Certificates of character from two reputable persons were also required.

Quarters, rations, and laundry were provided by the hospital and the students received $5.00 per month while in the training program. Each was required to furnish the prescribed uniform: A blue gingham dress, white apron with straps, white collar and cuffs, and white oxfords with low rubber heels.

In order to provide increased practical experience in the treatment of patients, the course was lengthened from 6 to 8 months in 1931 and to 9 months in 1932. A comparison of the 6-month and 9-month curriculums is shown in table 4. A request in 1932 to lengthen the course to 11 months was disapproved for financial reasons.

Maj. James B. Montgomery, MC, chief of physical and occupational therapy, directed the course, assisted by Miss Alberta Montgomery, supervisor of the occupational therapy aides.[30] Several subjects were taken with the students of the Army School of Nursing. Medical subjects were taught by medical officers, and anatomy and the orientation to physical therapy were given by Miss (later Col.) Emma E. Vogel, supervisor, physical therapists. The remaining subjects were taught by members of the occupational therapy staff.

Because of financial curtailments necessitated by the National Economy Act of 1933, this training program was discontinued with the graduating class of 1933.[31] At that graduation, Maj. Gen. Robert U. Patterson, The Surgeon General, remarked:[32]

> In conclusion I wish to express my great regret at the temporary restrictions placed upon these courses of training at this hospital. These teaching schools at the Army Medical Center will only be suspended until funds become available to continue the schools and pay the students.

Both the dietitian and physical therapist courses were resumed in 1934. Brig. Gen. Albert E. Truby, Commanding General, Army Medical Center, gave as his reason for not reopening the occupational therapy course, "Additional personnel would be required for instructors and it is not desired to increase the civilian personnel at this station." [33]

PROFESSIONAL ACTIVITIES

Army occupational therapy grew in breadth and depth following its introduction into the military medical program during World War I. Having been primarily planned in 1917 as a bedside occupation pro-

[30] Records do not indicate that Major Montgomery and Miss Montgomery were related.

[31] Forty-four occupational therapy aides graduated from 1924 to 1933.

[32] Patterson, R. U.: Remarks to the Graduating Classes of Dietitians, Physiotherapy Aides and Occupational Therapy Aides at the Army Medical Center, June 29, 1933. Occup. Therapy 12: 365–371, December 1933.

[33] Letter, Col. P. W. Huntington, MC, Army Medical Center, to The Surgeon General, 30 Jan. 1934, subject: Reopening of Hospital Training Courses for Aides in Occupational Therapy, Physiotherapy and Dietetics. 1st indorsement thereto.

TABLE 4—*Comparison of curriculums in occupational therapy, Walter Reed General Hospital, Washington, D.C., 1924 and 1932*

Subject	1st Course[1] (Hours)	9th Course[2] (Hours)
Medical:		
Amputations and orthopedic surgery	3	.....
Anatomy and physiology	20	.....
Anatomy	.....	160
Anesthesia	2	3
Communicable diseases	3	10
Dermatology	5	10
Diet in disease	4	.....
Emergency nursing, medical	.....	5
Emergency nursing, surgical	.....	5
Ethics	.....	5
First aid in illness and injury	3	.....
General medicine	3	12
General surgery	.....	16
Gynecology	4	2
Nerve and muscle injuries	2	.....
Neuropsychiatry	.....	12
Ophthalmology and otolaryngology	3	.....
Ophthalmology	.....	4
Oral hygiene	.....	2
Orthopedic surgery	.....	10
Otorhinolaryngology	.....	2
Pediatrics	3	.....
Physiology	.....	15
Physiotherapy	5	5
Principles of surgery	3	.....
Psychiatry and psychoneuroses	10	.....
Psychology	.....	15
Public sanitation and hygiene	15	.....
Roentgenology	.....	12
Sanitary science	.....	4
Tuberculosis	3	.....
Urology	.....	5
Urology and venereal disease	3	.....
Arts and crafts (analysis of voluntary motion included for each craft):		
Design	60	100
Jewelry and metalwork	60–80	60–120
Pottery	60–80	60–120
Reed and canework	60–80	40–100
Plant propagation and flower gardening	60–80	.....
Weaving	60–80	60–120
Woodwork	60–80	100
Ward practice	.....	200–250
Administrative subjects	76	28
Total	650	1,252

[1] Six-month course, 1 October 1924 to 31 March 1925.
[2] Nine-month course, 1 October 1932 to 30 June 1933.

gram of craft instruction to convalescent orthopedic patients for cheer-up purposes, it developed into ward and clinic treatment programs,

professional in nature, purposely directed toward maximum restoration of mentally or physically disabled soldiers. The ward and clinic concept continued during the peacetime period, the program gradually becoming more and more limited in scope as cutbacks in personnel occurred because of the decrease in funds authorized for hospital operation.

In general, throughout this period, supplies were obtained through the Medical Supply Division and local purchase channels, and the disposition of articles remained as it had been during the war period.

The Walter Reed General Hospital program had its largest physical expansion in 1927 when six shops were designated for treatment of physically disabled patients in addition to a shop for treatment of neuropsychiatric patients. After the economy cut in 1933 and throughout the peacetime period, the only shop facility retained at this hospital was in the neuropsychiatric area. Conditions other than neuropsychiatric were referred for specific treatment to this shop by the medical officers on the wards. Progress notes were written on these patients and sent to the medical officer concerned.

A general and a neuropsychiatric clinic were maintained at Fitzsimons General Hospital, Denver, Colo., before the economy cut. Both clinics were closed as of June 1933, reopened in February 1934, and continued to function on a limited basis throughout the period covered by this chapter (1917–40).

The annual reports from Letterman General Hospital, San Francisco, Calif., show that by 1920, reduction of occupational therapy personnel had curtailed all but the activities in the neuropsychiatric section. In 1927, the work was extended to all patients in the hospital who could be benefited by it. In 1932, a large centrally located room was designated for the treatment of ambulatory and wheelchair patients and the work in the neuropsychiatric section continued. The cutback of 1933 necessitated confinement of service to the psychiatric and general wards. In 1936, only one aide was available, and the work was restricted to patients in the neuropsychiatric section. Reports of the remainder of the peacetime period indicate that occupational therapy continued to be centered largely in the neuropsychiatric section.

The Fort Sam Houston Station Hospital (later Brooke General Hospital) conducted occupational therapy programs until June 1926 when these were discontinued because of a decrease in operating funds. The 1922 annual report from Brooke General Hospital indicated that occupational therapy was used in the general wards and in the psychopathic section. The annual report for 1926 stated:

> It is regretted that the shortage of funds necessitated discontinuance of the Occupational Therapy work during the year. This work was of inestimable value in connection with the care and treatment of neuropsychiatric cases and the bedridden cases of tuberculosis. It is earnestly recommended that funds be made available during the next year for the employment of two Occupational

Therapy Aides so that this important and valuable adjunct to the professional services may be resumed.

In 1932 and 1933, the annual reports of Brooke General Hospital continued to point up the need for occupational therapy: "This form of therapy is particularly useful for nervous and mental cases."

Before World War I, the Army and Navy General Hospital, Hot Springs, Ark., was restricted to the treatment of patients who could benefit from the mineral hot springs for which the location was noted. After the war, although recognized as the center for the treatment of arthritis, all types of patients, except those with pulmonary tuberculosis, were admitted for treatment. Occupational therapy was begun in June 1926 and was discontinued in 1936 because of limitations in funds.

The utilization and value of occupational therapy in the military setting during this period were probably best described by the medical officers who worked closely with it. In June 1924, Maj. Sidney L. Chappell, MC, Chief, Neuropsychiatry Service, Walter Reed General Hospital, wrote: [34]

> The most convincing argument of the efficacy of occupation, in the management of neuropsychiatric cases, is to work with these patients in some mental hospital. * * * Numerous cases can be cited who have been regressed, excited, or depressed, where persistent effort has succeeded in arousing some dormant spark of normal interest.
>
> * * * * * * *
>
> It is common observation that although it may not produce cures, with its aid, recoverable cases improve more rapidly or are raised a little from their regressed or depressed states and as a result can be attacked more easily by other therapeutic means.

In February 1930, Maj. (later Brig. Gen.) Harry D. Offutt, MC, Director of Occupational and Physical Therapy, Walter Reed General Hospital, wrote of the successful employment of occupational therapy in the treatment of patients with empyema, pneumonia, tuberculosis, mental illness, defective sight and hearing, amputations, fractures, and cardiac conditions and stressed some precautions to be observed.[35] Major Offutt pointed out that, although activity for patients is thought of as being either mental or physical, one rarely exists without the other. He acknowledged the benefits of diversion and brought a different perspective to this facet of activity:

> Many patients do not feel at first that they are able to work as we usually think of the term; the pleasure-producing activity makes a stronger appeal. The psychology of the patient is considered and the suitable activity supplied to him, so that from his viewpoint it is diversion. From the therapist's viewpoint it is well planned treatment.

[34] Chappell, S. L.: Occupational Therapy for Neuropsychiatric Cases. Arch. Occupational Therapy 3: 213–215, June 1924.

[35] Offutt, H. D.: Occupational Therapy in a Military General Hospital. Occup. Therapy 9: 1–10, February 1930.

In September 1932, Capt. H. M. Nicholson, MC, Director of Physical and Occupational Therapy, Walter Reed General Hospital, in an address to the members of the American Occupational Therapy Association at their 16th annual meeting, indicated that occupational therapy as a part of the patient treatment program could generally be utilized in three different areas: "(1) the chronic general medical and surgical case, (2) the neurological and orthopedic grouping, and (3) the neuroses and psychopathic classes." Captain Nicholson also stressed the assistive role of the occupational therapist,[36] "to help the usual medical, surgical, and physiotherapy treatment achieve a complete and useful end-result."

WAR CLOUDS

By the late 1930's, the entire basis of international relations founded upon the Treaty of Versailles was disintegrating. In September 1939, Germany invaded Poland and, subsequently, England and France declared war on Germany. This had immediate effects upon the United States and its military departments. The President declared a limited national emergency on 8 September 1939 and the buildup in the strength of the Army began.

Inasmuch as funds appropriated by Congress during the peacetime period for Medical Department construction had barely covered more than essential maintenance of hospital buildings, expansion of hospital facilities was a primary concern. Reserve equipment was either deficient or obsolete.[37] Closely correlated with this was the necessity for a proportionate increase in the number and kinds of personnel required for effective operation.

Throughout the years, it had been suggested to The Surgeon General that military status should be given to dietitians, physical therapists, and occupational therapists. (See Chapter 1, pp. 3–5.) Legislative efforts to achieve this were begun in 1939. Occupational therapists were included in the initial bill (S. 1615, 76th Congress, 1st Session) on which no congressional action was taken, but were omitted from the subsequent bill (S. 3318, 76th Congress, 3d Session) which was introduced in February 1940 but was defeated. In reply to an inquiry regarding this omission, in April 1940, The Surgeon General stated:[38]

> Only nine occupational therapy aides are now employed in military hospitals. Of this number, one is provided for the military, two for the Civilian Conservation Corps, and six for Veterans' Administration patients. It, obviously, would be undesirable to include in the bill a provision for occupational therapy aides when there is only one employed for the military patients.

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[36] Nicholson, H. M.: Why Occupational Therapy in Military Hospitals? Occup. Therapy 12: 37–42, February 1933.

[37] Smith, Clarence McKittrick: The Medical Department: Hospitalization and Evacuation, Zone of Interior. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1956, p. 6.

[38] Letter, Maj. Gen. James C. Magee, The Surgeon General, to Everett S. Elwood, President, American Occupational Therapy Association, 1 Apr. 1940.

Part II

THE CONSTITUENT GROUPS IN WORLD WAR II

CHAPTER V

Wartime Organization and Administration

Colonel Emma E. Vogel, USA (Ret.),
Colonel Katharine E. Manchester, AMSC, USA,
Major Helen B. Gearin, USA (Ret.), and
Major Wilma L. West, AMSC, USAR

The expansion of the Army hospitalization program was concurrent with the period of mobilization, 1940–42. Of the 66 Army general hospitals in the United States in use during World War II, 21 were opened during 1941 and 1942.[1] The mobilization program brought into acute focus the problems inherent in the civilian status of dietitians, physical therapists, and occupational therapists in the Medical Department. Those who had been with the Medical Department in the thirties could vividly recall the insecurity generated by the drastic reductions in their personnel and the cutbacks and elimination of professional programs following passage of the National Economy Act of 1933.

As civilian employees of the War Department, they had lived in the same quarters, if available, as those occupied by members of the Army Nurse Corps. They conformed to the same social rules. There were some privileges accorded them as civilians throughout the peacetime years, by nature of their professional status, which could not always be continued during wartime when large numbers of civilians in many diversified categories were employed in Army hospitals. Since dietitians, physical therapists, and occupational therapists were on a subprofessional status under civil service classification, no privileges could be granted to them if the other subprofessional employees could not participate. As the war progressed, government quarters were not often available and they had to obtain housing off the military reservation. With the implementation of gas rationing, this often proved to be a serious problem.

Except in acute emergencies, hospitalization and dental care were not available. Also, transportation to the first assignment was not paid by the government. The disadvantage of civilian status was increasingly evident to the dietitians. Even though their duties in military hospitals were essentially the same as those in civilian institutions, Army dietitians usually did not have control over mess personnel.

In December 1942, the dietitians and physical therapists were authorized relative rank in the Medical Department for the duration of the

[1] Smith, Clarence McKittrick: The Medical Department: Hospitalization and Evacuation, Zone of Interior. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1956, pp. 304–313.

war and 6 months thereafter.[2] The military occupational specialty designation 3420 was given to the dietitians and 3418 to the physical therapists. Army serial numbers were assigned with an "R" preceding those of the dietitians and an "M" those of the physical therapists. Their civil service classification was terminated on 31 March 1943. In June 1944, they were granted full commissioned rank in the Army of the United States. (See Chapter I, pp. 8–10.) Although there were many efforts made by physicians and national and state occupational therapy associations to include occupational therapists in these legislative acts, The Surgeon General did not seek commissions for them since he had decided they would not serve overseas during World War II and thus would not need the protection under international law which military status provided.

Early in 1944, because of the increased difficulty of procuring occupational therapists under civilian status, it was proposed by The Surgeon General that occupational therapists be commissioned in the Women's Army Corps and assigned to duty with the Medical Department.[3] This proposal was not accepted by the occupational therapists. They wanted commissions, but only in a medically affiliated pattern similar to that authorized for dietitians and physical therapists. The proposal was not approved by the War Department.

SURGEON GENERAL'S OFFICE

Between World Wars I and II, there was no dietitian, physical therapist, or occupational therapist assigned to the Surgeon General's Office. For many years, Miss (later Lt. Col.) Helen C. Burns,[4] chief dietitian, and Miss (later Col.) Emma E. Vogel, chief physical therapist (fig. 25), at Walter Reed General Hospital, Washington, D.C., had served in an advisory capacity to the Surgeon General's Office on matters pertinent to the training programs which they conducted and the assignment of their specialized personnel. A training program in occupational therapy had not been given since 1933.

Dietitians and Physical Therapists

Early in January 1942, Miss Vogel was assigned to the Civilian Personnel Division, Surgeon General's Office, on a part-time basis to develop and coordinate the physical therapy program. By February 1942, when problems concerning procurement of dietitians for affiliated reserve units became more numerous and urgent, Miss Burns was also assigned.

In these positions, neither had an opportunity to visit other hospitals to coordinate and standardize programs because they had to

[2] Public Law 828, 77th Congress, 2d Session, 22 Dec. 1942.

[3] Memorandum, Lt. Col. Robert J. Carpenter, MC, Executive Officer, Office of The Surgeon General, for War Department, Chief of Staff, 8 Apr. 1944, subject: Commissions in the Women's Army Corps for Occupational Therapists for Assignment to Duty With Medical Department Installations.

[4] Later Maj. Helen B. Gearin, WMSC.



FIGURE 25—Miss Emma E. Vogel, chief physical therapist, and Miss Helen C. Burns, chief dietitian, Walter Reed General Hospital, 1942.

alternate their services every other day between Walter Reed General Hospital and the Surgeon General's Office. This situation was alleviated on 24 August 1942 when both were appointed superintendents of their respective groups on a full-time basis. Miss Burns and Miss Vogel not only made field trips to Army hospitals to assist in establishing and maintaining adequate standards and procedures in their departments but they also were responsible for training activities, personnel actions, preparation of pertinent manuals and directives, and many other administrative and professional matters which concerned their specific professional group.

In January 1943, authorized by Public Law 77–828, the Secretary of War designated Miss Burns as director of dietitians and Miss Vogel as director of physical therapy aides. Commissioned in the grade of major, each was the first in her profession to be commissioned under this law. They were transferred to the Military Personnel Division where subsequently they established a Hospital Dietitian Branch and a Physical Therapy Branch. Their duties in these two branches continued to be essentially the same as when they were directors in civilian status.

Although a number of dietitians were assigned to duty in the Dietitian Branch from 1943 to 1947, only four were assigned on

other than temporary duty: Capt. (later Maj.) Helen A. Dautrich, Capt. (later Lt. Col.) Katharine E. Manchester, Capt. (later Lt. Col.) Eleanor L. Mitchell, and Capt. (later Lt. Col.) Ruby Z. Winslow. During this same period, the following officers were assigned to the Physical Therapy Branch: Capt. Jean Beatty, Capt. (later Lt. Col.) Olena Cole, Capt. (later Lt. Col.) Mary Lawrence, Capt. (later Col.) Harriet S. Lee, 1st Lt. Martha Norris, and Capt. (later Lt. Col.) Agnes P. Snyder.

Occupational Therapists

At the request of The Surgeon General of the Navy, the National Research Council's Division of Medical Sciences formed a Conference on Occupational Therapy to advise on the proper organization of occupational therapy in the armed services. The first meeting was held on 15 May 1942. Dr. Winfred Overholser, Superintendent, St. Elizabeths Hospital, Washington, D.C., was chairman [5] and Mrs. Winifred C. Kahmann, Director of Occupational and Physical Therapy, Indiana University Medical Center, Indianapolis, Ind., and Chairman of the Education and War Service Committees, American Occupational Therapy Association, was secretary.

Recommendations from this conference, which were forwarded to the Surgeons General of the Army and Navy, included two that had primary bearing on the organization of occupational therapy: "1. Each Army, Navy, and Veterans Bureau, General or Special Hospital, if practical, should have Occupational Therapy Service for reasons of morale and physical improvement. 2. Occupational Therapy Service should be under direct medical supervision in coordination with Physical Therapy." [6]

There was no central organization in the Army to plan and direct occupational therapy activities for hospital clinics, nor was there information on hand by which to judge requirements for personnel, equipment, and supplies. The Medical Department had "taken no steps to determine the kind and amount of such equipment required in event of emergency" and had suggested that perhaps the American National Red Cross could obtain this "as well as providing the personnel to supervise its use." [7] The need for information with which to implement organization was evident to the conferees.

Two subcommittees were appointed by the President, American Occupational Therapy Association, one to investigate the procurement

[5] (1) Members included representatives of the Surgeons General of the Army, Navy, and U.S. Public Health Service, Veterans' Administration, civilian physicians representing the fields of psychiatry, orthopedics, tuberculosis, and general medicine, three occupational therapists, and the president of the American Occupational Therapy Association. (2) Doctor Overholser was also Chairman of the National Research Council's Committee on Neuropsychiatry which worked to secure military status for occupational therapists.

[6] Minutes, First Meeting, Conference on Occupational Therapy, National Research Council, Division of Medical Sciences, 15 May 1942.

[7] Letter, The Surgeon General, to Norman H. Davis, Chairman, American National Red Cross, 6 Mar. 1939, undated memorandum attached, subject: Assistance To Be Requested From the American Red Cross Upon Mobilization.

and classification of personnel,[8] the other to investigate supplies, equipment, and staff organization.[9] In a combined progress report [10] to the conference, on 20 January 1943, the committees proposed that—

1. A field director be appointed to direct organization of departments and maintain standards.
2. A short indoctrination course be given for occupational therapists.
3. All treatment be under the direction of a medical officer and that Red Cross volunteers working with patients in recreational and diversional activities be under the direction of an occupational therapist.
4. There be two occupational therapy units, neuropsychiatric and orthopedic.
5. There be five major types of treatment programs: physical injuries, neuropsychiatric conditions, tuberculosis, general medicine, and blindness.

At a fourth and apparently final meeting of the conference, on 2 June 1943, emphasis was placed on the need for the Civil Service Commission to reclassify occupational therapists from the trades and industries section to the medical section.[11]

Reports of the conference subcommittees [12] reveal an abundance of information which was assembled for guidance and direction in establishing occupational therapy programs in military hospitals. That the work of the conference and its subcommittees was of tremendous value is evidenced by the later implementation of many of the proposals.

It was not until April 1943 that a central organization was established for occupational therapy in the Surgeon General's Office. The impetus for this came directly from Col. Roy D. Halloran, MC, Director, Neuropsychiatry Branch, Medical Practice Division, Surgeon General's Office, and indirectly from Maj. (later Lt. Col.) Walter E. Barton, MC (fig. 26).

While serving as Chief, Neuropsychiatric Service, Valley Forge General Hospital, Phoenixville, Pa., Major Barton had occasion to prepare recommendations concerning the requirements for treatment of psy-

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[8] Chairman: Mrs. John A. Greene, Director, Boston School of Occupational Therapy, Boston, Mass. Members: Miss Helen S. Willard, Director, Philadelphia School of Occupational Therapy, Philadelphia, Pa., Miss Marjorie Fish, Director, Occupational Therapy Course, Columbia University, New York, N.Y.

[9] Chairman: Mrs. Winifred C. Kahmann. Members: Miss Charlotte Briggs, Director, Occupational Therapy, Niagara Tuberculosis Sanatorium, Lockport, N.Y.; Miss H. Elizabeth Messick, District of Columbia Health Department, Washington, D.C.; Miss Margaret S. Rood, Chief Occupational Therapist, Cerebral Palsy Clinic, Indiana University Medical Center, Indianapolis, Ind.; Miss Virginia Scullin, Chief, Occupational Therapy, Pilgram State Hospital, Brentwood, N.Y.

[10] Progress Report, Subcommittees of the Occupational Therapy Conference, National Research Council, 20 Jan. 1943.

[11] Minutes, Fourth Meeting, Conference on Occupational Therapy, National Research Council, 2 June 1943.

[12] (1) Report, Subcommittee on Supplies, Equipment, and Staff Organization, Occupational Therapy Conference, National Research Council, 8 Oct. 1942. (2) Report, Subcommittee on Procurement and Classification of Personnel, Occupational Therapy Conference, National Research Council, 9 Oct. 1942.

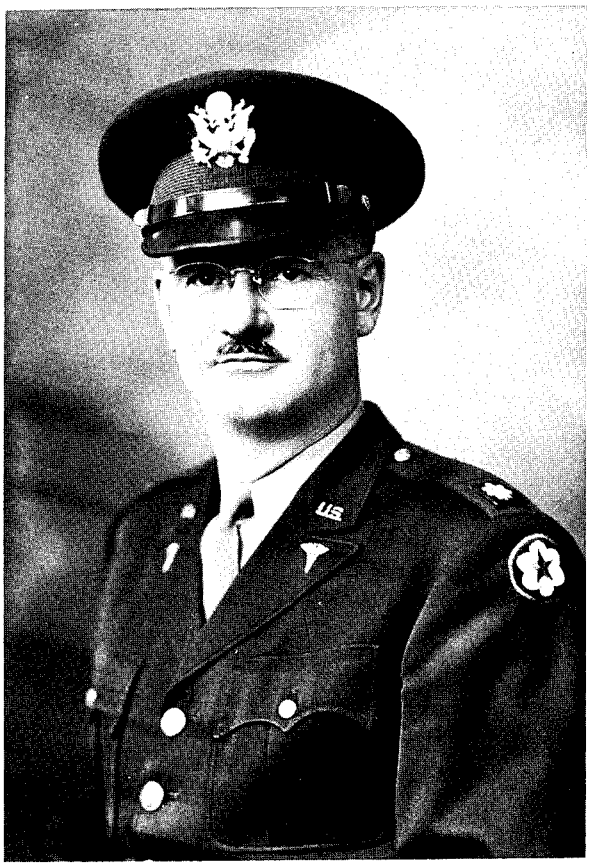


FIGURE 26—Lt. Col. Walter E. Barton, MC.

chiatric patients in an Army hospital for Col. Henry Beeuwkes, MC, the Commanding Officer. In his recommendations, Major Barton placed considerable emphasis on the need for developing a satisfactory program of occupational therapy. Colonel Beeuwkes forwarded the recommendations to the Surgeon General's Office where they were referred to Colonel Halloran, a strong advocate of occupational therapy. At Colonel Halloran's request, Major Barton was transferred from Valley Forge General Hospital to the Neuropsychiatry Branch, on 22 April 1943, to organize the occupational therapy service.[13]

Two of Major Barton's early achievements were the civil service reclassification of occupational therapists from the trades and industries section to the medical section and the restriction of appointments in the Army program either to graduates of accredited schools of occu-

[13] Memorandum, Lt. Col. Walter E. Barton, MC, to Director, Neuropsychiatric Consultants Division, 2 Nov. 1945, subject: Development of the Reconditioning Program Within the Activities of the Neuropsychiatric Consultants Division.

pational therapy or to those registered with the American Occupational Therapy Association.[14]

A Reconditioning Division, Surgeon General's Office, was established in July 1943, to direct an Army-wide program for reconditioning convalescent soldiers.[15] Major Barton was named director, on 19 August 1943, and the supervision of convalescent patient activities, including occupational therapy, was transferred from the Neuropsychiatry Branch to the new Reconditioning Division.

Continued development of the central organization initiated by Major Barton was assured by the appointment, on 18 November 1943, of Mrs. Kahmann (fig. 27) as chief of the newly established Occupational Therapy Branch, Reconditioning Division. She was extremely active in professional affairs on local and national levels and had contributed immeasurably to the development of Army occupational therapy. Mrs. Kahmann's duties were similar to those outlined previously for the directors of dietitians and physical therapists. To facilitate administration of the program, the Surgeon General's Office authorized the establishment of two positions in the Occupational Therapy Branch. Mrs. Kahmann's two assistants, Miss (later Capt.) Wilma L. West and Miss H. Elizabeth Messick, arrived on 6 June and 27 August 1944, respectively (fig. 28). When Mrs. Kahmann returned to Indiana in November 1945, Miss Messick was appointed chief and served in that position until August 1948.

Organizational Problems

The need for personnel was a problem common to the three professional groups. Their national organizations, like other professional organizations, gave the fullest cooperation and support to the Surgeon General's Office in the interest of obtaining qualified personnel, maintaining high professional work standards, and establishing training programs which would meet their criteria for accreditation or approval.

Because few, if any, of the newly appointed members of the specialist groups had previous experience with military organization or procedure, planning for orientation programs was necessary. Through these, a more immediate personal effectiveness and understanding in the work situations and relationships could be achieved.

Space was an acute problem in the physical and occupational therapy clinics. Because The Surgeon General at first did not have complete supervisory control over hospital construction in the Zone of Interior, many of the physical therapy clinics in new hospitals were entirely too small and required expansion almost as soon as they were operational. Physical therapy clinics were expanded in several of the old general

[14] The appointment provision precluded appointment of personnel considered by the Civil Service Commission to be qualified solely on the basis of experience and successful completion of the occupational therapy course offered to hospital attendants in a neuropsychiatric hospital of the Veterans' Administration. (U.S. Civil Service Examination, No. 11 (Unassembled)).

[15] Medical Department, United States Army. Organization and Administration in World War II. Washington: U.S. Government Printing Office, 1963, p. 213.

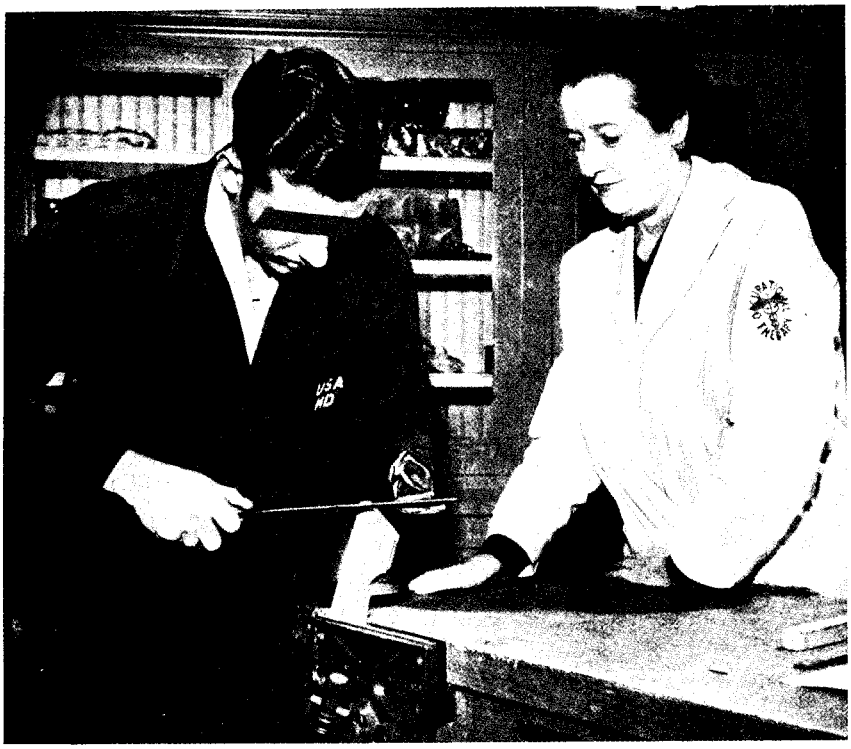


FIGURE 27—Mrs. Winifred C. Kahmann, OTR. (Photograph by Paul Schmick for the American Magazine.

and station hospitals. At Letterman General Hospital, San Francisco, Calif., a new building was constructed to house the gymnasium and electrotherapy sections. The new Fitzsimons General Hospital, Denver, Colo., opened on 16 December 1941, included a spacious and excellently equipped physical therapy clinic for clinical and teaching purposes.

The expansion program of medical facilities originally made no provision for space for occupational therapy. By 12 August 1943, when authorization for the program was effected,[16] space requirements had been estimated and clinic floor plans were available for use in new hospitals being constructed or in modification of existing space.[17]

A problem which was apparent early in occupational therapy was the function of the volunteer Red Cross worker as it related to the use of handicraft activity with convalescent patients. Even though the

[16] Circular Letter No. 149, Office of The Surgeon General, 12 Aug. 1943. This circular letter also listed the types of patients for which occupational therapy was indicated, stated the qualifications for appointment, indicated sources of equipment and supplies, specified departmental organization and administration, and prescribed general rules for occupational therapists.

[17] Clinic plans were prepared by Major Barton and the Hospital Construction Division, Surgeon General's Office, with the assistance of Mrs. Kahmann and Mrs. John A. Greene.



FIGURE 28—Assistants in the Occupational Therapy Branch, Reconditioning Division, Surgeon General's Office. (Left) Miss Wilma L. West, OTR. (Right) Miss H. Elizabeth Messick, OTR.

program was medically approved, it was not medically supervised. In 1944, the Surgeon General's Office determined that volunteer arts and crafts programs would be supervised by the department of occupational therapy wherever such a department existed.

This arrangement was most successful for it allowed expansion of occupational therapy in hospitals in the Zone of Interior and freed professional personnel for therapeutic work. The Red Cross Arts and Skills Corps programs were conducted in the majority of Zone of Interior hospitals during the war. While the strength of the corps grew almost tenfold from 1943 to 1946, 715 to 6,700 volunteers, the number of volunteer hours contributed was even more impressive, 39,233 to 681,888.[18]

REQUIREMENTS

Dietitians and Physical Therapists

The earliest requirements listed for dietitians and physical therapists overseas were contained in two 1940 tables of organization, No. 8–507,

[18] Annual Reports, Arts and Skills Corps, American National Red Cross, 1943–44, 1945–46.

General Hospital, and No. 8–508, Station Hospital. A single dietitian was listed as a requirement in T/O 8–232, Evacuation Hospital. [19] The ratio used was one qualified specialist to each 125 beds. Early in 1942, because of the shortage of personnel, the tables of organization were amended to authorize three dietitians and three physical therapists for each 500- to 1,000-bed station or general hospital.[20]

In 1943, the ratios for assignment purposes in the Zone of Interior varied from 1 each for every 150 to 250 patients. Additional personnel, however, were authorized for those hospitals conducting training courses for dietitians and physical therapists.[21] Later in 1944, because of the critical shortages of these specialists, it was necessary to reduce the ratio to three dietitians and two physical therapists for a 1,000-bed general hospital; two dietitians and one physical therapist for a 750-bed station hospital; and one each for a 500-bed station hospital. Because of the expanded treatment program generated by the establishment of convalescent hospitals in 1944, physical therapists were assigned to these programs in greater numbers than were the dietitians; for example, the ratio was 5 to 1 in a 1,500-bed hospital, 8 to 2 in a 4,000-bed hospital, and 12 to 3 in a 6,000-bed convalescent hospital.

Occupational Therapists

The estimated need for occupational therapists, as established by the Surgeon General's Office in 1941, was one for each 1,000-bed hospital. That this ratio was unrealistic was evidenced by a statement from the National Research Council's Subcommittee on Physical Therapy, on 6 September 1941, in which it was recommended that personnel quotas include "four to six occupational therapy aides in each thousand-bed Army general hospital." [22]

Surveys pertinent to occupational therapy were conducted by the Surgeon General's Office in August 1942,[23] and by the American Medical Association in early 1943.[24] The Surgeon General's Office survey, investigating the need for establishing occupational therapy sections in hospitals caring for neuropsychiatric patients, showed that

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[19] These three tables of organization were superseded by T/O's 8–550, 1 Apr. 1942; 8–560, 22 July 1942; and 8–580, 2 July 1942.

[20] Letter, The Surgeon General to Commanding Officers, All Theater Hospital Units, 23 Mar. 1942, subject: Civilians for Theater Hospital Units.

[21] (1) War Department Circular No. 99, 10 Apr. 1943. (2) War Department Circular No. 306, 22 Nov. 1943. In addition to other provisions, this circular authorized for each of the training courses one captain (unless a captain was already assigned), and one first and one second lieutenant. (3) For more detailed information, see: Medical Department, United States Army. Personnel in World War II. Washington: U.S. Government Printing Office, 1963.

[22] Minutes, Third Meeting, Subcommittee on Physical Therapy, Committee on Surgery, Division of Medical Sciences, National Research Council, 6 Sept. 1941, p. 58.

[23] Letter, Col. John A. Rogers, MC, Executive Officer, Office of The Surgeon General, to Commanding Generals, All Service Commands, 11 Aug. 1942, subject: Establishment of Occupational Therapy Sections in Hospitals Caring for Neuropsychiatric Patients.

[24] Letter, M. G. Westmoreland, M.D., Council on Medical Education and Hospitals, American Medical Association, to Maj. Walter E. Barton, MC, Office of The Surgeon General, 18 Aug. 1943.

such facilities then existed in 5 Army hospitals and were recommended for 50 additional hospitals by the commanding generals of the service commands. The American Medical Association survey, investigating the civilian need for occupational therapists, indicated a range "from approximately 400 occupational therapists this year to 660 or more." [25]

When occupational therapy programs were established in Army hospitals in 1943, there were insufficient personnel on which to base recommendations for strength authorizations. By June 1945, it was possible to set a strength ratio of one occupational therapist per 250 authorized beds.[26]

PROFESSIONAL QUALIFICATIONS FOR APPOINTMENT

Dietitians

Initially, the qualifications for dietitians remained the same as during the peacetime period; namely, completion of a 4-year course leading to a bachelor's degree from a college or university of recognized standing with major study in dietetics and, in addition, the successful completion of a training course for dietitians approved by The Surgeon General.

In September 1942, because of the increased need for dietitians, the experience requirements were broadened. In lieu of completion of an approved training course for dietitians, an applicant could substitute for each 6 months of training, 1 year of successful experience (within the past 10 years) as a dietitian in a hospital of at least a 200-bed capacity. This experience had to include diet therapy, planning of nutritionally adequate menus, supervision of employees, food preparation and service, ordering of food supplies and equipment, and food cost control. This change met the requirements for membership in the American Dietetic Association. When dietitians were given military status in 1943, the length of experience qualification was changed to 2 years.

Physical Therapists

The professional qualifications for the physical therapists were essentially the same for both civilian and military status. Required of the applicants was completion of not less than 2 years (60 semester hours) in an approved college with emphasis on physical education or biological sciences or graduation from an accredited course in nursing (table 5) and, in addition, completion of a physical therapy training course approved by The Surgeon General. Waivers for age and education were granted in the case of a few outstanding physical therapists whose appointments were recommended by The Surgeon General.

[25] The survey was based on requests for occupational therapists which had been received in a 1-year period, 1 April 1942 to 1 April 1943, by schools of occupational therapy.

[26] See footnote 13, p. 106.

TABLE 5—*Tabulation of age and educational background of physical therapists, 31 October 1945*

Prerequisite education	Age					Total
	—28	28–31	32–39	40–44	45+	
B.S. or B.A. degree:						
Physical education	339	115	177	58	11	700
Biology	37	14	18	6	2	77
Specialty not listed	86	42	53	13	2	196
College:						
3 years	39	4	3	1	0	47
2 years	68	7	10	7	1	93
Registered Nurse	15	20	61	21	6	123
Irregular	42	10	17	8	3	80
Total	626	212	339	114	25	1,316

Source: Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army. [Official record.]

Occupational Therapists

Qualifications for the occupational therapists required that they be graduates of a school of occupational therapy approved by the American Medical Association or occupational therapists registered by the American Occupational Therapy Association. To be appointed a senior occupational therapist, one or more years of experience, following graduation, in the administration of occupational therapy under medical supervision was required.

PROCUREMENT

Having had no military status in the regular Military Establishment, there were no Reserve dietitians, physical therapists, or occupational therapists who could be called to active duty. The needed professional personnel had to be attracted from their civilian positions. They were penalized if they accepted appointments in the Army on a nonmilitary basis as they could not secure military leaves of absence.

The increase in numbers of civilian dietitians from 45 in 1938 to approximately 800 by March 1943 and the increase in physical therapists for the same period from 35 to 354 resulted from a combination of procurement and publicity activities by Major Burns, Major Vogel, the Red Cross, the National Research Council,[27] the national professional organizations, and the Civil Service Commission.

These agencies also assisted Major Barton in his procurement drive for occupational therapists, but the results were less spectacular. Forty-three occupational therapists were on duty in Army general hospitals when Mrs. Kahmann was appointed in November 1943. The need was estimated at 300. In her first 2 months, because of her Irish persuasiveness and personal acquaintance with occupational therapists, she was able almost to double the number of occupational therapists on

[27] The Subcommittee on Physical Therapy, Committee on Surgery, Division of Medical Sciences, National Research Council, was formed in 1940.

duty. In the next 6 months, the number was again doubled, thus increasing the total on duty to 180.[28]

American National Red Cross

In April 1939, the Red Cross, upon the request of The Surgeon General, began an enrollment program to build up a reserve listing of medical technologists who would be available for military service in the event of mobilization.[29] The dietetic, physical therapy, and occupational therapy national organizations encouraged their members to enroll with the Red Cross.

The American Occupational Therapy Association requested that the educational qualification for enrollment be changed because it stipulated graduation from a 25 calendar-month training course. Although this conformed with the new educational standards established by the American Medical Association in 1936, the first students to graduate from the program did not do so until 1939; thus, enrollment with the Red Cross was limited to barely 50 of the 1,200 occupational therapists then on the Occupational Therapy Association's membership rolls.[30] The Association suggested, therefore, that the qualification be changed to read: "Graduates from an accredited school of Occupational Therapy, Registered Occupational Therapists, and those eligible for registration in the American Occupational Therapy Association." The Surgeon General, however, did not deem it advisable to change the requirements. His reasons were, as follows:[31]

> The number of these people who will be required by the Army is not very great and their services will probably not be required immediately on mobilization. By allowing the requirements to stand as they are we will be in conformity with the American Medical Association and be in a position to obtain the services of the best trained people in this group.

During the pre- and early-World War II period, some members and 8 of the 19 affiliated groups of the American Occupational Therapy Association formally protested not only the enrollment program, "until the status of the occupational therapist has been cleared up," but also the exclusion of occupational therapists from legislation proposed to grant commissioned status to the dietitians and physical therapists.[32]

The August 1940 report of the Red Cross enrollment program showed that less than 3 percent enrollment had been effected from

[28] Annual Report, Reconditioning Division, Office of The Surgeon General, 1943–44, Occupational Therapy Section, pp. 4, 8.

[29] See footnote 7, p. 104.

[30] Memorandum, Board of Managers, American Occupational Therapy Association, for The Surgeon General, 19 Mar. 1940, subject: Enrollment by the Red Cross for Occupational Therapists.

[31] Letter, Col. Albert G. Love, MC, Office of The Surgeon General, to Mr. H. B. Atkinson, Director, Enrollment of Medical Technologists, American Red Cross, 2 Apr. 1940.

[32] (1) Correspondence files, "Military Procurement for Occupational Therapy, 1940–43." Archives of American Occupational Therapy Association, New York, N.Y. (2) Affiliated groups who filed protests were the District of Columbia, Hawaii, Illinois, Massachusetts, Michigan, Missouri, New Jersey, and New York Occupational Therapy Associations.

5,704 mail announcements to the three groups: 90 dietitians, 32 physical therapists, and 8 occupational therapists.[33]

Civil Service Commission

In December 1940, in order to expedite appointments, authority to procure and assign civilian personnel was decentralized to the civil service districts. Operational control of civilian personnel was also decentralized to the commanding generals of the service commands. Even though the professional qualifications for appointment as a dietitian, physical therapist, or occupational therapist were clearly stated by the Civil Service Commission, those standards were often not observed by the appointing agency. Procurement and assignment were sometimes made by persons who had no knowledge of the professional background and duties of the three specialty groups. This produced a situation which invited much criticism and adversely affected the procurement of qualified personnel.

Pending the establishment of a register of qualified dietitians, many who were not qualified were appointed on a temporary basis. They had no training in the planning of therapeutic diets and management of hospital kitchens, so they willingly performed the work of cooks and mess attendants to the detriment of the professional standards of the group as a whole.

Even though the registers compiled by the Civil Service Commission were used as a source of qualified physical therapists, individuals were appointed and assigned who did not meet the educational standards established by the Surgeon General's Office. The Civil Service Commission believed that, since a sufficient number of qualified physical therapists were not available, the Medical Department should be willing to employ whoever was available. Another area of difficulty arose from the assignment of experienced physical therapists to positions where they were under the supervision of less experienced physical therapists. This resulted in unhappiness and discontent. By October 1942, The Surgeon General was again given centralized authority to procure, assign, and train dietitians and physical therapists.[34]

The Surgeon General assisted in the procurement of occupational therapists through the Civil Service Commission by forwarding names of eligible qualified therapists available for appointment of the commanding generals of the service commands. If a service commander desired to make a direct appointment of an occupational therapist whose name had not been submitted, concurrence was obtained from The Surgeon General.[35] That this procedure was not always followed is evidenced by a restatement of this policy in an April 1944 directive.[36]

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[33] Report, Enrollment of Medical Technologists, American Red Cross, 31 Aug. 1940.
[34] Memorandum, The Adjutant General, for Commanding Generals, All Service Commands, 24 Oct. 1942, subject: Dietetic and Physical Therapy Personnel in Army Hospitals.
[35] See footnote 16, p. 108.
[36] Army Service Forces Circular No. 118, 28 Apr. 1944.

Officer Procurement Service

In June 1943, recruitment of dietitians and physical therapists was assumed by the Officer Procurement Service, Army Service Forces. Since this organization was designated by the War Department as the procuring agency for other officers and had district offices established in many large cities, the procurement of these groups entailed only a few additional responsibilities.

The resulting increase in dietitian appointments was encouraging. By December 1943, 330 additional dietitians had been commissioned. Because of the limited number of physical therapists available from civilian sources, the number appointed through the efforts of the Officer Procurement Service during the war period was only 256.

In 1944, the number of appointments decreased because most of those who were interested had been appointed. The organization had, however, performed an outstanding service through its well-organized publicity program. People in the United States had been made aware of the terms "dietitian" and "physical therapist" and the acute need for these qualified specialists in the Army. This publicity was especially beneficial as training programs were expanded in an effort to meet the mounting requirements for personnel.

In September 1944, the ceiling for dietitians was 1,500 and for physical therapists, 1,000. By 30 May 1945, although requirements had been calculated as 2,303 for dietitians and 1,770 for physical therapists, only 2,150 dietitians and 1,700 physical therapists were authorized by the War Department.[37]

Training Programs

The national shortage of qualified personnel necessitated expansion of the dietitian and physical therapist training programs and the establishment of a program for training occupational therapists. (See Chapter VI, pp. 137–182.) With the exception of five enlisted members of the Women's Army Corps who had participated in the apprentice dietitian program, all of the dietitian and occupational therapy trainees were procured through civil service appointment. The physical therapy trainees were either civil service appointees or enlisted members of the Women's Army Corps.

APPOINTMENT, PROMOTION, AND CLASSIFICATION

Dietitians and Physical Therapists

Under the act of December 1942 (Public Law 77–828), all initial appointments, with the exception of those of the director of dietitians and the director of physical therapists, were made in the grade of second lieutenant, regardless of the amount of civilian or military

[37] See footnote 21(3), p. 110.

experience. By May 1943, promotion boards had been appointed in the Surgeon General's Office to act on all recommendations for promotion of dietitians and physical therapists in accordance with the number of spaces available.

To be eligible for promotion to the grade of first lieutenant required 18 months of satisfactory service with the Medical Department and recommendation by the individual's commanding officer. Eligibility for promotion to captain also required a recommendation from the commanding officer and 8 years of experience as a dietitian or physical therapist. Five of those years had to be spent in Army service with two of them in an administrative capacity.

Since the number of captain spaces was so limited, the chief dietitians and physical therapists in Army hospitals conducting training programs were given priority in promotion. Originally, the percentage of spaces established by the Surgeon General's Office, in January 1943, limited captain spaces to 1 percent and first lieutenants to 15 percent of the total number appointed. By May 1944, appointments of first lieutenants exceeded the limitation by 7 percent, and by December 1944, appointments in the grade of captain were in excess of the limitation by less than 0.5 percent.[38]

Originally, all promotions, except those made overseas, were approved by The Surgeon General upon the recommendation of the promotion boards. After full military status in the Army of the United States was authorized in June 1944, promotions were made in the service commands as they were for all other officers. After June 1946, when Army Service Forces was abolished, promotion boards were again established in the Surgeon General's Office and final approval on promotions given by that office.

Promotions overseas were accomplished in the same manner as in the Zone of Interior, except for the provision pertaining to length of service in grade. In determining time in grade for this purpose, service outside the continental limits of the United States or in Alaska was counted as time and a half. Promotion overseas to the grade of first lieutenant should have been more rapid than in the Zone of Interior. Exceptions, however, sometimes occurred. For instance, few received promotions during the period of deployment. It was also true that some were not promoted because frequent transfers sometimes precluded the 3-month assignment period required to establish eligibility for promotion. This same frequency of move was experienced by commanding officers, and some, since they had no opportunity to become familiar with the capability of the individual, did not recommend promotion.

The appointment in the grade of second lieutenant and the promotion on length of military service failed to give some individuals credit for their experience in civilian hospitals. Early in the war, many young dietitians and physical therapists volunteered for service and were soon

[38] See footnote 21(3), p. 110.

promoted to positions of responsibility in Army hospitals. For those older and more experienced persons who entered the service later in the war, promotions to the higher grades were not possible. Terminal promotions to the grades of first lieutenant and captain were authorized at separation centers for officers who had completed the specified length of service for the grade at the time of separation.

Occupational Therapists

Army occupational therapists appointed in the 1941–45 period were given civil service ratings of SP–5, staff occupational therapist, and SP–6, senior occupational therapist. Yearly salaries for these positions were $1,800 and $2,000, respectively. The subprofessional classification had been assigned in 1938 when professional training was not a requirement for the civil service occupational therapist. Since the Medical Department had included professional education and training in its qualifications for occupational therapists in 1943 to conform to current standards of practice, the necessity for a change in classification from subprofessional to professional was apparent.

This action was particularly important in view of the proposal of the Civil Service Commission that experience be substituted for education as a requirement for appointment of graduate and student occupational therapists. This proposal was occasioned by a provision of the Veterans' Preference Act of 1944: [39]

> * * * No minimum educational requirement will be prescribed in any civil-service examination except for such scientific, technical, or professional positions the duties of which the Civil Service Commission decides cannot be performed by a person who does not have such education.

The burden to prove that occupational therapists should have professional classification fell on the Surgeon General's Office. Achievement of the classification would preclude the selection and appointment of persons who did not meet professional education requirements.

Accordingly, an analysis of the duties and responsibilities of occupational therapists was made at the Thomas M. England General Hospital, Atlantic City, N.J., by representatives of the Secretary of War (Civilian Personnel Division) and The Surgeon General. These representatives then proposed the following changes in classification: [40] Occupational therapist, P–1, $2,320 yearly (staff assistant); occupational therapist, P–2, $2,980 yearly (unit supervisor and/or assistant to head occupational therapist in general or convalescent hospital); occupational therapist, P–3, $3,640 yearly (chief occupational therapist in general or convalescent hospital center); occupational therapy consultant, P–4, $4,300 yearly (service command headquarters).

[39] Public Law 359, 78th Congress, 2d Session, 27 June 1944, also known as the Starnes-Schrugham Act.

[40] Letter, Col. Robert J. Carpenter, MC, Executive Officer, Office of The Surgeon General, to Office, Secretary of War, Civilian Personnel Division, attention: Salary and Wage Administrative Branch, 28 June 1945, subject: Classification of Occupational Therapist Positions.

On 2 July 1945, the Secretary of War approved publication of the new standards as official guides for the allocation of occupational therapist positions. He also said, "The Surgeon General's Office is to be commended for this valuable contribution to the War Department classification program and is to be encouraged in the continuation of this work." [41] One month later, The Surgeon General distributed the new standards to the commanding generals of the nine service commands and requested that all positions be reclassified on or before 1 September 1945.[42]

STRENGTH

Of the 800 dietitian and 354 physical therapist civilian employees on duty in Army hospitals before 31 March 1943, 565 dietitians and 279 physical therapists accepted appointments in military status.[43] Peak strength was reached in mid-1945 when the dietitians numbered 1,580 and the physical therapists, 1,300.[44]

The distribution of World War II assignments for the dietitians and physical therapists is best illustrated by the record of the physical therapists. On V–J Day, physical therapists in the United States were on duty in 66 general, 54 regional, 66 station, and 23 convalescent hospitals.[45] By early 1947, this number had been reduced to 14 general and 54 station hospitals. The oversea units to which physical therapists were assigned were 219 general, 101 station, and 4 convalescent hospitals, and 1 field hospital. By 1 August 1946, oversea assignments were reduced to 14 general and 28 station hospitals.

The peak strength, 899, for the occupational therapists was not reached until 1945. This number included 452 apprentices who were in clinical training and 447 graduate therapists. Of this number, only 200 had volunteered their services to the Army. The remainder were graduates of the War Emergency Course. By V–J Day, occupational therapists were assigned in 76 general and convalescent hospitals.[46]

In the early forties, the position of civilian physical therapist was available to both men and women.[47] In accordance with Public Law 77–828, the position of civilian physical therapist was terminated on 31 March 1943.[48] At that time, there were a few male physical

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[41] Letter, Vernon G. Mickelson, Civilian Personnel Division, Office of the Secretary of War, to The Commanding General, Army Service Forces, 2 July 1945, subject: Classification of Occupational Therapist Positions.

[42] Letter, The Surgeon General, to Commanding Generals, All Service Commands, 2 Aug. 1945, subject: Standards for the Allocation of Graded Positions.

[43] (1) Manchester, Katharine E.: History of the Army Dietitian. [Official record.] (2) Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army. [Official record.]

[44] See footnote 21(3), p. 110.

[45] See footnotes 1, p. 101 and 43(2), p. above.

[46] West, W. L.: The Future of Occupational Therapy in the Army. Am. J. Occup. Therapy I: 89–91, March-April 1947.

[47] Circular Letter No. 8, Office of The Surgeon General, 10 Feb. 1941.

[48] Medical Department requirements for continuous service of dietitians and physical therapists from 22 December 1942 to 31 March 1943 precluded the granting of annual leave accrued prior to their acceptance of commissions under Public Law 77–828. It was first thought that these individuals would be protected under the Act of 1 August 1941 which provided that civilian

therapists employed in Army hospitals in the Zone of Interior. Since they did not come under the provisions of this law, which pertained only to female officers, they were assigned as enlisted men.

OVERSEA ASSIGNMENTS

Because of their civilian status, only those dietitians and physical therapists who volunteered could be sent overseas. This was true even before the war for those who had been assigned to Tripler General Hospital, T.H., Schofield Barracks Station Hospital, T.H., and Sternberg General Hospital, Manila, Philippine Islands. The affiliated hospital units organized early in the war by civilian hospit ls and medical schools often recruited their volunteers from among the dietitians and physical therapists on their staffs. In order that there would be no delay in activating affiliated units, The Surgeon General had the authority to make direct appointment of such individuals provided they met all qualifications and initiated applications for civil service appointment as soon as practicable.

Occasionally, vacancies occurred in hospital units when they were called to active duty. These were filled, if possible, by The Surgeon General before the unit departed for overseas. Some of the last-minute requests were filled by personnel on duty in the training pools which had been established for both the dietitians and physical therapists in several general hospitals.[49]

Another source of dietitians for oversea assignment was the enrollment program of the Red Cross. The Civil Service Commission granted authority for The Surgeon General to appoint dietitians who were enrolled to fill the vacancies in the oversea hospital units.

In June 1942, additional dietitians were classified as eligible for assignment to hospital units. These were qualified dietitians from other governmental agencies or those who had passed an appropriate civil service examination and who volunteered for oversea duty as an initial appointment.[50]

The remainder of the vacancies for dietitians in hospital units were filled from the oversea volunteer list maintained in the Surgeon General's Office. Later, many civilian-trained dietitians volunteered after they had gained experience in the Army.

In 1942 and 1943, some oversea hospitals left the United States lacking physical therapists. In such instances, a limited physical therapy program was temporarily carried on by nurses and enlisted personnel.

Federal employees entering the military service would receive pay for all leave accumulated to them while in the civilian status.

The Comptroller General, however, ruled (B33305-1943) that, inasmuch as the position of civilian dietitian and physical therapist was terminated by Public Law 77–828, there existed no provision of law by which the compensation for accrued leave could be accomplished. Loss of this compensation constituted a hardship in many cases. A bill to authorize the payment of such leave was later introduced in the 79th Congress and was passed as Public Law 500 on 11 July 1946.

[49] Circular Letter No. 34, Office of The Surgeon General, 16 Apr. 1942.

[50] See footnote 43(1), p. 118.

In 1944, after physical therapists became available in greater numbers, they were sent overseas in groups to be assigned to hospitals which had embarked without them and to hospitals which had suffered losses due to attrition.

In some instances, physical therapists were employed locally to supplement the Army physical therapy staff. Three were so employed in Hawaii, seven in Australia, and an unknown number in England. There is no information available as to the total number of local physical therapists employed, but they contributed materially to fill the gap until more Army physical therapists arrived.

One oversea assignment problem was that frequently rush calls were put through for dietitians and physical therapists to join oversea units supposedly ready to embark. Weeks or months later, the unit concerned might still be in the staging area. These ill-timed assignments sometimes resulted in time spent in field training when a fixed installation nearby could have utilized them to their greatest professional advantage.

During the war, dietitians and physical therapists were assigned in every theater or area of operations. With the cessation of hostilities, hospital activities reverted to a peacetime status and the oversea requirement for dietitians and physical therapists was markedly reduced. On V–E Day, there were approximately 780 dietitians and 570 physical therapists on duty in all oversea theaters; 1 year later, these numbers had dropped to 125 dietitians and 70 physical therapists.[51]

PRISONERS OF WAR

In April 1943, at the time of the changeover from civilian to military status, three dietitians, Miss (later 1st Lt.) Ruby F. Motley, Mrs. (later 1st Lt.) Anna Bonner Pardew, and Mrs. (later 1st Lt.) Vivian G. Weissblatt, and one physical therapist, Miss (later Maj.) Brunetta A. Kuehlthau, were Japanese prisoners of war interned at Santo Tomas Internment Camp, Manila, Philippine Islands.[52] Misses Motley and Kuehlthau had been assigned to Sternberg General Hospital since early 1940. Mrs. Weissblatt, wife of a United Press correspondent, and Mrs. Pardew, a former Army dietitian, who were living in Manila, had been employed immediately after the bombing of Pearl Harbor to assist in the care of the increased number of casualties.

Since civilian status had been terminated as of 31 March 1943 under the provisions of Public Law 77–828, Maj. Gen. Jay L. Benedict, President of the War Department Dependency Board, recommended that these internees be tendered military appointments. It was, however,

[51] (1) Monthly strength record maintained by Dietitian Branch, Surgeon General's Office, May 1943–July 1948. (2) See footnote 43(2), p. 118.

[52] Miss Mary McMillan, first physical therapist appointed in the Army in World War I, was in Manila early in December 1941 and was also interned at Santo Tomas. She did volunteer work in the prison camp until she was repatriated in September 1943.

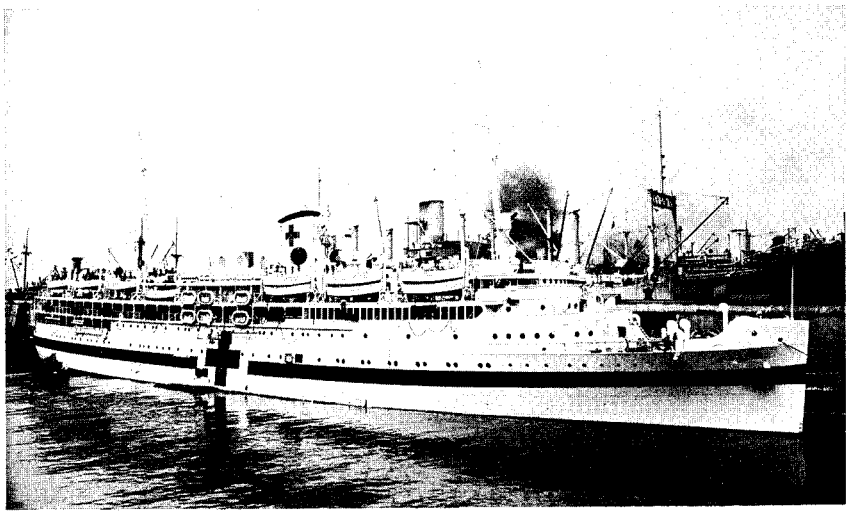


FIGURE 29—USAHS *Acadia*. (U.S. Army photograph.)

the opinion of the Judge Advocate General's Office, on 17 May 1943, that "The War Department would not be justified in appointing these employees under revised regulations in the A.U.S. [Army of the United States] and necessarily without their knowledge and consent." [53] One year later, The Surgeon General was authorized to tender appointments as second lieutenants to the four internees. As the letters of appointment could not be forwarded to these individuals for security reasons, they were retained in the Surgeon General's Office. All four accepted their appointments upon liberation, on 3 February 1945, and were subsequently promoted to the grade of first lieutenant.

HOSPITAL SHIPS

During World War II, 27 hospital ships were in operation for the evacuation of U.S. Army casualties. The Navy Department operated 3 and the War Department operated 24. The first ship to be operated as a hospital ship was the newly converted USAHS *Acadia* (fig. 29); one dietitian and two physical therapists were assigned on her maiden voyage, on 5 June 1943, to North African ports. Inasmuch as military status had been achieved by that time, authorizations were filled through normal assignment procedures and the necessity to use volunteers was obviated. The USAHS *Seminole* was the only other ship on which a physical therapist was assigned.

When the *Acadia* returned to the United States with her first complement of war casualties, it was learned that the physical therapists' activities had been exceedingly limited because of lack of space and

[53] See footnote 43(1), p. 118.

equipment and that excessive motion of the ship made bedside treatment difficult. In view of the acute shortage of physical therapists, it was The Surgeon General's opinion that their services could be better utilized in Zone of Interior hospitals. The *Acadia* had already departed for her second trip when this decision was announced, but on her return, the physical therapists were reassigned and their positions were deleted from the tables of organization for hospital ships.

There were only two hospital ships in which dietitians did not serve, the USAHS *John L. Clem* and the USAHS *Ernest Hinds.* During the course of the war, 42 dietitians were assigned to hospital ships; the greatest number assigned at one time was 27. Eleven dietitians had tours in two or more hospital ships. A second lieutenant was authorized for ships carrying 400 to 700 patients, a first lieutenant for those carrying 800 to 1,000 patients, and a first and a second lieutenant for those carrying 1,500 patients.

Hospital ships were not authorized spaces for occupational therapists nor supplies and equipment for such a program. By June 1944, it was recognized that, although the arts and crafts materials selected for use with regular troops were "suitable for the ordinary patients," ships' chaplains reported that psychiatric patients needed specialized equipment.[54] The Army Service Forces, Special Services Division, therefore, suggested to The Surgeon General that a special kit be prepared for use by ships' chaplains "when mental cases are present." In view of his previously established policy that occupational therapy (personnel, supplies, and equipment) would be authorized only for Zone of Interior programs, and that arts and crafts activities on hospital ships and in oversea hospitals were the responsibility of the Red Cross, The Surgeon General advised the Special Services Division that the Red Cross would furnish special supplies.

ESTABLISHMENT OF CONSULTANT POSITIONS

As programs expanded, it became evident that adequate field supervision could not be exercised from the Surgeon General's Office. Both in headquarters of service commands and in oversea theaters, there was a need for consultants to recommend assignment of qualified personnel so that they could be utilized most efficiently, to facilitate promotions and transfers, to maintain high professional standards, to interpret policy, and to accomplish better coordination with other professional services.

Service command consultants were authorized for occupational therapy in March 1944,[55] and by November 1944, appointments had been made as follows: Second Service Command, Miss Elizabeth Smedes;

[54] Letter, Lt. Col. Frederick M. Warburg, AGD, Chief, Athletic and Recreation Branch, Special Services Division, Headquarters, Army Service Forces, to Col. Augustus Thorndike, Office of The Surgeon General, 12 June 1944, subject: Occupational Therapy Kits for Transports, with 1st indorsement thereto, 13 July 1944.

[55] Army Service Forces Circular No. 73, 11 Mar. 1944.

Third Service Command, Miss Rhoda D. Lester; Fourth Service Command, Miss Mary Reilly; Eighth Service Command, Miss Jane E. Mayers; and Ninth Service Command, Miss Hulda A. Steinmesch. One of the most critical problems facing these consultants was coordination of the apprentice training programs to be given in 40 Army hospitals. In November and December, 100 students were assigned to complete the clinical phase of their training and additional students were to follow in subsequent months. Although training outlines were available, coordination through the consultants was essential if uniform and comprehensive programs were to be conducted.

Although Major Burns and Major Vogel had requested that dietitian and physical therapist consultants be assigned to service command headquarters in 1944, these requests were not approved until June 1945.[56] Letters recommending consideration of the establishment of these positions were sent to each service command headquarters. This was not a mandate; Headquarters, Army Service Forces, did not dictate that these positions be established, but left the authorization to each service command. Subsequently, Capt. (later Col., USAF) Miriam E. Perry, dietitian, and Capt. Lois Ransom, physical therapist, were assigned to Headquarters, First Service Command, and Capt. Mary Rose Conway, dietitian, and Capt. (later Maj.) Felie Clark, physical therapist, were assigned to Headquarters, Second Service Command. In some service commands, supervision of physical therapy activities was satisfactorily accomplished by orthopedic consultants and assignment of a physical therapist was not considered necessary.

Early in 1945, when Major Burns and Major Vogel made a 3-month visit to more than 70 hospitals in the European and Mediterranean (formerly North African) Theaters of Operations, U.S. Army, they acquired firsthand knowledge of the difficulties which their personnel encountered. One of the major problems they found was that their personnel were assigned by officers who were familiar with neither the capabilities of the individuals nor with the requirements of the two specialized fields involved. Another problem frequently encountered was the lack of opportunity for dietitians and physical therapists to communicate with others in the same field. Many of these specialists were assigned singly in hospitals and the distances and workloads precluded any exchange of ideas or information.

Before leaving the European theater in March 1945, Major Burns and Major Vogel conferred with Maj. Gen. Paul R. Hawley, Chief Surgeon, European theater (fig. 30), and recommended the immediate assignment of a representative of each group to his office. This was approved and, within a short time, Capt. (later Maj.) Myrtle Aldrich, dietitian, and Captain Beatty, physical therapist, were assigned. Because of the decrease in military activity in the Mediterranean theater, there was no need for consultants at that time.

[56] (1) Quarterly History of Medical Department Dietitians, 1 June–30 Sept. 1945, pp. 2–3. (2) See footnote 43(2), p. 118.



FIGURE 30—Visit to European Theater of Operations, U.S. Army, March 1945. (Left to right) Maj. Helen C. Burns, Director of Dietitians, Surgeon General's Office, Maj. Gen. Paul R. Hawley, Chief Surgeon, European Theater, and Maj. Emma E. Vogel, Director of Physical Therapists, Surgeon General's Office.

Authority was given in May 1945 to provide one dietitian and one physical therapy consultant in the grades of captain to Headquarters, U.S. Army Forces in the Pacific.[57] To provide these spaces, the bulk

[57] (1) Quarterly History of Medical Department Dietitians, 1 Apr.–31 May 1945, p. 3. (2) See footnote 43(2), p. 118.

overhead allotment for nurses was reduced. In November 1945, Captain Mitchell, dietitian, and Capt. (later Lt. Col.) Edna Lura, physical therapist, were assigned to the Office of the Surgeon, Far East Command, and 1st Lt. Rosemary Rajkowski, dietitian, and Capt. (later Maj.) Emma T. Harr, physical therapist, were assigned to a similar office in the Middle Pacific Command. These officers were very helpful in solving the many problems associated with the inactivation of hospitals and reassignment and separation of their personnel.

REDEPLOYMENT

After V–E Day, many problems arose in the European and Mediterranean theaters regarding redeployment of Medical Department personnel. Some hospital units were to be shipped directly to the Pacific areas, some were to return to the United States for inactivation or restaffing and subsequent reshipment to the Pacific, and others were to remain in support of the army of occupation. At the same time, it was essential to return those dietitians and physical therapists who could be spared to general hospitals in the Zone of Interior to assist in the care of casualties being returned from all theaters and areas.

Much of the planning for personnel actions was based on the adjusted service rating score.[58] This score was computed (on a weighted point system) for all military personnel on the basis of previous service. In determining this score for dietitians and physical therapists, the Judge Advocate General stated that only commissioned service under the provisions of Public Laws 77–828 and 78–350 could be so credited.

The efficiency of the redeployment program as applied to dietitians and physical therapists was demonstrated in both major oversea theaters. In May 1945, there were 464 dietitians and 358 physical therapists on duty in the European theater; by May 1946, only 48 and 25 of the respective groups remained. In the combined Pacific areas, for the same periods, the dietitians decreased from 200 to 60 and the physical therapists from 147 to 42.[59]

Armies of Occupation

With the cessation of hostilities in both the European theater and in the Pacific areas, hospital activities reverted to a peacetime basis. Emphasis in patient care in the armies of occupation shifted from treatment of combat injuries to the illness and injuries incidental to normal activities of a military population. As a result, requirements for dietitians and physical therapists were markedly reduced. This reduction is borne out by the redeployment figures given previously.

The army of occupation hospitals were generally located in former military or civilian hospitals. When these were not available, other

[58] See footnote 21(3), p. 110.
[59] See footnotes 43(2), p. 118; and 51(1), p. 120.

civilian or military facilities were converted for hospital use. In both areas, the hospitals which were taken over were usually permanent installations, well equipped, and well constructed. The military facilities in Germany which were converted to hospital use were barracks-type with no elevators, no hot water on the wards, and no connecting ramps or tunnels between the buildings. These posed a problem to dietitians when the central dishwashing and food cart washing rooms were located in the messhall area, usually a block or two away from the wards.

For army of occupation personnel in Europe, the year following V–E Day was a period of continual adjustment to the situation brought about by deployment. Many troops left the theater during the first 6 months which resulted in the closing or moving of hospitals. The hospitals which were not closed had a constant shifting of personnel during the last 6 months. The movement of hospital units to the Pacific areas also created a shifting of personnel as it made possible the rotation to the United States of those with long months of oversea service.

Demobilization

The problems concerned with the demobilization of an expanded military force were numerous and involved.[60] When relieving officers from active duty, it was the desire of the War Department to give every possible consideration to the wishes of the officer concerned and to utilize to the maximum the services of officers who desired to continue on active duty. The separation of Medical Department personnel involved problems, however, which were not pertinent to other military personnel. Hospitals could not summarily close their doors and send their patients home. Since consideration had to be given to the continued care of patients, the need for specialists did not lessen as quickly as did the need for combat-trained soldiers.

Just as standards were established for eligibility to enter the military service, so standards were established to determine eligibility to leave the service. Separation criteria established for the dietitian and physical therapist were based primarily on five factors: (1) Age, (2) the adjusted service rating score, (3) marital status, (4) dependent children under 14 years of age, and (5) the officer's efficiency index. These criteria were adjusted at different times during the demobilization period to either retard or accelerate separation (table 6) as indicated by the overall fluctuating needs. At the same time, all officers were given an opportunity to state their willingness to continue on extended active duty. This was done by their signing various types of commitments established by the War Department.[61] In addition, there

[60] (1) For detailed information on Army-wide demobilization, see: Sparrow, John C.: History of Personnel Demobilization in the United States Army. Washington: U.S. Government Printing Office, 1952. (DA Pamphlet 20–210.) (2) See footnote 21(3), p. 110.

[61] War Department Circular No. 366, 7 Dec. 1945.

were other criteria which governed the separation of officers; that is, surplus to the needs of the service; essential to national health, safety, or interest; undue hardship; and age.

In September 1946, an Army Nurse Corps officer was assigned to each of the 22 separation centers in the United States to act as counselor for Medical Department female officers. This assignment filled an urgent need as there had been numerous complaints that female officers returning from overseas were "sort of pushed around," as one officer stated, and given very little information relative to their rights or privileges under the GI bill of rights.

TABLE 6—*Effect of demobilization for dietitians and physical therapists, 31 August 1945 to 30 June 1947*

Date	Number on duty	
	Dietitians	Physical therapists
31 Aug. 1945[1]	[2]1,580	[2]1,300
31 Dec. 1945[1]	995	940
31 June 1946[1]	526	552
31 Dec. 1946[3]	412	420
30 June 1947[3]	298	308

[1] Figures from Medical Department, United States Army. Personnel in World War II. Washington: U.S. Government Printing Office, 1963, p. 15.
[2] Peak strength.
[3] Figures from quarterly reports, Dietitian and Physical Therapy Branches, Military Personnel Division, Surgeon General's Office.

Many of the female officers who had married during the war desired to leave the service to establish their homes. Others were anxious to return to civilian life, not entirely because of a dislike of the service but rather because of the uncertainty of a future career in the military. Those returning from overseas were particularly aware of the need for permanent military status to assure a career with professional satisfaction. Also, the services of some who arrived overseas late in the war were never fully utilized because of cessation of hostilities in the particular area where they were assigned, and, for this reason, they assumed that their services were no longer needed.

Many experienced administrative dietitians had become disillusioned about their professional work in the military service when they found themselves working under untrained mess officers who did not permit them to apply their knowledge and training to the maximum extent in the management of the dietetic department. Many felt that this affected the dietetic treatment of the patient. On the other hand, some with little administrative training felt they had gained much administrative experience from the multiskilled mess officer. Without these mess officers, many dietitians would have found the oversea supply and equipment problems insurmountable.

There was no demobilization program, as such, for the occupational therapists. As Army hospitals were deactivated or as personnel ceilings were lowered, occupational therapists were released at regular intervals.

Procurement Following Demobilization

Demobilization caused a shortage of dietitians and necessitated a program for recall to active duty for those who requested it. In April 1946, a quota of 50 was set and dietitians who so requested were granted extension of active duty for an unlimited time (category 1) or active duty until 30 June 1947 (category 2). All applicants for recall were carefully screened to assure that they met established criteria.

By October 1946, it was found that the number of dietitians eligible for separation greatly exceeded those who were surplus and available for reassignment. A procurement objective for 50 dietitians was authorized. This number was in addition to the number authorized for recall and all appointments were to be accomplished before 30 June 1947.

By June 1947, only 25 dietitians had been obtained through the recall program and 5 through the recruitment program for new officers. Although the recall program continued in effect, it brought only 15 additional dietitians back to duty by January 1948.

UNIFORMS

Uniform allowances were not provided the civilian dietitians, physical therapists, or occupational therapists, so each was required to purchase the uniform recommended for her particular group. Of particular interest to the dietitians was the change in style of their white hospital uniform in February 1941. This was the first official change in 18 years. Earlier, the uniform had been a straight one-piece dress of white poplin or percale which was slipped on over the head. It had long sleeves with tailored turned back cuffs. Because of the difficulty in purchasing the designated uniform, different styles were sometimes worn. The new uniform, also in white, could be either long or short sleeved and had a side opening which was closed by either zipper or snaps. A detachable stiff collar continued to be used.

Early in the war period, physical therapists continued to wear the dark blue cotton hospital uniform (fig. 31) which had been authorized in the twenties. The dietitians and physical therapists going overseas early in 1942 joined their units wearing civilian clothes which they found not easily adaptable for wear with canteens, musette bags, gas masks, or life belts. Some hospital commanders issued them the blue street uniform then authorized for members of the Army Nurse Corps; however, they could not wear the official buttons or U.S. insignia.

In June 1942, summer and winter street uniforms were authorized for dietitians and physical therapists.[62] They were compulsory items of wear for those going overseas and optional for those in the Zone of Interior. The uniforms were medium blue and several kinds of

[62] (1) Circular Letter No. 51, Office of The Surgeon General, 3 June 1942. (2) Early in 1941, Miss Helen C. Burns, chief dietitian, and Miss Emma E. Vogel, chief physical therapist, Walter Reed General Hospital, Washington, D.C., on their own initiative designed an attractive street uniform to be worn by their respective groups in the event of a national emergency. These uniforms are described in Circular Letter No. 51.

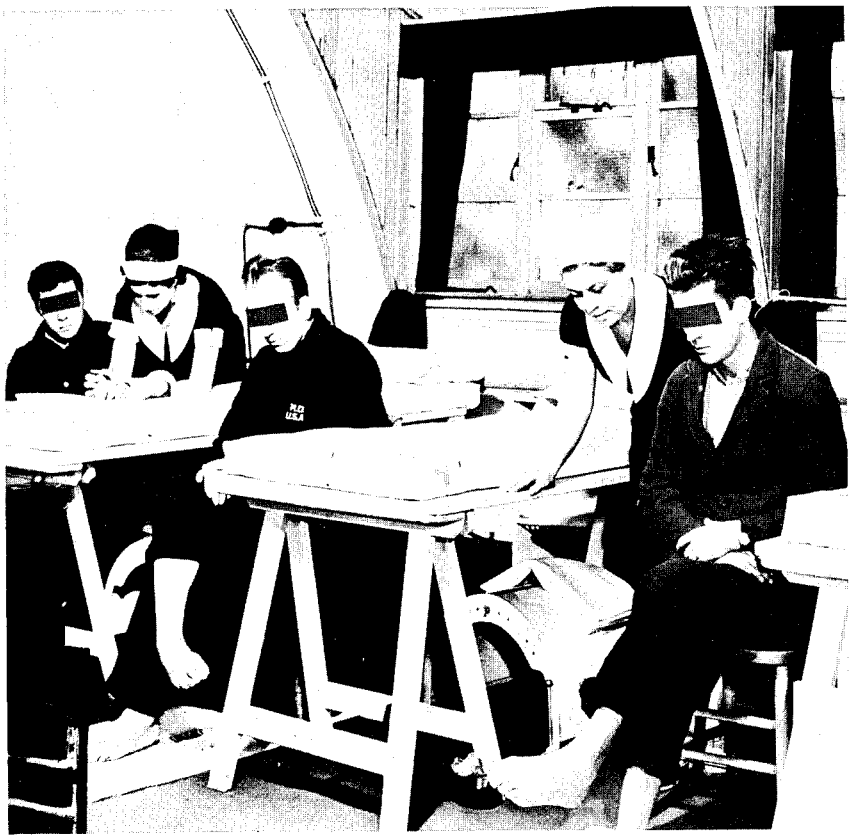


FIGURE 31.—Blue hospital uniform worn overseas early in World War II by physical therapists, 5th General Hospital, European Theater of Operations, U.S. Army.

material were available for summer or winter wear. The uniform also consisted of a blue overcoat, blue felt hat, tan or white shirt, dark red tie, and the "HD" or "PTA" insignia which were worn in the lapels. These uniform items were purchased by each individual.

Even though this uniform was approved, difficulties were encountered in obtaining priorities for the material. Few were able to procure complete uniforms and accessories. They felt fortunate to have even a partial uniform to combine with civilian clothing to wear overseas.

After military status was authorized in December 1942, the letters "HD" or "PTA" were also worn on the left of the hospital uniform collar with the rank insignia on the right. The use of these insignia was discontinued as soon as the caduceus with letters "HD" or "PT" superimposed was available.[63]

[63] (1) Army Regulations No. 600–35, 6 Mar. 1943. (2) For insignia of all Medical Department personnel in World War II, see: Medical Department, United States Army. Personnel in World War II. Washington: U.S. Government Printing Office, 1963, frontispiece.



FIGURE 32—Off duty uniforms, World War II. (Left) Beige dress with maroon trim, worn with brown gloves, purse, and shoes. (Right) Two-piece beige uniform worn with white shirt, maroon tie, and brown accessories. (U.S. Army photographs.)

These uniforms were worn until the spring of 1943 when dietitians and physical therapists were authorized the hospital uniform, two-tone blue street uniform, and the off duty dress and suit (fig. 32), worn by members of the Army Nurse Corps. In 1944, when full military status in the Army of the United States was authorized for dietitians and physical therapists, they wore the olive-drab uniform and accessories which were authorized for all women in the Army.

For a short time, dietitians and physical therapists in the United States wore a white hospital uniform until the supply of seersucker hospital uniforms was sufficient to meet the needs overseas and in the United States (fig. 33). It was anticipated that the use of the seersucker garment would be discontinued after the war and that the traditional

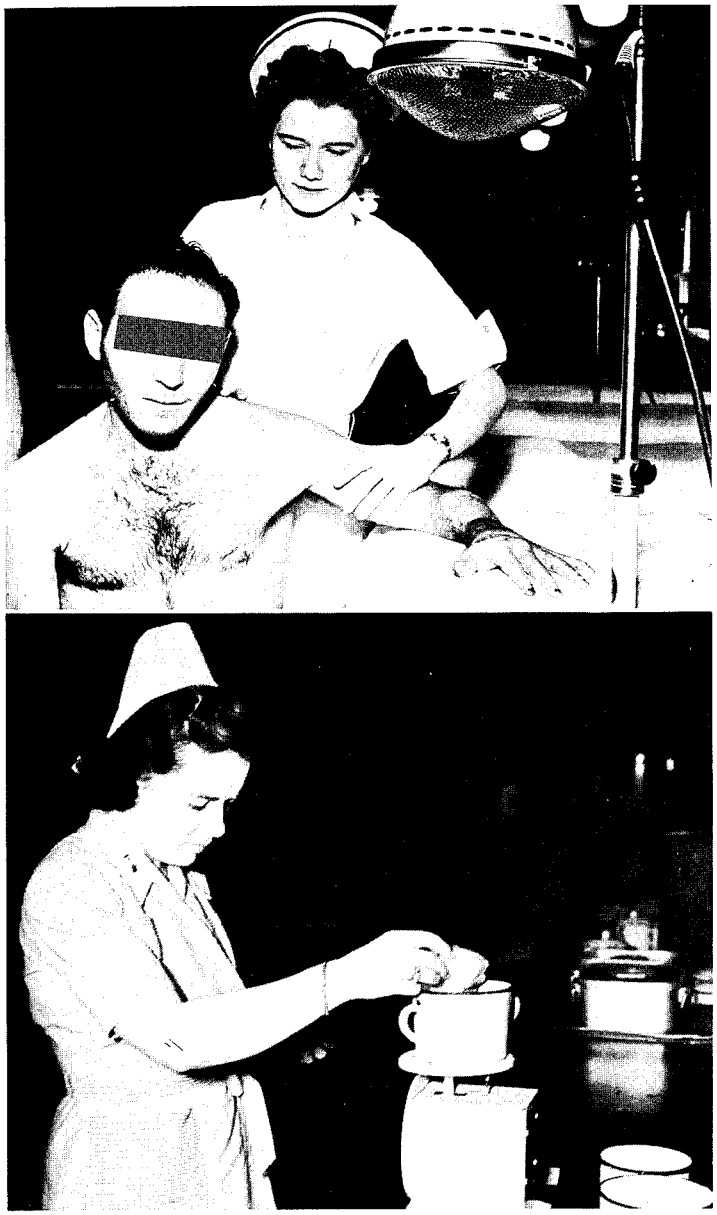


FIGURE 33—Hospital uniforms, World War II. (Top) White hospital uniform worn before issue of brown and white striped seersucker uniform. (Courtesy of National Library of Medicine.) (Bottom) Seersucker uniform. (U.S. Army photograph.)

white uniform with appropriate insignia would be worn by all women officers on duty in Army hospitals.

The uniform worn in oversea hospitals was somewhat dependent on availability of items and on the type of service rendered by the hospital. In spite of Army regulations pertaining to the wearing of uniform items, the supply was sometimes limited and, consequently, there were variations of both the street and hospital uniforms in the different theaters and areas and sometimes even within an area.

That occupational therapists wore an attractive white hospital uniform (fig. 34) may be due largely to the remarks made by Lt. Col. William C. Porter, MC, Chief, Neuropsychiatric Service, and Director, Occupational Therapy Department, Walter Reed General Hospital, in a memorandum to the Commanding Officer in April 1942: [64]

> I earnestly recommend that the uniform prescribed for and worn by O.T. Aides at this hospital since 1918 be changed because:
>
> a. It is clumsy, unflattering to the female form and suggests that its origin was contemporaneous with Florence Nightingale.
>
> b. It is in 6 pieces and is a laundry nightmare.
>
> c. Its color (a purplish blue) is depressing alike to normal and psychotic persons.
>
> * * * * * * *
>
> All the remarks made relative to present skirt apply to present cap which is a shapeless mass fabricated from organdy.

Colonel Porter urged adoption of the uniform recommended by the American Occupational Therapy Association and noted: "In this matter, the undersigned has received technical female assistance."

SUPPLIES AND EQUIPMENT

Vital to any program are the supplies and equipment necessary for its accomplishment. Early in the war, many items needed for the new and expanding hospital programs could not be obtained immediately, but this situation was gradually eliminated as production capability increased.

Because so few Army hospitals had occupational therapy departments during the peacetime interval, the major portion of the supplies and equipment had been purchased locally by each hospital. Occupational therapy items were not medical supply items of issue as were the majority of food service and physical therapy items. Only a limited assortment of the more commonly used hand tools was available from medical supply section. Since brace shops were not established until after war began, leather, always a basic item of supply in occupational therapy, could be obtained only by purchase.

Rehabilitation Equipment for Zone of Interior Programs

One of Major Barton's most urgent problems in 1943 was to develop

[64] Memorandum, Lt. Col. William C. Porter, MC, Director, Occupational Therapy Department, Walter Reed General Hospital, to Commanding Officer, Walter Reed General Hospital, 29 Apr. 1942.



FIGURE 34—Hospital uniform worn by occupational therapists, World War II.

a supply table of items necessary to open a clinic and sufficient to maintain the program. A list of activities and the necessary supplies had been prepared in 1942 by the National Research Council. To insure an adequate and up-to-date listing, additional lists of estimated requirements based on an experience factor were obtained from four Army general hospitals.[65]

The Medical Department occupational therapy equipment and supplies list was published in September 1943.[66] It contained 378 items authorized for issue to all Army named general hospitals in the Zone of Interior. An annual cash allowance, ranging from $1,000 to $2,500

[65] Lawson General Hospital, Atlanta, Ga.; Letterman General Hospital, San Francisco, Calif.; Lovell General Hospital, Ayer, Mass.; and Walter Reed General Hospital, Washington, D.C.
[66] Medical Department Equipment List 9N464, 22 Sept. 1943.

(determined by hospital bed capacity), was also authorized for local purchase of items not included in the list.[67]

Program expansion soon made the original supply list inadequate, and, in July 1944, when cash allowances for supplemental purchases were discontinued to protect supplies and material intended for the civilian economy, the need for a new list became mandatory.[68] The revised list, completed in August, included nearly 1,000 items[69] and was supplemented by photographic equipment and supplies available through the Army Signal Corps and the authorization for local purchase of lumber.

There were other means and sources of supply through which many occupational therapy clinics met their needs. Among these were donations of new and salvage supplies from community groups, local stores, and industrial concerns which became interested in supporting medical phases of the war effort. The Rohm and Haas Company, Philadelphia, Pa., was among the most generous suppliers; beginning in 1944, in response to requests, they made monthly shipments of scrap plastic to Army hospitals throughout the country.

The management and workers of the Ford Motor Company showed considerable interest, as is witnessed by the following news item from a Detroit paper published in September 1944:

> Parts for a complete machine shop to be installed at Percy Jones General Hospital for the benefit of disabled veterans who were mechanics before they entered the service and for others who wish to spend their convalescent period in studying machine shop methods were made possible by workers of Detroit's Tool and Die Unit of Ford Local UAW-CIO [United Automobile Workers–Congress of Industrial Organizations]. A fine selection of tools to be used in the shop was donated by the Ford Motor Company.

Rehabilitation Equipment for Oversea Programs

Late in 1944, requests were received by the Surgeon General's Office for equipment to be used in occupational therapy and rehabilitation of neuropsychiatric patients in hospitals in the Pacific areas.[70] At that time, no agency was responsible for the procurement of equipment for rehabilitation and reconditioning programs in these oversea hospitals. Although the Special Services Division and the Red Cross had supplied much equipment which had been used in programs for mental patients overseas, neither could be held responsible for procuring equipment for a rehabilitation program since they were not authorized to engage in remedial treatment.

Two groups of patients were involved, those who could be returned

[67] Letter, Col. S. B. Hays, MC, Director, Distribution and Requirements Division, Office of The Surgeon General, to Commanding Officers and Medical Supply Officers, Supply Depots, 2 Oct. 1943, subject: Occupational Therapy Equipment.

[68] War Department Circular No. 310, 20 July 1944.

[69] Army Service Forces Catalog MED 10–23, 11 Jan. 1945.

[70] Memorandum, Maj. Ira H. Degenhardt, MC, to Chief, Operations Service, Office of The Surgeon General, 21 Dec. 1944, subject: Occupational Therapy and Rehabilitation of Patients Overseas.

to duty within the 120-day hospitalization limit and those to be evacuated to the United States. For the latter, inadequate airlift facilities had created a "huge backlog in some theaters" and it seemed advisable to "assure provision of minimal equipment for therapy for this group, pending their return, before they are beyond all salvage."

The Surgeon General recognized the benefit which would be derived from such a program, and, upon his recommendation, the Medical Department was given the responsibility of providing the needed supplies and equipment.[71] By this action, The Surgeon General did not reverse his policy restricting occupational therapy to the Zone of Interior. Extensive occupational therapy equipment was not to be provided nor were additional personnel to be made available. A special catalog listing items for diversional therapy was prepared so that equipment could be requisitioned as convalescent aids.[72] Through arrangement with Special Services Division, handicraft kits were made immediately available to oversea hospitals to serve as interim measures until the other equipment could be obtained.[73]

ESTABLISHMENT OF PHYSICAL MEDICINE SERVICE

In order to provide a more efficient and coordinated management of the rehabilitation of patients in Army hospitals, on 4 April 1946, The Surgeon General placed the Physical Therapy Branch, the Occupational Therapy Branch, and the Physical Reconditioning Branch under the direction of the Director, Physical Medicine Consultants Division.[74] This reorganization resulted in very few changes in the duties of the directors of physical and occupational therapy and their staff officers. Administrative procedures concerning physical and occupational therapists continued to be processed by the Military and Civilian Personnel Divisions, respectively. Under this reorganization, all professional matters were coordinated with the Director, Physical Medicine Consultants Division.

The establishment of physical medicine services in general hospitals was effected as soon as qualified medical officers were available in sufficient numbers to direct such services. The reorganization at the general hospital level vitally affected the status of many of the chief physical and occupational therapists. With frequent changes in medical direction and the many added activities during the war years, they had become more and more responsible for the administration of their clinics. In those instances where the directors of the new physical medicine services recognized and utilized the abilities of these chiefs, the readjustment to the reorganization presented few problems. Unfortunately, there were some situations in which the chiefs were

[71] Memorandum, Brig. Gen. R. W. Bliss, Chief, Operations Service, Office of The Surgeon General, for Commanding General, Army Service Forces, attention: Director, Planning Division, 5 Jan. 1945, subject: Reconditioning Overseas, with 1st indorsement thereto, 25 Jan. 1945.

[72] Army Service Forces Catalog MED 10–23, April 1945.

[73] Loughlin, Richard L.: History of Physical Medicine, p. 154. [Official record.]

[74] Office Order No. 111, Office of The Surgeon General, U.S. Army, 4 Apr. 1946.

relieved of their administrative functions and certain of their professional responsibilities, producing a situation not conducive to good morale or efficient operations.

By far, the most drastic change occurred in the relationship of the chief physical therapist to the chiefs of the other hospital services. Formerly, she had been considered a staff member and, as such, attended hospital staff conferences and had direct contacts with the chiefs of services on matters pertaining to patient care. Under the reorganization, she was relieved of these duties, thereby markedly decreasing her professional status in the hospital organization. This influenced some outstanding physical therapists in their decision not to make application for commission in the Regular Army in 1947.

The organization in general hospitals provided for an administrative officer, usually a member of the Medical Administrative Corps (later the Medical Service Corps). Many of these officers were inexperienced in matters which were routine for the physical and occupational therapists. Where there was proper orientation concerning this reorganization, the administrative officer relieved the chief therapists of many time-consuming duties pertaining to property, supplies, and custodial service, thus permitting them to devote more time to professional matters. Although this was an advantage in many respects, it was also a disadvantage. Newly appointed physical or occupational therapists in general hospitals had no opportunity to gain experience in administrative functions which they would be expected to assume when they were assigned to station hospitals in this country and to hospitals overseas where physical medicine services did not exist.

CHAPTER VI

Training in World War II

Colonel Emma E. Vogel, USA (Ret.),
Colonel Katharine E. Manchester, AMSC, USA,
Major Helen B. Gearin, USA (Ret.), and
Major Wilma L. West, AMSC, USAR

Wartime training programs in dietetics, physical therapy, and occupational therapy were designed to accomplish two major objectives: To provide military orientation of civilian-trained personnel and to increase the number of qualified graduates available for Army service. The physical and occupational therapists also conducted training programs for enlisted technicians. Although dietitian, physical therapy, and occupational therapy groups undertook training programs in these basic areas at different times and in various ways, there was considerable similarity in both approach and content of their respective solutions to the problem of training personnel for military hospital service.

Section I. Basic Military Orientation for Newly Appointed Personnel

DIETITIANS

From October 1940 to late 1941, all dietitians sent to Walter Reed General Hospital, Washington, D.C., as replacements were civilian trained. Upon completion of approximately 6 months' duty at the hospital, these dietitians were transferred to other Army hospitals to organize dietetic departments. This kind of assignment was, in a sense, the first orientation for newly appointed dietitians in World War II.

Special training in administrative procedures peculiar to military service was approved for civilian-trained dietitians on 15 February 1941 by the Surgeon General's Office. This training was initiated at fixed Army hospitals from 2 to 4 weeks before the dietitians were to be transferred to newly constructed installations.[1]

In April 1942, The Surgeon General authorized establishment of six training pools for civilian dietitians who were designated for duty outside the continental United States and who had had no experience in the Medical Department.[2] In addition, oversea volunteers from the American National Red Cross, upon their request, were appointed and assigned for observation and training at these pools. The course of instruction included lectures on organization of Army hospitals, Army

[1] Manchester, Katharine E.: History of the Army Dietitian. [Official record.]
[2] Circular Letter No. 34, Office of The Surgeon General, U.S. Army, 16 Apr. 1942.

regulations, organization of the mess department, relationship of dietitians with other personnel in the mess department as well as other departments of the hospital, personnel records, hospital fund reports, and procurement of food. Dietitians were given on-the-job experience in each section of the hospital mess so that they would be familiar with all phases of management: procuring, preparing, and serving food, and planning special diets. Assignments to these pools were discontinued in December 1942 when military status was authorized.

Dietitians assigned to affiliated hospital units scheduled for oversea service went on active duty training with the units at specified Army posts. They worked with the post hospital dietitian to become familiar with procedures and methods and often participated in maneuvers to learn to work and live under field conditions. These maneuvers made the dietitians conscious of ways to improve or improvise equipment and to substitute certain foods to relieve various ration shortages.

A special 60-hour course in "Cooking of Dehydrated Foods," course K, was made available to dietitians selected for oversea service either as members of numbered medical units being prepared for shipment or as replacements or fillers for units already overseas. The methods of production of dehydrated foods, principles of packaging and storing, newest procedures for reconstituting foods, planning menus, and actual preparation of meals were studied. Special training was given in the preparation of dehydrated food under field conditions (fig. 35) as well as in maintenance and operation of cooking equipment and sanitation in field messes. These dietitians subsisted on dehydrated foods or combinations of dehydrated foods and fresh rations for certain periods during the course.

In October 1943, the Army Nurse Corps established basic training centers throughout the country for nurses going overseas and for those new to military service. During this training, nurses attended classes in routine military hospital procedures, treatment of chemical casualties, care of battle fatigue, field sanitation, and evacuation of the sick and wounded. They drilled, went on road marches, pitched tents, practiced the proper use of the gas mask, and received instructions on what to do in an air raid. Among the many other subjects covered were military courtesy and discipline, organization of the Medical Department, military law, and the Articles of War.

It was not until 1944 that dietitians assigned to oversea hospital units and those entering the Army were sent to the training course for nurses. Dietitians already on Army hospital staffs were sent at the discretion of the service command commander.

The first change in the nurses' training course to include dietitians deleted 23 hours of nursing subjects and substituted 23 hours of dietetic subjects.[3] In 1945, 53 hours of instruction were deleted from the nurses' training course and other appropriate material substituted

[3] Army Service Forces Circular No. 163, 27 Dec. 1943.



FIGURE 35—Class in dehydrated food preparation using field equipment, Fort Sam Houston, Tex.

for the basic training of dietitians.[4] This program provided 17 hours of lectures and demonstrations to be conducted by dietitians and 36 hours of on-the-job understudy in the hospital mess.

PHYSICAL THERAPISTS

Since many of the physical therapists joining affiliated units at the point of origin had had no Army experience, it seemed advisable to establish training courses for them. It was planned that this period of observation and orientation would include on-the-job training, instruction in customs of the service, organization of the Medical Department, procurement of supplies, and organization and administration of physical therapy clinics in Army hospitals.[5] Orientation courses were to be

[4] War Department Mobilization Training Program No. 8–7, 16 June 1945.
[5] See footnote 2, p. 137.

established in 1942 at several Army general hospitals, but so far as is known, Walter Reed General Hospital was the only hospital which activated such a program. This program, an excellent idea, was without supervision from the Surgeon General's Office. There was much confusion as to command responsibility, and as a result, this training was not well executed.

In 1943, it was recognized that newly appointed physical therapists who had not been trained in one of the Army physical therapy courses were also in need of military orientation. Since courses had already been established at several military installations for newly appointed nurses and dietitians, it was deemed expedient to include physical therapists as well.

For the hours scheduled for professional orientation of nurses and dietitians, substitute hours were planned for physical therapists. These covered the organization and administration of a physical therapy clinic in an Army hospital, clarified their relationship to other hospital personnel, and familiarized them with the treatment of patients not normally seen in civilian hospitals. Particular attention was given to the treatment of amputees and patients with injuries of the central and peripheral nervous systems; muscle, sensory, and electrodiagnostic tests; measurements of joint range of motion; bandaging adaptions of exercise apparatus; and utilization of floor space.

In September 1945, following V–J Day, all of these basic military training courses were terminated. The orientation proved to be so valuable, however, that an orientation course has been conducted almost continuously since 1948 for newly appointed female officers at the Medical Field Service School, Fort Sam Houston, Tex.

OCCUPATIONAL THERAPISTS

Orientation courses for occupational therapists were also necessary. However, since these personnel were civilians, they could not be integrated into the basic military training programs that had already been established for nurses and adapted for dietitians and physical therapists.

Accordingly, 2-week indoctrination courses for newly appointed occupational therapists were established in October 1943 at Lovell General Hospital, Ayer, Mass., Lawson General Hospital, Atlanta, Ga., and Letterman General Hospital, San Francisco, Calif.[6] Of the 96 hours of instruction, 36 were devoted to applicatory experience in which trainees worked with orthopedic and psychiatric patients, in convalescent shops, and on wards under the direct supervision of experienced occupational therapists. The remaining hours of lectures, conferences, demonstrations, and tours were scheduled to provide a variety of instructional material each day of the 12-day course. This schedule

[6] Letter, Headquarters, Army Service Forces, to Commanding Generals, First to Ninth Service Commands, 7 Oct. 1943, subject: Orientation Course for Occupational Therapists.

avoided solid blocks of time on any given subject. Students had access to the medical library and sat in on roundtable discussions in which problems and questions were discussed with members of the occupational therapy staff.[7]

The orientation courses were discontinued in July 1944.[8] By this time, the majority of chief occupational therapists had attended the course and could indoctrinate the new personnel on their staffs.

Section II. Professional Training Programs

While it was a relatively simple matter to arrange short military orientation courses, a far greater need and problem were faced in providing the additional numbers of qualified personnel that were needed in all three professions to staff Army hospital programs. Neither the start of the war in Europe nor the authorization for program expansion made possible by the September 1940 Selective Service Act had brought these medical specialists into military service in numbers adequate to meet the Army's need. Although the draft provided hospitals with personnel in many of the professional categories, female dietitians, physical therapists, and occupational therapists were not subject to military service and had to be recruited from among volunteers.

It had been established early that the total number of qualified dietitians, physical therapists, and occupational therapists in the entire United States was not sufficient to meet both civilian and military needs. Thus, if the Army was to fulfill its responsibilities in the care of its patients, it was imperative that emergency training programs for all three specialist groups be put into operation as soon as possible.

ACCELERATION AND EMERGENCY TRAINING PLANS

Dietitians

The need for training student dietitians in Army hospitals had been recognized shortly after World War I. In 1922, a course was established at Walter Reed General Hospital. Throughout the peacetime period and before World War II, a sufficient number of qualified dietitians were graduated from this course to supply the demand of all Army hospitals authorized to employ them.

These graduates, by virtue of their Army professional training, were well qualified for duty in other Army hospitals. The training program at Walter Reed General Hospital gave sound theory as well as practical on-the-job experience. In addition, students were given an opportunity for staff experience since they served in positions of responsibility during their training program.

[7] Program of Instruction for Occupational Therapists, Lawson General Hospital, Atlanta, Ga., 8–20 Nov. 1944.

[8] Army Service Forces Circular No. 229, 22 July 1944.

By August 1942, 211 dietitians had been graduated from the student dietitian training course at Walter Reed General Hospital.[9] Even though this course had met the needs of the Army in the past, it was obvious that accelerated programs for the training of student dietitians would have to be established at other hospitals to meet the needs of World War II.

Since the number of dietitians being trained in civilian hospitals before the war had more or less been governed by position vacancies, the wartime emergency found an extreme shortage of dietitians for the Army. To meet this shortage, the number of training courses in civilian hospitals was increased from 38 to 60. However, this was not enough. Other plans had to be developed to meet the increased need for dietitians. Consideration was given to a combination civilian and Army student training course and more frequent classes in civilian and Army hospitals. This would increase the number of dietitians trained who were orientated to Army procedures and methods. The training patterns which finally evolved are shown in chart 2.

On 17 July 1942, a meeting was held in the Surgeon General's Office to discuss the possible methods of training dietitians for the Army. Miss Nelda Ross, president of the American Dietetic Association, and Miss Gladys Hall, educational director of that organization, were present. In addition, Miss (later Lt. Col.) Helen C. Burns,[10] Chief Dietitian, Walter Reed General Hospital, and on part-time duty in the Surgeon General's Office; representatives from the Training and Civilian Personnel Divisions, Surgeon General's Office; as well as the Assistant Examiner, Education and Psychology Unit, Civil Service Commission, attended.

An accelerated student-apprentice dietitian training program was agreed upon. Two plans were recommended. Plan A provided that the student dietitian program conducted in Army hospitals would be divided into two sections, the student dietitian course and the apprentice dietitian course. Plan B provided for the establishment of a 6-month student dietitian program in approved civilian hospitals from which the students would be transferred to an Army hospital for the 6-month Army hospital apprentice course. The minimum educational qualifications were the same as those previously established for the student dietitian program. The first class, 16 students appointed under Plan A, entered on duty at Walter Reed General Hospital on 24 August 1942.

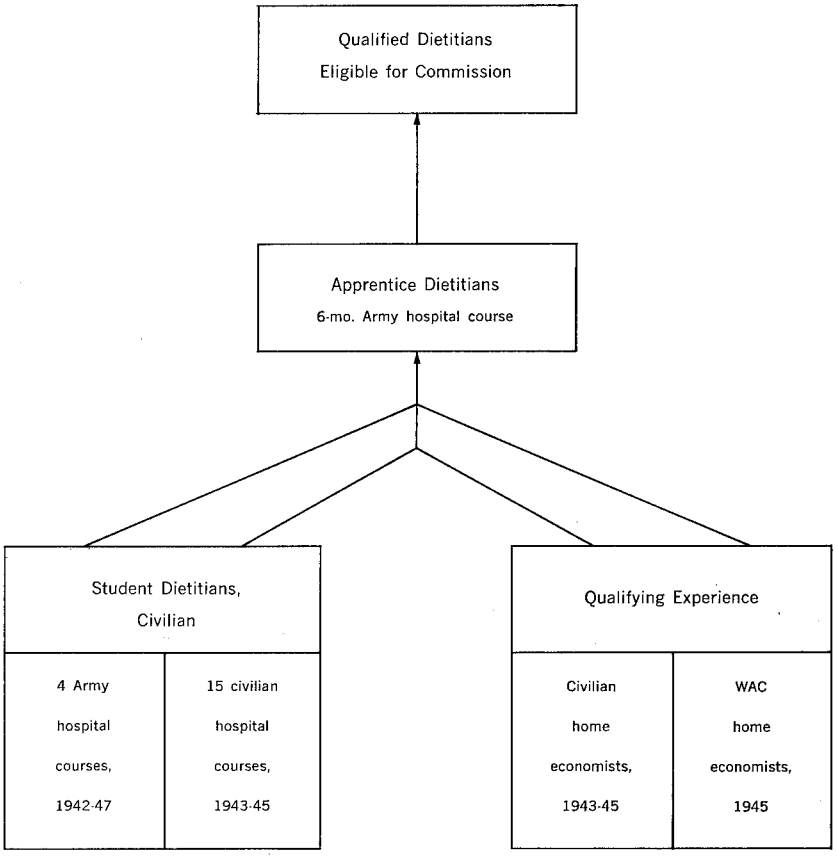
Six-month Army hospital student course

In revising the student dietitian training curriculum to meet the requirements of a shortened course, most of the didactic work and basic on-the-job training, as well as experience required in infant and

[9] For detailed information concerning educational requirements, salaries, and the number of students trained before World War II, see Appendixes B, p. 595, and C, 597.

[10] Later Maj. Helen B. Gearin, WMSC.

CHART 2—*Dietitian training patterns, 1942-47*



child feeding in pediatrics and in teaching student nurses, was planned for the 6-month course. Facilities for the different types of training or experience were not available at most of the Army hospitals in which the course was to be given.

The curriculum established for the student dietitian course at Walter Reed General Hospital was used as a guide for setting up three additional Army hospital student dietitian training courses, all approved by the American Dietetic Association. In May 1943, Fitzsimons General Hospital, Denver, Colo., started a course under the direction of Capt. Mildred G. Allbritton. The course at Brooke General Hospital, Fort Sam Houston, Tex., started in July 1943 under the direction of Capt. (later Col.) Nell Wickliffe. The last student dietitian course was established at Lawson General Hospital, in September 1943, under the direction of Capt. (later Lt. Col.) Hilda M. Lovett.

The object of the course was to furnish thorough training in the

diet in health and disease and in the organization and administration of a dietetic department in an Army hospital. Over 200 hours of lectures were given in diet therapy and administration. The theory of dietetics as it related to medical and surgical patients was taught by Medical Corps officers and heads of dietary departments.

On-the-job training in therapeutics totaled 11 weeks and included writing special diets, diet instruction to ward and clinic patients, supervision of ward kitchen, and participation in ward rounds. A minimum of 2 weeks each was spent in the surgical, cardiac, urological, and pediatric wards, gastrointestinal (fig. 36) and diabetic sections (fig. 37), and in the infant formula room.

Fourteen weeks were spent in administrative on-the-job training. A comprehensive program afforded experience in all areas of administration: menu planning; purchasing, ordering, preparing (fig. 38), and serving food; inventory and portion control; cost accounting; and personnel management.

Six-month civilian hospital student course

To establish the student dietitian program in civilian hospitals, in September 1942, Miss Ross sent a letter to the director of each of the 60 approved civilian training courses for dietitians. She wanted to determine which civilian hospitals had facilities to cooperate with the Army in this new training program. In her letter, Miss Ross stated that students who successfully completed this program would meet the 1-year requirement for membership in the American Dietetic Association.

Letters from directors of the approved civilian dietitian courses indicated that the plan was generally acceptable in hospitals where at least 10 or more students were enrolled. However, individual problems with staff and facilities at some civilian hospitals made it impossible for them to participate in the program. Some chief dietitians believed that the release of students after 6 months would lead to rather disorganized dietary departments, particularly in view of the problems encountered because of the excessive turnover of employees caused by the war. Other chief dietitians, who had already rearranged their training plan to provide for enrollment of student dietitians twice a year for the duration of the war, believed that it would be difficult to add a 6-month Army student program to their already increased training schedule.

The civilian internship directors who participated in the program were commended by The Surgeon General for their active cooperation during the war. Noteworthy of particular mention was the support given by Miss Phyllis Rowe, Director of the Dietetic Internship, Johns Hopkins Hospital, Baltimore, Md. Through her untiring efforts, Miss Rowe planned a student apprentice program, recruited dietitians for it, and sucessfully trained 28 of the 67 students who enrolled, in addi-



FIGURE 36—Medical officer lecturing on gastrointestinal diseases to student and staff dietitians. (U.S. Army photograph.)

tion to conducting an affiliation program for 2 student dietitians from Walter Reed General Hospital each month during the war.

The on-the-job training in the civilian hospital student dietitian courses included 6 weeks of special diet kitchen and ward service; 2 weeks of private patient service; 4 weeks of pediatrics, including formula preparation; 4 to 6 weeks of outpatient clinics; 6 to 8 weeks of administration, including purchasing, ordering, accounting, and menu planning; as well as some work with personnel and preferably experience in a cafeteria or dining room. It was required that the classes include lectures in diet therapy and infant feeding and experience in teaching dietetics to student nurses.

Six-month Army hospital apprentice course

It was obvious that the 6-month apprentice course established in 32 Army hospitals would have to be tailored to provide the apprentices with experience that would qualify them for membership in the American Dietetic Association and better prepare them for service in Army hospitals.

Dietitians trained in the 6-month civilian hospital student course

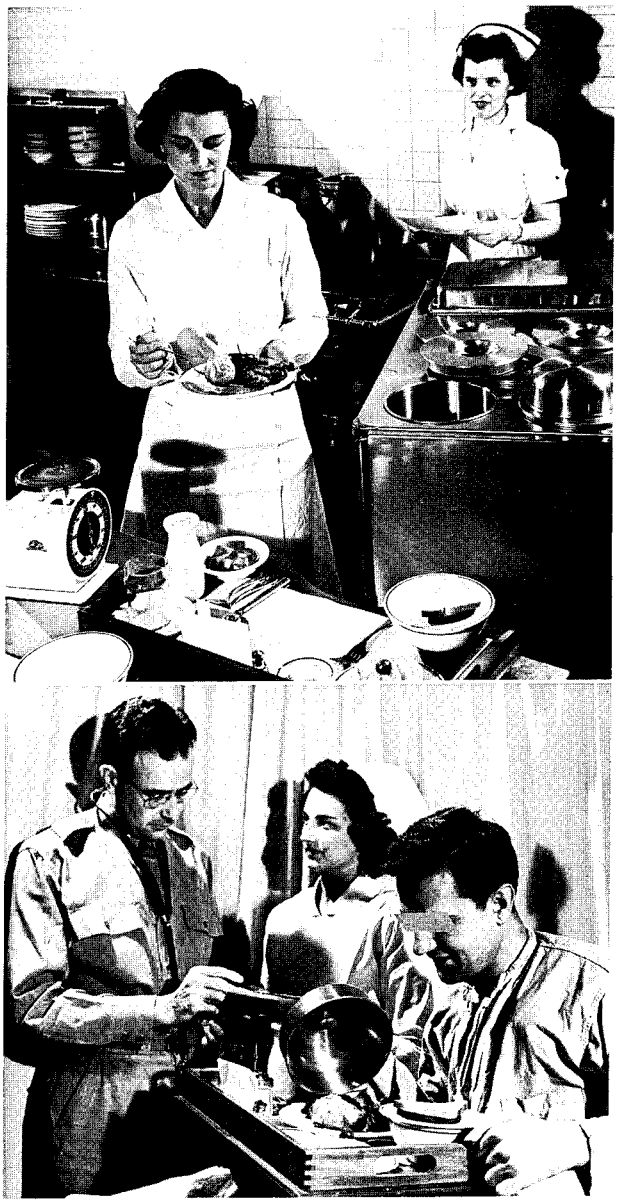


FIGURE 37—Apprentice dietitian participating in therapeutic phase of food service activities. (Top) Assembles food for a patient with diabetes. (Bottom) Discusses patients' diet with medical officer. (U.S. Army photographs.)



FIGURE 38—Student dietitian discussing recipe with head cook. (U.S. Army photograph.)

had different types of experiences than those trained in the 6-month Army hospital student course. Every effort was made to establish appropriate programs at designated hospitals where civilian-trained students as well as Army-trained students could be assigned for their apprentice training. (See Appendixes D, p. 599, E, p. 601.) When qualified experience was substituted for the student dietitian training course, another appropriate apprentice training course was established.

In 1943, the apprentice training course followed a recommended course of instruction outlined by The Surgeon General. The plan for the apprentice training program was published by The Surgeon General, on 1 May 1944, and provided a more detailed guide for instructors. These courses were adapted locally to meet the needs of particular apprentice dietitians in training at each hospital.

Practical experience was emphasized in the 26-week apprentice program: 16 weeks, administration of food service sections; 8 weeks,

therapeutic phases of food service activities; and 2 weeks, lectures as indicated by subject matter. Assignment in a supervisory capacity was scheduled during the last several months of apprentice training to meet American Dietetic Association requirements for staff experience during dietetic internship.

Qualified experience apprentice entrance plan

During the 1943 recruitment from the scarce category of qualified dietitians, home economists with Bachelor of Science degrees who met the educational qualifications but lacked the internship or the hospital experience qualification, evinced interest in appointments as Medical Department dietitians. When it was determined that sufficient numbers of these individuals with varied and valuable experiences in fields related to dietetics were available and interested, The Surgeon General recommended and the American Dietetic Association approved the qualified experience apprentice entrance plan. This plan permitted substitution of certain categories of experience in lieu of the 6-month Army hospital student course or the 6-month civilian hospital student course. (See Appendix F, p. 603.) The minimum educational qualifications remained unchanged; namely, Bachelor of Science degree with a major in foods and nutrition or a major in institution management with specific courses required by the American Dietetic Association.[11]

At different times during the war, enlisted members of the Women's Army Corps expressed an interest in the Army student dietitian training course. There were several women in this corps with backgrounds in home economics who thought they might qualify for either student or apprentice training. Thus, on 6 March 1945, enlisted women were permitted for the first time to apply for assignment to the 6-month apprentice training course.[12] The Surgeon General's Office gave authority for the establishment of the first training course for enlisted members of the Women's Army Corps at McCloskey General Hospital, Temple, Tex., with authorization for 10 apprentices in each class. However, only five applied and these were accepted. Upon completion of the course, they were commissioned as Medical Department dietitians. The course was begun on 15 June 1945 and was discontinued on 1 January 1946. This was the only dietitian course for enlisted women given during World War II.

Since procurement objectives for all officers were canceled after V–J Day, a study was made to determine whether additional dietitians were needed. Authority was received to proceed with the training of those students on duty as of 1 October 1945 and to tender them commissions upon successful completion of the course. All outstanding

[11] See footnote 1, p. 137.
[12] War Department Circular No. 71, 6 Mar. 1945.

appointments of individuals who had not yet begun training were canceled.

By October 1946, all training courses for dietitians, except the one at Brooke General Hospital, were terminated. The student courses were closed at Fitzsimons General Hospital on 1 November 1945 and at Lawson and Walter Reed General Hospitals on 1 March 1946.

Physical Therapists

In 1941, a Central Physical Therapy Board was established in the Surgeon General's Office to work with the Subcommittee on Physical Therapy, National Research Council, and the Federal Security Agency on problems associated with the expansion of the physical therapy program in Army hospitals.[13] Among the problems presented to this board was the subsidization of civilian physical therapy training courses. In this connection, a survey made by the Council on Medical Education and Hospitals, American Medical Association, early in 1942, revealed that civilian physical therapy training courses which required payment of tuition were experiencing great difficulty in maintaining full enrollment. To assist these courses in supporting maximum enrollment and to more effectively contribute to the procurement of physical therapists for the Army, it had been suggested several times that the War Department subsidize these courses. In view of the planned expansion of the Army physical therapy training program, it was The Surgeon General's opinion that the subsidy of civilian training courses could not be justified or supported.[14]

The expansion of the Army physical therapy training program was accomplished by the establishment of courses directed to three groups:

1. Civilian students who would take all of their training in Army hospitals.
2. Military students (enlisted members of the Women's Army Corps) who would take all of their training in Army hospitals or who would take the apprenticeship phase of their training in Army hospitals following completion of didactic instruction in selected civilian institutions.
3. Civilian students who would take the apprenticeship phase of their training in Army hospitals following completion of didactic instruction in a civilian institution.

Civilian students

Plans for an emergency physical therapy training course were proposed by The Surgeon General early in 1941. This course, consisting of 6 months of didactic instruction followed by 6 months of applicatory training which was given at Walter Reed General Hospital, replaced

[13] Office Order No. 348, Office of The Surgeon General, U.S. Army, 21 Nov. 1941.
[14] Memorandum, Col. John A. Rogers, MC, Office of The Surgeon General, for Chief of Staff, G–3, attention: Colonel West, 10 June 1942.



FIGURE 39—Instruction and practice in bandaging techniques, physical therapy course for civilian students, Walter Reed General Hospital, Washington, D.C.

the regular 9-month course previously conducted at that hospital.[15] The proposal was approved by the Council on Medical Education and Hospitals. This Council also approved a plan whereby civilian institutions could conduct 6 months of didactic instruction to be followed by 6 months of supervised apprentice type of experience in selected Army hospitals.

On 1 July 1941, the first Army emergency course was initiated at Walter Reed General Hospital. Ten students were authorized and concurrent classes were conducted at quarterly intervals. The 26 weeks of didactic instruction included intensive study in anatomy, physiology, pathology, kinesiology, and allied subjects and thorough study and practice in the techniques of the various physical therapeutic procedures (fig. 39) and their application to the specialized fields of military medicine. Particular emphasis was placed on the treatment of patients with combat injuries.

A comparison of the curriculums of the regular and emergency courses is shown in table 7.

Since it was already obvious that the expansion of one course would not be sufficient to meet increasing personnel needs, additional courses

[15] The 3-month increase in the emergency program provided a full 6-month period to be concentrated on the applicatory phase. In the courses conducted before the war, the applicatory phase hours had been scattered throughout the entire course. Since the applicatory phase or apprenticeship was to be taken in a hospital other than the one in which the didactic phase was given and since the graduates of the emergency course would be more immediately involved with a larger number of patients with more complex injuries, the longer and more concentrated applicatory phase was considered necessary.

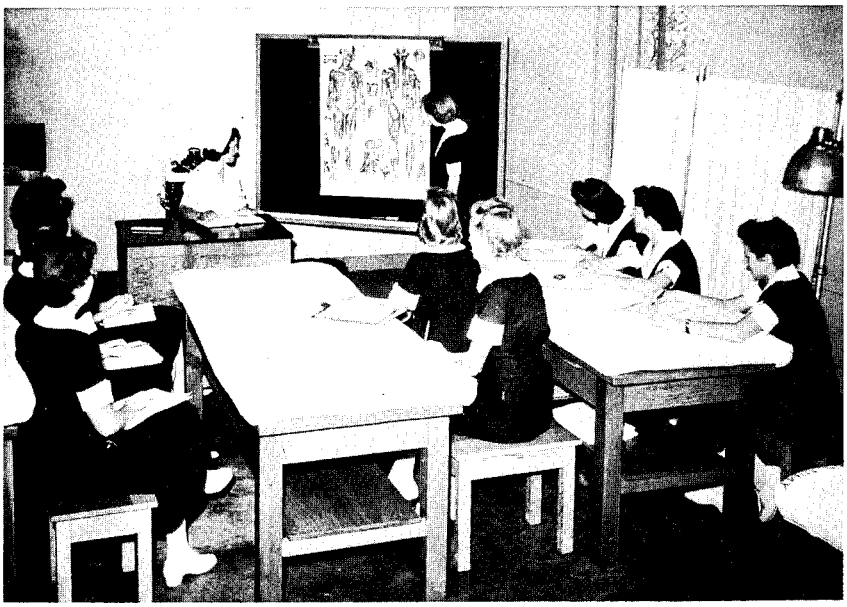


FIGURE 40—Anatomy instruction, physical therapy course for civilian students, Brooke General Hospital, Fort Sam Houston, Tex.

were established in October 1942 at the Fort Sam Houston Station Hospital, Tex. (later Brooke General Hospital, fig. 40), Army and Navy General Hospital, Hot Springs, Ark., O'Reilly General Hospital, Springfield, Mo., and Fitzsimons General Hospital. All were conducted on the same plan as the course in operation at Walter Reed General Hospital.

While the number of civilian enrollees for the Army physical therapy training courses increased considerably during 1943, the newly established training courses did not operate at full capacity. It was becoming increasingly apparent that the authorized capacities of these courses could not be maintained by the selection of students from registers compiled by the Civil Service Commission. Because college graduates with a physical education background were being offered increasingly attractive and lucrative positions by industry and the other military services, the number interested in Army physical therapy training was declining.

In 1944, a series of meetings was held under the auspices of the Officer Procurement Service, Army Service Forces, in San Francisco, Los Angeles, Chicago, Boston, and New York. These meetings, featuring talks and War Department films, resulted in a noticeable upswing of interest in the Army physical therapy training programs. Although there were only enough eligible civilian applicants to fill one class of trainees in January 1944, the influx in the number of certified appli-

TABLE 7—*Comparison of class hours in regular and emergency physical therapy courses, Medical Department, U.S. Army, 1940–41*

Curriculum	Regular course 1940 (Hours)	Emergency course 1941 (Hours)
Anatomy	220	200
Bacteriology	14	.....
Bandaging	25	35
Clinical practice[1]	500	312
Current medical events	50	20
Dermatology	5	5
Electrotherapy and electrophysics	90	75
Elements of hospital administration	3	.....
Fever therapy	2	.....
General medicine	15	15
General surgery	19	15
Hospital ethics	5	5
Human metabolism	10	.....
Hydrotherapy	30	40
Massage	80	90
Muscle and sensory tests	.....	25
Nervous and mental diseases	10	22
Occupational therapy	13	.....
Open and makeup time	.....	104
Oral hygiene	1	.....
Pathology	6	25
Peripheral vascular therapy	15	5
Phototherapy	30	40
Physiology	15	30
Physiotherapy in orthopedics	40	65
Psychology	10	10
Roentgenology	12	.....
Therapeutic exercise	65	100
Total hours	1,285	1,238

[1] Both courses included a period in which the student had actual experience in treatment of the patient under supervision. In the regular course, an extended period preceding the 500 hours of clinical practice was devoted to supervised participation in selected treatment procedures. These hours are not reflected in the table. In the emergency course, the 312 hours of clinical practice, included in the didactic phase, was followed by the 6 months' applicatory phase.

Source: Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army. [Official record.]

cants in the succeeding months indicated that consideration should be given to further expansion of this program. Subsequently, therefore, two additional courses for civilian students were established, one at Bushnell General Hospital, Brigham City, Utah, on 10 July 1944, and the other at Ashford General Hospital, White Sulphur Springs, W. Va., on 10 August 1944.

Civilian students enrolled in the courses subsequent to August 1944 were also required to meet the physical standards for commission on the basis of a final-type physical examination performed at a military installation not more than 3 months before enrollment. This policy was recommended by the Physical Standards Division, Surgeon General's Office, in an effort to reduce attrition because of later failure to

meet the physical requirements for commission as established by Army regulations.

Military students

In July and August 1943, conferences initiated by the director of physical therapists were held with the directors of the Training Division and the Women's Army Corps to discuss the possibility of making Army physical therapy courses available to qualified enlisted women. It was believed that such a program would not only assist in meeting the procurement requirements for physical therapists, but it would also offer an opportunity for professional as well as military advancement to these women since they would be eligible to apply for commissions as second lieutenants upon successful completion of the course. The program was approved in August 1943,[16] and the institutions selected to undertake such training under War Department contract were Stanford University, Palo Alto, Calif.; University of Wisconsin, Madison, Wis.; and the D. T. Watson School of Physiotherapy, Leetsdale, Pa. These courses,[17] outlined by The Surgeon General, began in October 1943, and continued in operation until October 1944. By that time, the courses conducted in Army general hospitals had expanded sufficiently to accommodate the increasing number of applicants.

Under the terms of the three contracts, the War Department paid for tuition, board, and room and provided textbooks and other teaching aids. Medical attention was available at the nearest Army hospital or dispensary. An officer in the Women's Army Corps, assigned with each group of students, was responsible for pertinent military administrative procedures. Army physical therapy training was available to enlisted women who were under 44 years of age, who had no dependents under 14 years of age, and who had an Army General Classification Test score of 110 or over.[18]

In December 1943, the Secretary of War authorized the direct recruitment of women qualified for the Women's Army Corps for the specific purpose of attending physical therapy training courses, with the assurance of a commission as a physical therapist upon satisfactory completion of the course if otherwise qualified.[19] That this was a productive program was evidenced by the fact that the number of women recruited for this specific program comprised more than half of the total military enrollment in these courses.

In June 1944, the maximum age for enrollment was reduced from 44 to 37 years. This change resulted from a study which revealed that trainees in the upper age group often experienced difficulty in adjust-

[16] War Department Memorandum No. W635–18–43, 22 Aug. 1943.
[17] Program of Instruction for Physical Therapy Aides in Civilian Installations and Schools Under the Direction of the Medical Department of the Army, 11 Sept. 1943.
[18] The Army General Classification Test was given to all enlisted personnel to determine the individual's ability to learn.
[19] Letter, The Adjutant General, to Commanding General, First Service Command, Army Service Forces, 14 Dec. 1943, subject: Recruitment of Physical Therapy Aides.



FIGURE 41—Enlisted student physical therapist adjusting infrared lamp in preparation for treatment of patient's left shoulder, Fort Huachuca Station Hospital, Ariz.

ing to intensive academic study and to living and working in close association with groups of younger women. A similar change was made in the age requirement for applicants for these courses from within the ranks of the Women's Army Corps.

The establishment of two all-Negro station hospitals in the United States and the activation of three such hospitals [20] for oversea duty raised the question of supplying physical therapists for these hospitals. Consequently, a physical therapy training course for Negro students was established at the Fort Huachuca Station Hospital, Ariz., on 1 October 1943 (fig. 41). As the requirement for Negro physical therapists was met with the commissioning of the trainees in October 1944,

[20] Smith, Clarence McKittrick: The Medical Department: Hospitalization and Evacuation, Zone of Interior. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1956, pp. 110, 111, 223.

the training of both military and civilian Negro students at Fort Huachuca was terminated.

The enrollment for five courses conducted in Army general hospitals was changed from civilian trainees to military trainees in January and February 1944 (fig. 42). (See Appendix G, p. 605.) Two additional courses for military trainees were established at Lawson General Hospital and at Percy Jones General Hospital, Battle Creek, Mich. An increased number of students were accommodated when authorization was given for concurrent classes to start at quarterly intervals beginning in July 1944. This plan was put into effect in all general hospitals conducting these courses except at Percy Jones General Hospital where housing facilities were inadequate for an overlap period.

All assignments to physical therapy training courses were terminated in October 1945, as a result of War Department action which canceled all unexpended portions of existing procurement objectives.[21] A special procurement objective of 325 physical therapists was authorized to fulfill commitments made to students already enrolled in courses conducted in Army installations.

Apprentice training program

The program of apprentice (applicatory) training in selected Army hospitals for graduates of the 6-month civilian emergency physical therapy courses developed slowly. Because the assignment of civilian apprentices was accomplished in the service commands by personnel not familiar with the program, they were often assigned on the basis of personnel requirements with little consideration being given to their need for continued instruction and supervised practice. Management of this program improved when centralized control was vested in the Surgeon General's Office late in 1942.[22]

Subsequently, The Surgeon General directed that training would consist primarily of supervised clinical practice in the treatment of patients, both in the physical therapy clinic and on the hospital wards. Particular emphasis was placed on the treatment of combat injuries, such as peripheral nerve, brain, spinal cord, chest and vascular injuries, and amputations. The program included attendance at conferences, participation in ward rounds, and at least 1 hour daily of roundtable discussion of treatment programs and current medical literature. In addition to professional training, instruction was also offered in the administration of a physical therapy clinic, including the preparation of pertinent records and reports, and the procedure for requisitioning supplies. For the applicatory phase of training, enlisted apprentice physical therapists were assigned to 20 general hos-

[21] Memorandum, Secretary of War, for The Adjutant General, 2 Sept. 1945, subject: Cancellation of Procurement Objectives.

[22] Memorandum, The Adjutant General, for Commanding Generals, All Service Commands, 24 Oct. 1942, subject: Dietetic and Physical Therapy Personnel in Army Hospitals.

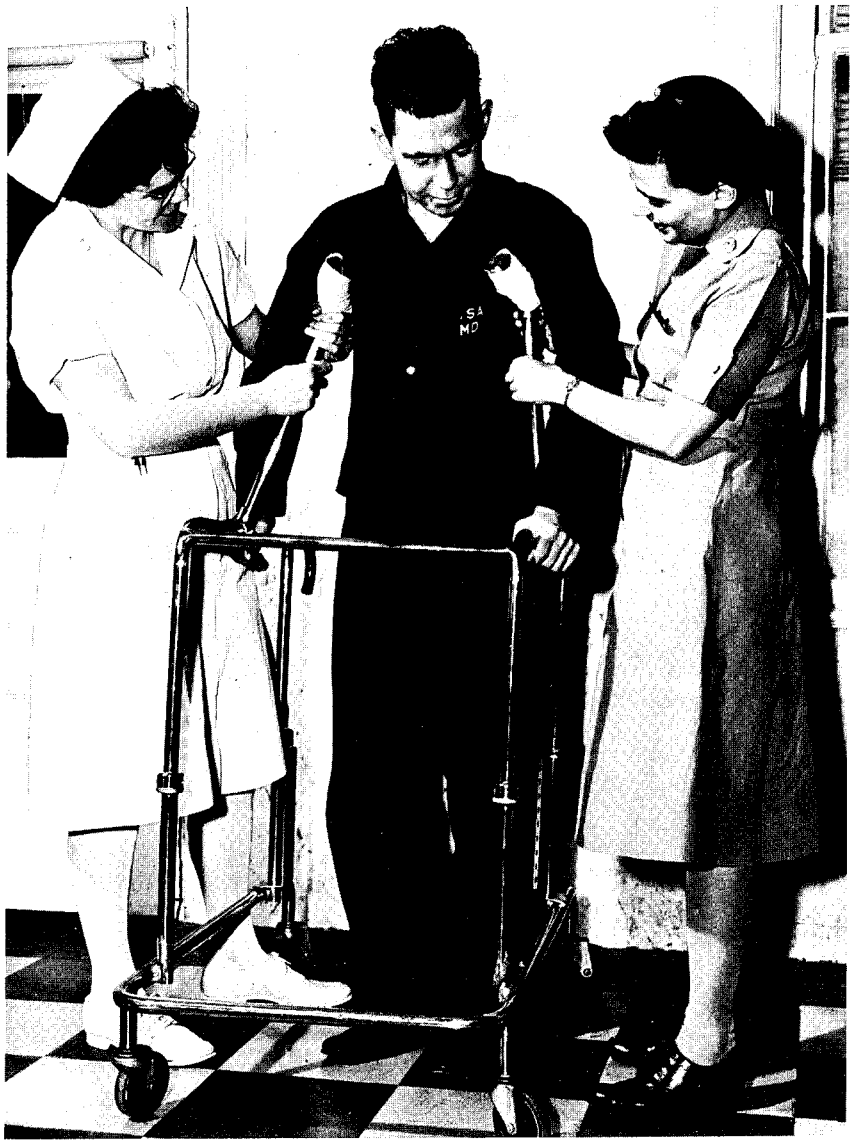
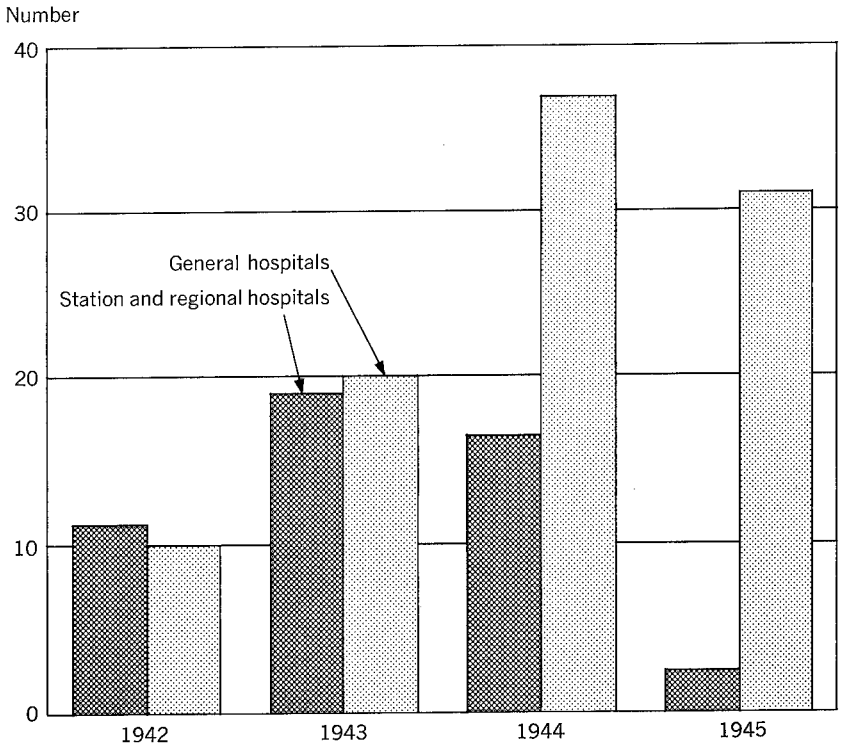


FIGURE 42—Enlisted student physical therapist receiving instruction in use of a walker, Army and Navy General Hospital, Hot Springs, Ark. (Courtesy of National Library of Medicine.)



FIGURE 43—Apprentice physical therapists in training, Fletcher General Hospital, Cambridge, Ohio. (Top) Civilian apprentice receives instruction in massaging scar tissue. (Bottom) Enlisted apprentice learns to apply short wave diathermy apparatus. (Courtesy of National Library of Medicine.)

CHART 3—*Army hospitals conducting applicatory (apprentice) physical therapy training programs, 1942-45*



Source: Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army. [Official record.]

pitals and civilian apprentice physical therapists were assigned to 31 other general hospitals (fig. 43).

After V–J Day, the directors of the civilian emergency physical therapy courses were advised that the 6-month applicatory training in selected Army hospitals would be terminated. Since the Army apprentice program for civilian students was terminated, arrangements were made for students enrolled in the 6-month emergency civilian course to have their apprenticeship experience elsewhere. On 10 October 1945, The Surgeon General wrote to the directors of civilian courses expressing his recognition of the valuable contribution these schools had made to the war effort. Although a large number of emergency courses were conducted in civilian institutions, the attendance at these courses was far below normal expectation except in the two schools where training was tuition free.

Experience in this program clearly demonstrated that in order to train apprentice physical therapists in the treatment of patients with combat injuries, clinical experience should be afforded in general

hospitals where such patients could be observed in large numbers. The limited clinical experience available in station and regional hospitals proved to be inadequate for this training; so after 1943, there was a general decrease in use of station and regional hospitals and greater utilization of general hospitals (chart 3). It was also demonstrated that the efficiency of the apprenticeship program was dependent not only on the amount and variety of clinical experience available, but also on the extent of supervision exercised by the chief physical therapist in the hospitals and by the Physical Therapy Branch, Surgeon General's Office.

Occupational Therapists

At the outbreak of World War II, 7 December 1941, there were eight qualified occupational therapists and four occupational therapy assistants on duty in five Army hospitals.[23] By V–J Day, 899 occupational therapists and apprentices were working in 76 general, convalescent, regional, and station hospitals in the continental United States.

Recruitment problems

The decision of Maj. Gen. James C. Magee, The Surgeon General, not to commission occupational therapists but to appoint them as civilian employees of the Medical Department proved a serious handicap to recruitment.[24] Another decision of the Surgeon General's Office which adversely affected recruitment efforts was that which limited the establishment of occupational therapy clinics to Army hospitals in the Zone of Interior. This decision was undoubtedly related to a concept of this service as being more valuable for the convalescent patients who were evacuated to the Zone of Interior than for the patients with acute injuries and illnesses hospitalized in the Communications Zone.

Regardless of these status deterrents, there was a far more serious reason for recruitment problems. It was the close approximation of the Army's estimated need and the total numbers of registered occupational therapists available in this country. By early 1944, so many new Army hospitals had been built or planned for priority construction that the target for personnel needed was set at 1,000.[25] At this time, there were scarcely 1,300 graduates in the registry of the professional organization. It was hardly conceivable, therefore, that the Army could hope to recruit over 75 percent of the total civilian supply of occupational therapists and the best solution seemed to be the

[23] Fitzsimons General Hospital, Denver, Colo.; Lawson General Hospital, Atlanta, Ga.; Letterman General Hospital, San Francisco, Calif.; Lovell General Hospital, Ayer, Mass.; and Walter Reed General Hospital, Washington, D.C.

[24] Letter, Maj. Gen. James C. Magee, The Surgeon General, to Everett S. Elwood, President, American Occupational Therapy Association, 1 Apr. 1940.

[25] Willard, Helen S., and Spackman, Clare S. (editors): Principles of Occupational Therapy. 1st edition. Philadelphia: J. B. Lippincott Co., 1947, p. 335.

establishment of an emergency training program for occupational therapists.

Design and purpose of War Emergency Course

The War Emergency Course was outlined by the Occupational Therapy Branch, Surgeon General's Office, in collaboration with the War Manpower Commission and the Committee on Education, American Occupational Therapy Association. The latter body reviewed the course plan at a special meeting on 21 March 1944 and approved it as satisfying the minimum standards for an occupational therapy curriculum established by the Council on Medical Education and Hospitals, American Medical Association.

The acceleration of this course was based on the experience of civilian schools which had, for several years, been qualifying college graduates in advanced standing courses of 18 months' duration. Prerequisites for these courses, in addition to a college degree, included a specified number of hours in biologic sciences, psychology, and sociology. With this background on which to build, school directors were able to telescope the required professional curriculum into 9 months of academic work and 9 months of supervised clinical experience.

In an effort to further shorten the professional education, the Army singled out skills and techniques as the most time-consuming subject matter in the curriculum and added these to the prerequisites for the War Emergency Course. Thus, the qualifications of applicants for this training were (1) bachelor of science or bachelor of arts degree, with a major in arts and crafts; industrial art, with teacher training experience; home economics, including manual skills; or fine or applied arts, including manual skills; and (2) basic psychology.[26] The only additional requirements of candidates accepted for this training were that they be citizens of the United States and between the ages of 21 and 35.

On this basis, the general plan of the course provided for a 4-month academic curriculum of medical subjects and the theory and application of occupational therapy followed by 8 months of clinical practice as apprentices in designated Army general hospitals. Thus, it is seen that the academic phase of the emergency course was 5 months shorter than the conventional didactic program, whereas the clinical phase was reduced by only 1 month. Together, these accounted for a 6-month, or $33\frac{1}{3}$ percent, time cut.

On 26 April 1944, The Surgeon General forwarded to the Commanding General, Army Service Forces, the official request for the establishment of such an emergency training course and, in late May, this was approved.[27] It was another full month, however, before the

[26] Memorandum, The Surgeon General, for Commanding General, Army Service Forces, 26 Apr. 1944, subject: Occupational Therapists.
[27] Memorandum, War Department, for Office of The Surgeon General, 9 May 1944, subject: Approval of Contract for Training of Occupational Therapists.

official publication authorizing establishment of this course appeared.[28] In addition to specifying the civilian schools which had indicated a willingness to offer the course, this planning memorandum set the numbers required to be trained within 1 year at 600 and requested permission to start negotiations with participating schools. Funds to cover the cost of this training program were allocated to the appropriation "Medical and Hospital Department, Army."

Contracts with civilian schools participating in this government-subsidizing training course were prepared and executed by the Legal Division of the Surgeon General's Office. The first section of these contracts set forth general provisions relating to disputes, convict labor, antidiscrimination in employment, and the 8-hour-day work law. Other articles specified the facilities, students, instruction, equipment and supplies, course, payment, and termination conditions required. More specific provisions established The Surgeon General's authority to prescribe curriculum, teaching methods, classroom materials, and class schedules, to make inspections of the school facilities and course at any time, to require periodic written reports on the progress of each student, and to remove from the course any student who failed to maintain a satisfactory standing or whom The Surgeon General, for any reason whatsoever, desired withdrawn.

Academic phase.—As previously noted, the principal means by which the War Emergency Course was accelerated from 18 to 12 months was the requirement of additional prerequisites in the skills and techniques of occupational therapy. While each applicant accepted for training was required to have at least three manual skills, the average possessed by the majority was even greater, because most of the candidates had either majored in art or home economics or had supplementary experience in teaching the creative and manual skills. Although not all were equally qualified, the general level of prior education was such that many courses taught in the traditional curriculum could be eliminated from the academic phase of this course. Over 90 percent of the students had bachelor's degrees, and over 3 percent had master's degrees. The average educational level of the nondegree students was 3.8 years beyond high school.

In effect, therefore, schools taught only two of the so-called major arts and crafts. At the top of the list, from which these two might be selected by the school in accordance with its facilities, materials, and instructional personnel, were woodworking and printing. Most schools taught these activities although several offered weaving or radio and electrical repair in lieu of printing.

In contrast with the limited number of media taught was the preponderance of hours devoted to sciences, clinical conditions, and the theory of occupational therapy. These subjects accounted for two-thirds of the total academic curriculum, in both hours and credits, and were in every sense, the backbone of the academic course. The

[28] Army Service Forces Circular No. 189, 22 June 1944.

most notable omissions among these subjects, in comparing the war course with the regular curriculum, were psychology, here made a prerequisite, and pediatrics, a subject of obviously less importance in preparation for work with the war injured in Army hospitals.

Table 8 outlines the prescribed academic content of the War Emergency Course as it was presented at one of the civilian schools. Both at the time the course was first proposed and on many occasions since the war, there have been questions challenging how so much material could be covered in so short a time. One method used was the scheduling of 24 hours of classes per week and an additional 12 hours per week for visits, field trips, observation, collateral reading, and study. In addition, there were innumerable hours of outside preparation and work required if one were to keep up with this intensive schedule. On the basis of allowing 2 hours outside preparation time for each 1 hour of classwork, even the wartime 48-hour-week would not appear to have been adequate.

TABLE 8—*Outline of emergency 4-month course for occupational therapists, 1944*[1]

Subject	Hours		Credits
	Total	Per week	
Anatomy and physiology	64	4	4
Kinesiology	32	2	2
Tuberculosis and blindness General medicine	[2]32	2	2
Pathology Orthopedics	[2]32	2	2
Neurology Psychiatry	[2]32	2	2
Rehabilitation	32	2	2
Theory and application of occupational therapy	32	2	2
Skills and techniques	128	8	8
Total	384	24	24
Field trips, observation, collateral reading, and study	192	12	0
Grand total	576	36	24

[1] Course offered by the Richmond Professional Institute, Richmond, Va., of the College of William and Mary, Williamsburg, Va., in cooperation with the Medical College of Virginia, Richmond.

[2] Courses offered by the Medical College of Virginia. Each subject listed was offered for 2 months.

Additional factors therefore seem significant, and one of these was the unusual impetus and drive that motivated everyone in the national emergency created by the war. Of still further relevance could be the short timespan over which great concentration and effort were required, as well as the government subsidy for both trainee tuition and living expenses and the ultimate reward of qualification for professional registration available to all who successfully completed the course.

Clinical phase.—Satisfactory completion of the academic phase of training was certified by the civilian schools to The Surgeon General

and to the service commands in which the schools were located. The Surgeon General then assigned trainees to selected general hospitals for the 8-month period of clinical affiliation and experience.

A detailed program of instruction for the 34-week clinical affiliation was published by The Surgeon General in October 1944 [29] to furnish a general guide for applicatory training. Modifications of the standard program to make best use of instructional facilities and resources to conform to local situations were permitted within the general provision that a progressive and balanced training be maintained (fig. 44). The clinical program was intended to provide orientation to the Army and training through application of the principles, processes, and techniques studied in the 4-month didactic phase.

The clinical affiliation strongly supplemented the academic portion (fig. 45) of the emergency course and afforded an additional means of acceleration. Eighty-seven hours were provided for work with craft activities not given in the academic portion or for the perfecting of techniques with those crafts previously learned. In addition, further practice and exploration of craft techniques were made possible in the work experience periods which were scheduled in all four areas of practice. In this way, time was allocated for learning the creative and manual skills which were so foreshortened in the academic phase of the program.

Designated to conduct the clinical phase of the War Emergency Course were 40 Army general hospitals geographically distributed throughout the nine service commands. A meeting of the chief occupational therapists of these hospitals and the occupational therapy consultants in those commands which had such personnel was convened in New York, N.Y., on 11, 12, and 13 November 1944, for the purpose of coordinating the clinical training program and discussing problems incident to training requirements.

In August 1944, the clinical portion of the War Emergency Course was opened to students who had completed the equivalent of the academic education in regular civilian training courses.[30] Furthermore, students who had satisfactorily completed some part of the apprentice period of practical experience in accredited civilian hospitals were acceptable for completion of this period in selected Army hospitals. In extending subsidized training to students of regular civilian courses, approximately 150 additional apprentices were enrolled and subsequently employed on the staffs of Army hospitals as graduate occupational therapists.

On 22 February 1945, The Surgeon General requested permission to increase from 600 to 700 the total number of students to be trained in the War Emergency Course.[31] This increase was made necessary

[29] Clinical Training Program for Emergency Course Students in Occupational Therapy, 34 Weeks.

[30] Army Service Forces Circular No. 263, 15 Aug. 1944.

[31] Letter, The Surgeon General, to Commanding General, Army Service Forces, 22 Feb. 1945, subject: Occupational Therapists.

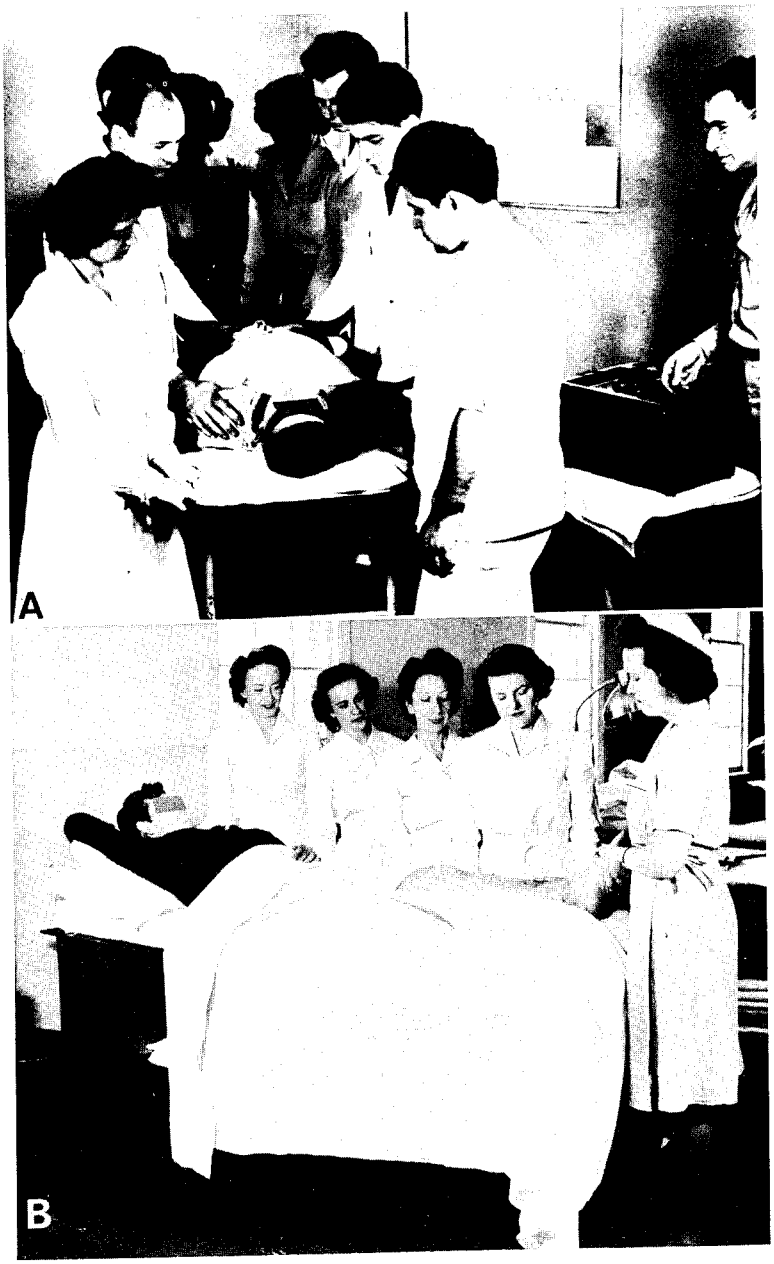


FIGURE 44—Clinical learning experiences, War Emergency Course, World War II. A. Observation of electroshock therapy in psychiatric section. B. Observation in physical therapy clinic.

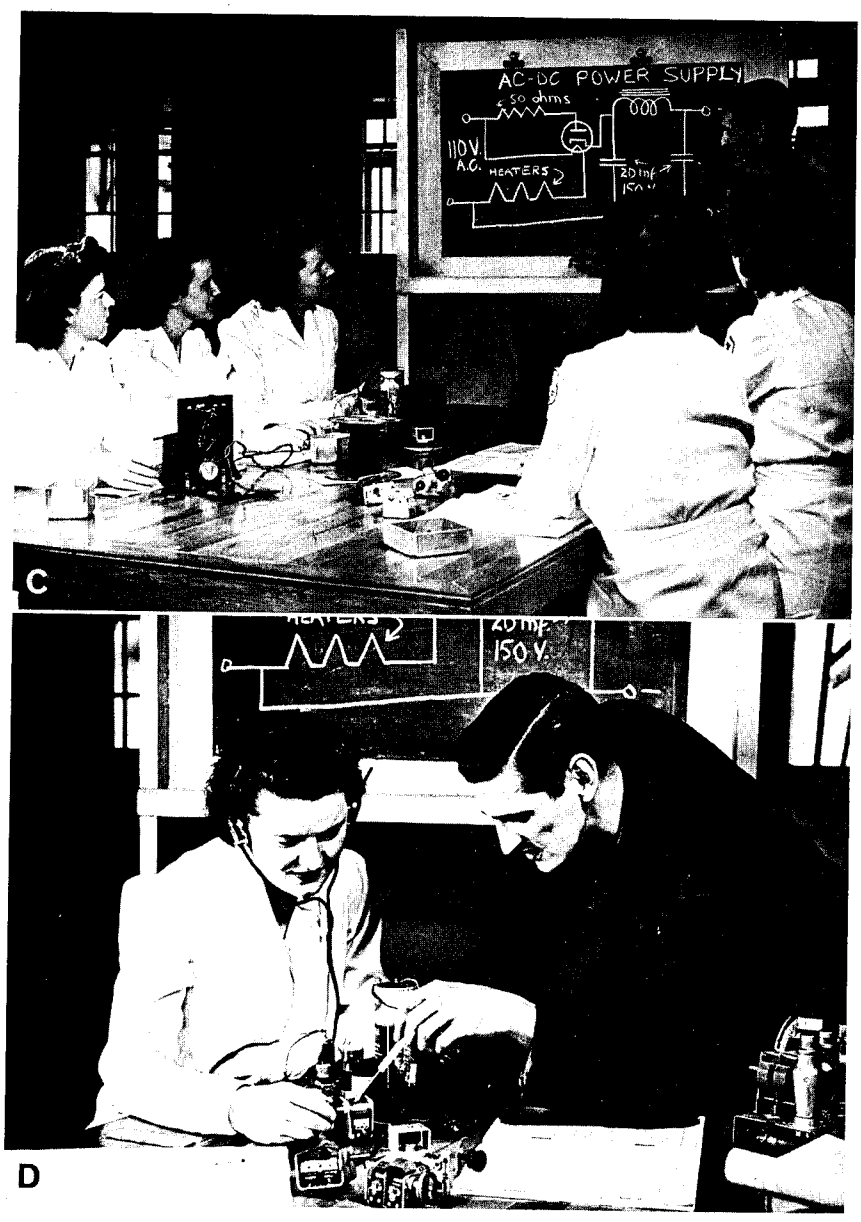


FIGURE 44—Continued. C. Class instruction in fundamentals of electricity. D. Individual practical instruction.



FIGURE 45—Classes for occupational therapy apprentices, Battey General Hospital, Rome, Ga. (Top) Anatomy. (Bottom) Kinesiology.

because of the additional requirements of hospitals not anticipated at the time of the original request.

Some relevant statistics on the War Emergency Course are contained in chart 4, which shows the 18-month period of input of the didactic and clinical phases of the course, and in table 9, which indicates the flow of trainees through the academic and clinical phase of the course.

APPOINTMENTS, CLASSIFICATIONS, AND SALARIES OF TRAINEES

The Medical Department had long desired that all civilian positions including that of the student dietitian be brought within competitive classified civil service status. This became effective in February 1939 when all civilian positions in Army hospitals, including student dietitians at Walter Reed General Hospital paid from regular appropriations, were so classified.[32] Authority was received by the Surgeon General's Office to give classified status to the 10 student dietitians who entered training on 1 September 1939 and were appointed without civil service examinations. However, positions of these students remained ungraded for another 5 years. They carried an annual cash salary of $420, from which there were deductions of $360 for quarters and subsistence and, after 1940, 3½ percent for retirement. Take-home pay at this time was approximately $45 per annum.

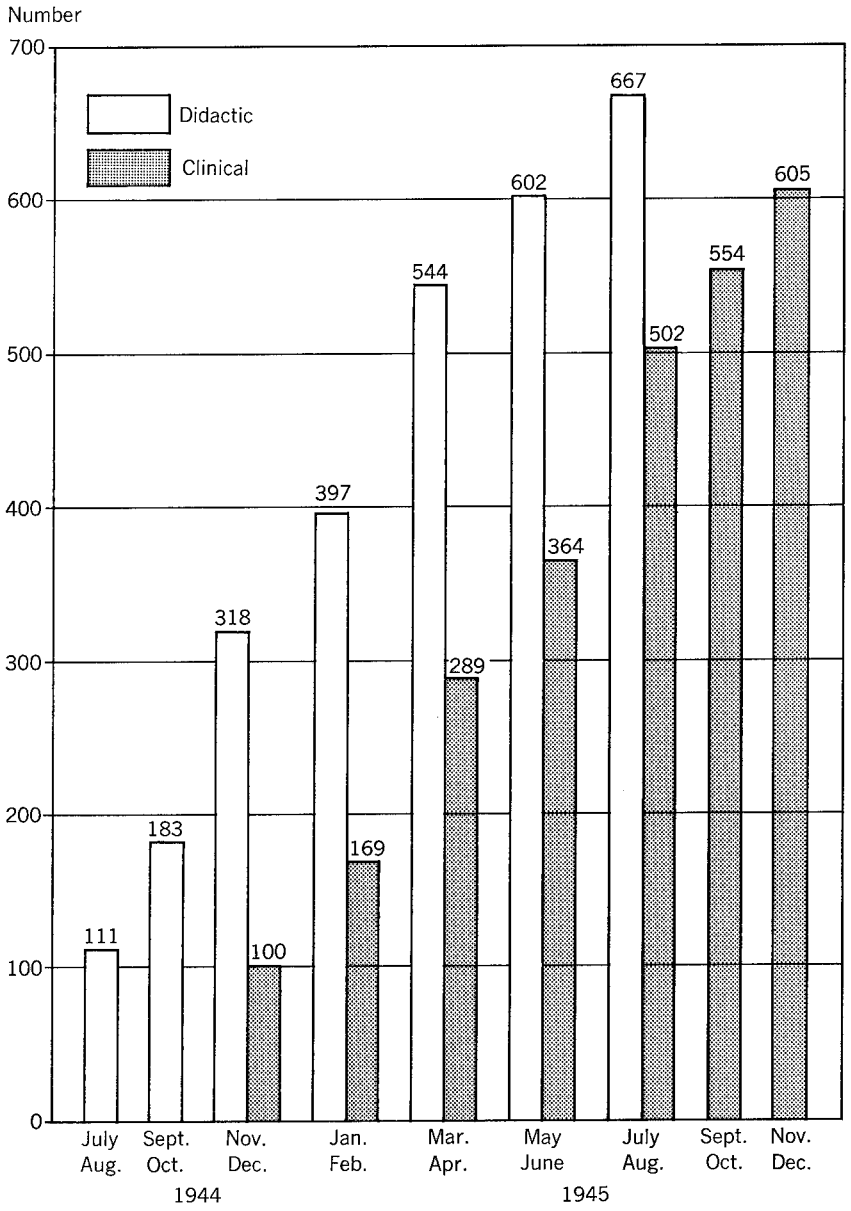
In 1941, when the emergency training program in physical therapy was initiated, physical therapy students were also classified in ungraded civil service positions, received the same salaries as student dietitians, and were subject to the same deductions. At this time, however, the Civil Service Commission authorized the additional training position of apprentice physical therapist and provided for reallocations from the position of student to that of apprentice and ultimately to that of graduate without prior approval or examination by the commission. The positions of apprentice physical therapist and apprentice dietitian were subprofessional and were designated SP–3. The salary for these positions was $1,440, less $180 for quarters and subsistence.

By 1944, when the emergency course in occupational therapy was initiated, training positions for these three groups of Medical Department specialists had been improved with reference to both classification and salary. Thus, the ungraded position of student (dietitian, physical therapist, or occupational therapist) was changed to SP–3, at $1,440 per annum, and the position of apprentice in each of these categories was upgraded from SP–3 to SP–4, at $1,620 per annum. Both salaries were enhanced by 20-percent overtime pay for schedules in excess of 40 hours per week. However, both were also subject to a deduction of 5 percent for retirement and $180 for quarters and subsistence.

Civilian students and apprentices were required to furnish their

[32] Executive Order 7916, 24 June 1938.

CHART 4—*The 18-month period of input, didactic and clinical phases,*[1] *occupational therapy, War Emergency Course, 1944-45*
[cumulative totals]



[1] The input reflects only those initially enrolled in the War Emergency Course. It does not include the approximately 150 regular course students who took only the clinical phase.

TABLE 9—*Flow of trainees, occupational therapy, War Emergency Course, 1944–45*

Institution	Academic phase, 4 months			Clinical phase,[1] 34 weeks	
	Original quota	Number enrolled	Transferred to clinical phase	Number completed	Cumulative total
1944					
July:					
Philadelphia School of Occupational Therapy, Philadelphia, Pa	50	23	18	18	18
University of Illinois, Urbana, Ill	25	23	23	21	39
Milwaukee-Downer College, Milwaukee, Wis	25	26	24	23	62
University of Southern California, Los Angeles, Calif	25	24	21	20	82
Boston School of Occupational Therapy, Boston, Mass	25	15	14	11	93
Total	150	111	100	93	
September:					
University of Southern California	30	26	23	22	115
Richmond Professional Institute, College of William and Mary, Richmond, Va	30	26	26	24	139
Mills College, Oakland, Calif	32	20	20	16	155
Total	92	72	69	62	
November:					
Philadelphia School of Occupational Therapy	50	53	42	39	194
Columbia University, New York, N.Y	35	29	28	26	220
University of Illinois	25	26	25	25	245
University of Southern California	30	27	25	22	267
Total	140	135	120	112	
1945					
January:					
University of Southern California	25	22	19	19	286
February:					
Mills College	30	30	30	24	310
Richmond Professional Institute	30	27	26	26	336
Total	60	57	56	50	
March:					
Philadelphia School of Occupational Therapy	60	55	49	39	375
Columbia University	35	30	28	29	404
University of Illinois	25	25	24	22	426

See footnote at end of table, p. 170.

TABLE 9—*Flow of trainees, occupational therapy, War Emergency Course, 1944–45*—Continued

Institution	Academic phase, 4 months			Clinical phase,[1] 34 weeks	
	Original quota	Number enrolled	Transferred to clinical phase	Number completed	Cumulative total
University of Southern California	35	37	37	24	450
Total	155	147	138	114	
June:					
Milwaukee-Downer College	75	58	52	48	498
July:					
Philadelphia School of Occupational Therapy	72	65	51	47	545
Grand Total	769	667	605	545	

[1] The clinical phase was conducted at 40 general hospitals distributed throughout the nine service commands.

Source: Laughlin, Richard L.: History of Physical Medicine. [Official record.]

uniforms, textbooks, and all incidental items. In all cases, the uniform was the same as the one authorized for wear by the graduates.

TRAINING PERFORMANCE REPORTS

Reports on the performance of apprentices during the clinical phase of their training were a part of the administrative and supervisory procedures followed by all three groups. For dietitian apprentices, these were completed 1 month before the end of the training period and forwarded to the Surgeon General's Office. A record of final physical examination, a photograph, and an application for appointment, in duplicate, accompanied the report.

For physical therapy apprentices, final reports of performance were completed after the training period by the clinical supervisors and forwarded to The Surgeon General.[33] These reports provided information about the trainee's proficiency, the amount of clinical practice completed, personality traits, and adaptability for commissioned military service. They were retained as a part of the trainee's permanent record in the Surgeon General's Office.

A report on each occupational therapy apprentice[34] was completed by the hospitals at periodic intervals during the 34-week program and submitted in duplicate to The Surgeon General. From that office, one copy was sent to the schools in which apprentices had received their academic instruction and from which they would be certified eligible for registration on satisfactory completion of the total course.

As had been provided for the academic phase, The Surgeon General was not only responsible for overall supervision of the clinical pro-

[33] WD AGO Form 8–181, 1 May 1945, [Revised] Report on Apprentice Physical Therapist, Medical Department, U.S. Army.

[34] SG Form 951, 21 Dec. 1944, Apprentice Occupational Therapy Report.

grams but was also authorized to separate an apprentice from a course at any time for failure to maintain satisfactory clinical performance, inability to adjust to hospital service, or other just cause.

MAINTENANCE OF EDUCATIONAL AND PROFESSIONAL STANDARDS

As already noted, emergency and accelerated training programs in dietetics, physical therapy, and occupational therapy had been developed in conjunction with officials or committees of the professional organizations concerned. Thus, these courses met the minimum educational requirements of the appropriate accrediting agencies, namely, the American Dietetic Association and, for physical and occupational therapists, the Council on Medical Education and Hospitals, American Medical Association.

Throughout the war, despite the personnel shortages which beset all three groups, The Surgeon General maintained these educational standards. However, each group had some problems in this respect. In the fall of 1944, the Civil Service Commission questioned the need for the strict educational requirements for student dietitians as a prerequisite for training. The question arose from the Commission's interpretation of the provision in the Veterans' Preference Act of 1944 (Chapter V, pp. 101–136) which eliminated minimum educational requirements as a qualification for other than scientific, technical, or professional positions specified by the Commission.

The Civil Service Commission's interpretation came as a surprise to the Surgeon General's Office. In a letter of protest, Maj. Gen. George F. Lull, Deputy Surgeon General, stated:[35]

> The dietitian in the Medical Department of the Army is a commissioned officer. She assists the medical officer by filling his diet prescriptions. It is, therefore, most important that the best qualified individuals be obtained for training. It is highly improbable that this type of personnel could be secured if the educational requirements are discontinued.

Other points were brought out which stressed the dietitian's duties and responsibilities for planning, supervising, instructing, and maintaining accounts and records.

A favorable reply was received:[36]

> In certifying persons for the position of student dietitian, apprentice dietitian, student physiotherapy aide and apprentice physiotherapy aide, only those eligibles will be certified who meet the requirements prescribed by the War Department as necessary for commissioned officers.

Occupational therapists also had some problems with maintenance of educational standards and with physical standards as well. Although the majority of applicants for the War Emergency Course were qualified

[35] Memorandum, Maj. Gen. George F. Lull, Deputy Surgeon General, to U.S. Civil Service Commission, 12 Sept. 1944, subject: Educational Requirements for Dietitians.

[36] Letter, M. L. A. Mayer, Executive Director, Civil Service Commission, to Maj. Gen. George F. Lull, Deputy Surgeon General, 24 Oct. 1944.

and acceptable under the requirements established for eligibility, a small percentage was deemed unsuitable by The Surgeon General for reasons of academic achievement, physical condition, or personality disorder. The Civil Service Commission observed some practices consistent with its founding philosophy but inconsonant with the high standards believed necessary for the emergency course. This complicated the work of the Surgeon General's Office in accepting some of the persons certified. One of these was the advantage given on the basis of preference allowed veterans, the disabled, wives, and widows, which required the acceptance of several candidates neither physically nor educationally qualified according to stated requirements. Another was the tendency toward extreme liberality in substituting experience for education.[37] Occasionally, The Surgeon General contested and won his argument against some of these unqualified certifications but, more often, they had to be accepted and subsequently disqualified on the basis of failing to meet the physical or academic standards of training.

The educational prerequisite of college graduation with major study in physical education for civilian students taking the physical therapy course had been established by the Medical Department as the entrance requirement before 1941. To make this training available to more individuals, approval was requested in May 1944 to change the educational requirement to include graduation from an approved college with major study in the field of biologic sciences. While this revision was not published until October, it was informally approved earlier, and was used in the selection of students enrolled subsequent to August 1944.

Military applicants for the physical therapy course were required to have completed not less than 2 years (60 semester hours) in an approved college with satisfactory courses in biologic and other sciences. In interpreting the term "satisfactory courses in biology and other sciences," it was established that a minimum of 15 semester hours would be required, selected from among the following subjects: anatomy, bacteriology, biology, chemistry, hygiene, kinesiology, physics, physiology, psychology, and zoology.

This change in the educational requirement represented a departure from the previously established prerequisite of college graduation or equivalent with major study in physical education for Army physical therapy training courses. In the selection of students with a 2-year college background, there was considerable concern in some military and civilian areas that the Army would jeopardize professional standards. While the Army did depart from its previously established prerequisites, it still conformed to the current minimum standards as established by the Council on Medical Education and Hospitals, American Medical Association.

[37] Applicants were permitted to substitute year-for-year up to a maximum of 2 years, 1 year of education in an approved art school for 1 year of the required education, and applicants who had had 2 years of teaching experience in arts and crafts or industrial art could substitute this experience for 1 year only of the required education.

In October 1944, after completion of the first year of these courses for enlisted women, in order to assure a better selection of students the minimum requirement in science hours was increased from 15 to 26 semester hours, with 6 hours as the minimum in biology. The remaining hours were selected from among courses in anatomy, bacteriology, chemistry, entomology, hygiene, kinesiology, parasitology, physics, physiology, psychology (maximum 3 semester hours), zoology, or other courses listed as biologic or natural sciences. This change was necessary because many of the 2-year college students with only 15 hours in the sciences were not academically prepared to cope with the Army's intensive training program.

The number of students with a 2-year college background constituted only 9 percent of the total number of enlisted students enrolled from October 1943 to November 1945. The average number of college years for the overall total of these students during this period was 3.7 years (table 10).

It should be pointed out that the composite training period (student and apprentice phases) for civilian physical therapy students was 12 months, while the composite training period for enlisted students was 9 months. In view of the previous military orientation of enlisted students and the vast amount of clinical material available for observation and practice in general hospitals conducting training programs for these women, it was considered that 3 months of supervised clinical practice would be sufficient. Subsequent experience demonstrated that this assumption was sound.

Clinical practice hours afforded 97 enlisted apprentice physical therapists during 1944 revealed that the average number of hours was far in excess of the 400 clinical hours then required by the Council on Medical Education and Hospitals, American Medical Association.

SCHOOLS AND HOSPITALS CONDUCTING TRAINING COURSES FOR THE ARMY

Emergency training programs which were established during the war to increase the numbers of dietitians, physical therapists, and occupational therapists involved educational institutions and numerous civilian and military hospitals.

Participating in the training of dietitians were 15 civilian hospitals which conducted the student phase, 33 Army hospitals[38] which conducted the apprentice phase, and 4 Army hospitals which conducted both phases. The earliest course began in August 1942. Civilian institutions completed their Army courses in 1945, and all Army accelerated programs except that at Brooke General Hospital, which continued both student and apprentice training into the peacetime years, closed in March 1946.

[38] One of these, McCloskey General Hospital, Temple, Tex., conducted only one course, from 15 June 1945 to 1 January 1946, for five members of the Women's Army Corps.

TABLE 10—*Educational background of enlisted members of the Women's Army Corps enrolled in Army physical therapy training courses, 1943–45*

Date	Degree		Years of college	
	Master's	Bachelor's	Three	Two
October 1943–January 1944		30	3	16
January–April 1944		115	6	3
April–July 1944		46	18	18
July–October 1944	10	79	15	5
October 1944–January 1945	5	56	12	4
January–April 1945	1	95	17	9
April–July 1945	2	57	11	6
July–November 1945	1	44	11	2
Total	19	522	93	63

Source: Compiled from records maintained by Maj. Emma E. Vogel, director of physical therapists, Surgeon General's Office, 1942–47.

A large number of both schools and hospitals were concerned in the training programs for physical therapists. Fifteen civilian institutions conducted 38 courses of the 6-month didactic phase of emergency physical therapy training (table 11). This was followed by 6 months of apprentice training in Army hospitals. In addition, 10 Army hospitals conducted 33 emergency 6-month didactic courses for civilian students and 28 for enlisted students. The first emergency course was started in July 1941, but civilian schools did not start this program until 1942. These emergency physical therapy training programs were discontinued soon after V–J Day. However, the Army hospitals which had conducted the didactic phase of training continued in operation until 10 February 1946 and hospitals accepting these students for applicatory training were necessarily involved for another 6 months.

The 21 emergency courses for occupational therapists were given at 8 civilian schools, while the clinical phase of this program was conducted at 40 Army hospitals. The school courses started in July 1944 and terminated in November 1945. However, the applicatory phase of training for this final group extended 8 months beyond the war and reductions in force during this period necessitated transfer of the last 51 apprentices, who were scheduled to graduate in July 1946, to Veterans' Administration hospitals for both pay and training in the last few months of their educational program.

EVALUATION OF EMERGENCY TRAINING PROGRAMS

The procurement of qualified medical specialist personnel in sufficient numbers to meet the needs of the Army could not have been accomplished without the emergency training programs. Both dietitians and physical therapists numbered approximately 1,600 at the peak of their strengths. Although the dietitians procured only 21 percent of their strength from Army training courses, physical therapists realized approximately 55 percent of their wartime strength from this source. Occupational therapists, although the smallest group numer-

TABLE 11—*Emergency physical therapy training courses conducted by civilian institutions, 1942–45*

Institution	1942	1943	1944	1945
Sargent College of Boston University, Cambridge, Mass	X		X	
Bouvé-Boston School, Cambridge, Mass		X	X	X
Children's Hospital, Los Angeles, Calif	X	X	X	X
D. T. Watson School of Physiotherapy, Leetsdale, Pa	X	X	X	X
Duke University Medical School, Durham, N.C		X		
Harvard University Medical School, Boston, Mass	X	X	X	
Hospital for Special Surgery, New York, N.Y	X	X	X	
Mayo Clinic, Rochester, Minn [1]	X	X	X	X
Northwestern University Medical School, Chicago, Ill	X			
Richmond Professional Institute of the College of William and Mary, Richmond, Va			X	
St. Louis University School of Nursing, St. Louis, Mo			X	
Stanford University Medical School, Palo Alto, Calif	X	X	X	X
University of Iowa Medical School, Iowa City, Iowa[1]		X	X	X
University at Buffalo of the State University of New York, Buffalo, N.Y	X	X		
University of Wisconsin Medical School, Madison, Wis		X	X	

[1] No tuition.

Source: Vogel, Emma E.: Physical Therapists of the Medical Department, United States Army. [Official record.]

ically, trained 78 percent of their strength of approximately 900 through the emergency courses. In each case, the professional group concerned thought that the conduct of the applicatory phase of training in military hospitals was of value in familiarizing students with Army procedures. This was especially true for physical and occupational therapists with reference to experience provided in treatment of war injuries.

There was another value which dietitians, physical therapists, and occupational therapists attributed to the emergency training courses. This was the effect these educational programs had on the profession as a whole. The impetus to recruitment that was felt in all three of these health fields resulted in increases in the number of civilian schools during the war period, as follows: Dietetic internships, from 38 to 60; physical therapy, from 15 to 36; and occupational therapy, from 5 to 21.

Both during and after the war, there was considerable comment about the lowering of standards inherent in the accelerated and emergency physical therapy training programs conducted by the Army. In

1945, Dr. Frances A. Hellebrandt, Medical Director, Baruch Center of Physical Medicine, Medical College of Virginia, Richmond, Va., made a careful analysis of the didactic 6-month phase of the Medical Department physical therapy course.[39] Doctor Hellebrandt had served as medical director of the physical therapy training course for enlisted members of the Women's Army Corps conducted under War Department contract at the University of Wisconsin from October 1943 to October 1944. The following observations by this outstanding leader in the field of physical medicine are of interest:

> * * * Careful study of the scope and content of the WAC course suggests that in reality it surpasses anything previously attempted by the average apprentice type of approved hospital technician training school.
>
> * * * * * * *
>
> The Army has demonstrated that the essentials of subject matter in a variety of technical fields can be taught effectively by new methods which drastically shorten the learning period. * * * We would be short sighted indeed if we failed to study the pedagogical experiments of the war. * * *.

Perhaps the most convincing testimonial to success of the emergency course in occupational therapy lies in the unanimous agreement favoring establishment of a similar program in event of a similar future need, among both school and clinical personnel involved in the training. Commenting on an overall evaluation of the course, they singled out the following as reasons for its success: A high degree of maturity; prior level of education, preparation in skills, or prior teaching experience; high motivation; and selection. Other positive values noted included supplying personnel for the emergency and placement of the academic portion in regular schools and the clinical phase in on-the-job training.

Section III. Other Training Programs During Wartime and Postwar Periods

POSTWAR PERIOD IN DIETETICS

Effective in September 1946, the dietitian training course at Brooke General Hospital included both student and apprentice phases. The training of student dietitians at Brooke General Hospital was not terminated at the end of the war because of the continued critical shortage of dietitians in the Army. When students were appointed for training, they were required to sign a statement that they understood that, upon successful completion of the course, they were expected to accept a commission as dietitian in the Medical Department. Several months prior to the completion of training they were contacted to start processing application papers for their commission.

These students were trained during a period of postwar instability.

[39] Hellebrandt, F. A.: Analysis of the WAC Emergency Physical Therapy Training Program. Arch. Phys. Med. 26: 502–514, August 1945.

In addition, there was a large turnover in the staff at Brooke General Hospital because many dietitians were anxious to return to civilian life upon completion of their military commitments. The status of the student as a civilian in a military organization was still most difficult. As a result, out of the class of 14 students who entered Brooke General Hospital in July 1945 only 7 accepted commissions upon completion of training in July 1946. All of the class of 10 student dietitians who entered training in September 1946 graduated; none accepted commissions. For the course beginning in September 1947, eight student dietitians were selected; only two completed training and accepted commissions. Even though statements acknowledging service obligation were required there was a tendency on the part of the students to feel no obligation to give any service to the Military Establishment in return for their government education. With the impetus and pressure of war gone, since 1945, there was an entirely different attitude toward the acceptance of a commission.

Many of the problems that were encountered in the training of dietetic interns after V–J Day were the same as those encountered by staff dietitians early in the war who were civilians in a military organization. Since dietitians were responsible for directing and supervising large numbers of both civilian and military employees, it was felt that during the training period a student dietitian should be taught to accept responsibility within the organization and to direct personnel when in actuality they did not have this authority within the military organization. There appeared to be only one proper solution. It was hoped that when Army dietitians received Regular Army status, the student dietitians could be commissioned in the Reserves and serve 2 years' active duty. This would include the 1 year of training after which the Medical Department would be assured of the services of these dietitians for at least another year.

ADVANCED COURSE IN MESS ADMINISTRATION FOR DIETITIANS

In May 1946, The Surgeon General established a program of advanced instruction in mess administration for dietitians at the Medical Field Service School (then known as the Army Medical Department Schools). The purpose of this course was to give additional training to dietitians in procurement of food, cost accounting, and equipment and acquaint them with newer trends in administration. Classes of 2 weeks' duration were scheduled at a frequency of one class per month, 12 officers each; the first class began on 15 June 1946. Fourteen courses were given in 1946 and 1947, and were attended by 136 Army, 8 Air Force, and 2 Veterans' Administration dietitians.

The 80 hours of classwork presented at this course included organization of a dietetic division and relation of that division to various divisions and services in a hospital, 2 hours; personnel in a dietetic

division and ward diet kitchens, 5 hours; menus and food procurement, 23 hours; food inspection, 9 hours; food storage, 1 hour; stock control, 1 hour; food preparation and service, 13 hours; equipment, 8 hours; accounting procedures for hospital funds, 10 hours; examinations, 2 hours; and military time, 6 hours.

The course was an important milestone in the progress of the Army dietitian. Since permanent military status had become a certainty, this course prepared the Army dietitians for the additional responsibilities they would be expected to assume as Regular Army officers. In addition to updating administrative and dietetic knowledge, the course provided an opportunity for roundtable discussion of problems. Recommendations for future improvements in the food service of Army hospitals were developed from those problem-solving sessions.

VOLUNTEER PROGRAMS IN PHYSICAL THERAPY

In July 1945, it was unofficially learned that civilian women volunteers were assisting in the physical therapy department at Billings General Hospital, Fort Benjamin Harrison, Ind. These women of varied backgrounds had been recruited by the Marion County Civil Defense Council. Before coming to this hospital, they had completed approximately 32 hours of orientation in physical therapy procedures at the Veterans' Administration Hospital, Indianapolis, Ind.

Early in 1945, the Commanding Officers of Thayer General Hospital, Nashville, Tenn., and Crile General Hospital, Cleveland, Ohio, asked The Surgeon General for permission to train civilian women patriotically inspired to contribute in the war effort by assisting in the physical therapy department. The Surgeon General interposed no objection to these plans, provided—

1. The program was coordinated with the hospital chapter of the Red Cross, since this was the only organization authorized to render volunteer assistance to the Medical Department.[40]

2. The commanding officers of these hospitals assumed the responsibility for this instruction.

3. A copy of the instructional program was furnished The Surgeon General.

4. The commanding officers concerned would assume full responsibility as far as liability was concerned.

It was further stressed that in no sense was it to be construed that those who completed this training were to be considered physical therapists, since they were to be trained only to assist physical therapists and to relieve them of many time-consuming nonprofessional duties.

In the Crile General Hospital program, these women were given 86 hours of basic instruction and demonstration at the Cleveland Clinic Foundation and the Cleveland Rehabilitation Center. This was fol-

[40] Army Regulations No. 850–75, 30 June 1943.

lowed by 40 hours of demonstration and instruction at the hospital.

At Thayer General Hospital a more comprehensive program, planned by the director of physical therapy, was coordinated with Vanderbilt University, Nashville, Tenn., which granted 4 hours of college credit for satisfactory completion of the course and subsequent practical experience. The class was composed of college graduates, graduate nurses, and physical education students in either their third or fourth year at George Peabody College for Teachers, also in Nashville, or at nearby Vanderbilt University. These women showed a great interest in physical therapy and were sincere in their efforts to be of service. Here a monitor system was adopted by which each staff physical therapist was responsible for a designated number of volunteer workers.

TRAINING ENLISTED PHYSICAL THERAPY TECHNICIANS

The Medical Department had long recognized that trained enlisted assistants were necessary to the operation of a physical therapy clinic. Before the war, the training of male enlisted assistants had been conducted entirely as an on-the-job activity. The necessity for formal training, however, was not demonstrated until World War II. Due to the loss of trained male technicians to combat units, in early 1945, the service commands were requested to forward information relative to their needs for enlisted women trained as physical therapy technicians. On the basis of this information, a formal training program was established. Applicants for these courses were required to have satisfactorily completed 2 months' training at the Medical Department Enlisted Technicians School (now Medical Field Service School). Those selected to attend were carefully screened for adaptability and interest in this field by the staff of the school, the medical director of physical therapy, and the chief physical therapist, Brooke General Hospital.

The program of instruction prepared by the Physical Therapy Branch, Surgeon General's Office, and approved by the Director of Military Training, War Department,[41] consisted of a 4-week course (192 hours) in theory and practice in selected physical therapy procedures and a general orientation in this field of therapeutics. To prepare enlisted women for hospital assignments as rapidly as possible, courses were established in 13 general hospitals.[42] Graduates were eligible for the classification of enlisted physical therapy technician.[43]

By V–E Day, the number of technicians on duty and in training was

[41] Program of Instruction for Theoretical and Applicatory Training of Physical Therapy Technicians (WAC), approved by War Department, Army Service Forces, on 2 Apr. 1945.

[42] Army and Navy General Hospital, Hot Springs, Ark.; Borden General Hospital, Chickasha, Okla.; Cushing General Hospital, Framingham, Mass.; England General Hospital, Atlantic City, N.J.; Fletcher General Hospital, Cambridge, Ohio; Harmon General Hospital, Longview, Tex.; Kennedy General Hospital, Memphis, Tenn.; Mayo General Hospital, Galesburg, Ill.; Nichols General Hospital, Louisville, Ky.; Northington General Hospital, Tuscaloosa, Ala.; Oliver General Hospital, Augusta, Ga.; Valley Forge General Hospital, Phoenixville, Pa.; Wakeman General Hospital, Camp Atterbury, Ind.

[43] War Department Technical Manual 12–427, 12 July 1944; Change 1, 12 Apr. 1945.

anticipated to be sufficient to meet the needs of the Medical Department. This training program, therefore, was terminated upon completion of the course beginning on 9 July 1945. Four hundred and thirteen enlisted women were successfully trained in this program.[44]

The utilization of these assistants contributed materially to the successful operation of physical therapy clinics and clearly demonstrated the value of the formal training program. The commissioned physical therapists welcomed this assistance as it enabled them to devote more of their time to professional duties. Even before the courses were terminated, preliminary planning was initiated for a more comprehensive course at a later date, should a resumption of the program be indicated. This proved to be true, and in 1949, the course was resumed at the Medical Field Service School and continued to be offered whenever there was a requirement for assistant personnel.

With the expansion of physical therapy activities overseas, additional personnel was needed. There was not only an inadequate supply of physical therapists, but the enlisted personnel assigned to the clinics were, as a general rule, untrained and unfamiliar with physical therapy procedures. Training was necessary and this was done either through on-the-job training or by establishing formal courses of instruction.

In the Territory of Hawaii, for example, on 20 November 1943, formal physical therapy training courses of 3 months each were begun at Tripler General Hospital, North Sector General Hospital, and the 147th General Hospital. These courses were given at the direction of Lt. Gen. Robert C. Richardson, Jr., Commander, Pacific Ocean Areas.[45] Each hospital in the area at that time was directed to send one nurse and one enlisted man. Any nurse who was interested was eligible as was any enlisted man who had previous experience or who was interested in further study in this field. After completing the course, the graduates were assigned to general, station, and field hospitals.[46] They did not in any way replace physical therapists but they filled the gap until more physical therapists were available.

COURSE FOR OCCUPATIONAL THERAPY ASSISTANTS

If either the recruitment of graduate occupational therapists had yielded larger numbers or the War Emergency Course had been instituted at an earlier date, the training course for occupational therapy assistants would not have been necessary. However, by June 1944, there were only 180 occupational therapists on duty in Army general hospitals and the prospect of more than a year's time elapsing before graduates of the War Emergency Course could be qualified for staff appointments.

[44] Medical Department, United States Army. Personnel in World War II. Washington: U.S. Government Printing Office, 1963, p. 232.
[45] Physical Therapy History of Pacific Ocean Areas and Middle Pacific, pp. 5, 6. [Official record.]
[46] Report, 1st Lt. Barbara M. Robertson, MDPT [February 1946], Physical Therapy in Saipan, p. 7.

The need for still further means of alleviating the personnel shortage was acute.

On 2 August 1944, the director of the Reconditioning Consultants Division, Surgeon General's Office, reported to The Surgeon General that a program for training enlisted women as occupational therapy assistants had been submitted.[47] The 1-month course was approved by the Army Service Forces on 16 November 1944.[48]

In January 1945, recruitment for this course was closed, and, during the remaining 10 months of its operation, service commands submitted requests for quotas to send to the course personnel already in the Women's Army Corps and on duty in their installations. Under this plan, the Surgeon General's Office approved qualifications of candidates, allotted quotas to the service commands, and return trainees, on completion of the course, to the service commands for assignment to hospitals having established occupational therapy programs.

Applicants for training as occupational therapy assistants were required to present the following prerequisites in addition to completion of basic military medical training: A civilian background of teaching experience plus some knowledge of a handicraft or expert ability in some handicraft plus high school education and an aptitude for teaching.

Halloran General Hospital, Staten Island, N.Y., was selected as the site of training, and Capt. Josephine E. Springer, WAC, chief occupational therapist at Tilton General Hospital, Fort Dix, N.J., was transferred to Halloran General Hospital and placed in charge of this program. Since these trainees were enlisted personnel, it was thought advisable to have their course under the direct supervision of a commissioned officer in the same corps. Experience proved that this was a wise decision from the point of view of both discipline and instruction. Captain Springer was assisted in conduct of training by WAC Sgt. Martha Gilbert (registered occupational therapist) and by Misses Orvilla Yost and Marguerite Silverman of Halloran's civilian occupational therapy staff.

On 9 December 1944, a group of 14 students reported for the first class, and with the enrollment of the fifth class, in April 1945, 141 students had attended the course. At this time, a request for discontinuance of the course was made on the basis of assignment of all recruits and this was readily approved. The following month, however, a request for reestablishment of the course had to be submitted on the basis of need for personnel because of the expanding convalescent hospital program. Once more, Army Service Forces approved The Sur-

[47] Memorandum, Col. Augustus Thorndike, MC, for The Surgeon General, 2 Oct. 1944, subject: Semimonthly Report of the Reconditioning Consultants Division for the Period 16–30 September 1944.

[48] Memorandum, Brig. Gen. R. W. Bliss, Chief, Operations Service, Office of The Surgeon General, for Commanding General, Army Service Forces, 4 Nov. 1944, subject: Orientation Training for Occupational Therapy Assistants (WAC), with 1st indorsement thereto, 16 Nov. 1944.

geon General's request.[49] The promptness of each action and the unexpected supply of recruits in the interim period enabled the classes to run consecutively to completion later in the year.

With graduation of the eleventh class, on 27 October 1945, the occupational therapy assistants training course for enlisted members of the Women's Army Corps was discontinued. Of the 295 students enrolled in this course, 278 satisfactorily completed requirements and were subsequently assigned to selected Army hospitals where they assumed much of the burden of the diversional activity programs.

[49] Transmittal Sheet, Col. S. M. Prouty, G.S.C., Executive, Office of the Director of Military Training, Army Service Forces, to The Surgeon General, 7 June 1945, subject: Orientation Training for Occupational Therapy Assistants (WAC), with inclosure 1 thereto, 28 May 1945.

CHAPTER VII

Professional Services of Dietitians, World War II

Lieutenant Colonel Thelma A. Harman, AMSC, USA

ORGANIZATION AND DUTIES

The commanding officer of an Army hospital was responsible for the hospital mess just as he was responsible for the other departments. He designated an officer, known as mess officer or director of dietetics, to have immediate charge of the mess. This officer was responsible to him for the administration and functioning of all the hospital messes. The mess officer was also custodian of the hospital fund which even in small hospitals sometimes involved more than $20,000 a month.[2] He collected all subsistence charges and handled accounts for all food used in the hospital messes. The dietitians were responsible to the mess officer for all details of food preparation and service, and these always included planning the patients' dietary modifications.

Early in the forties, hospital mess officers were usually medical officers extremely capable in administration who were potential hospital commanders. Thus, they had working familiarity with their mess duty requirements of high standard messing procedures for both patients and duty personnel. Eventually, medical officers were needed more in patient care areas and as a result they were no longer assigned as mess officers. Medical Administrative Corps officers, many of whom were former mess sergeants or recent graduates of an officer candidate school, assumed this responsibility.

The Army hospital mess functioned in accordance with standardized Army methods. This was a distinct advantage for it made possible the transfer of personnel from one organization to another without disrupting the operation of the units involved because of conflict of authority or differences in methods used.[3] Under the mess officer, the mess sergeant was required to perform many administrative duties and was generally responsible for all details of food supply. He was an integral part of every Army hospital mess.

As the Army expanded in size, dietitians were authorized for duty in the larger hospitals. In many hospitals, they were given the food production responsibilities formerly assumed by the mess sergeant.

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[1] Unless otherwise indicated, the primary source of information for this chapter is: Manchester, Katharine E.: History of the Army Dietitians. [Official record.]

[2] Viquers, R. T.: The Dietitian in a Small Hospital. J. Am. Dietet. A. 19: 282–284, April 1943.

[3] Johnson, W. M.: The Dietitian in a Large Army Hospital. J. Am. Dietet. A. 19: 284–286, April 1943.

With the many problems in obtaining food supplies and qualified personnel for hospital messes, it became the responsibility of the mess sergeant to maintain personnel records and a food inventory and to supervise mess sanitation. Usually, a noncommissioned officer was responsible for preparing the work schedules of cooks, assistant cooks, vegetable men, dishwashers, and mess attendants. The mess sergeant did not supervise the dietitian, but when their duties overlapped she assisted him.

The civilian-trained dietitians had to adjust to Army procedures and, in some cases, work closely with a mess officer who had little or no training in mess management. The dietitians' duties included the preparation of diet menus; instruction of cooks in the preparation of food; supervision of the preparation, cooking, and serving of all diets; instruction of patients with diabetes in measuring and weighing food; and general supervision of the preparation of all food served to hospital patients. As a civilian employee, she did not ordinarily have control over mess personnel. However, in some of the larger hospitals, mess personnel specifically assigned to duty in the kitchens were under the authority of the dietitian in charge. In these cases, the authority was designated by the commanding officer.

The scope of the dietitians' responsibilities was increased in 1941. They were to plan balanced menus with consideration of the ration value, supervise the preparation and service of all food to bed and ambulatory patients, and inspect waste. Furthermore, they were to direct the employees in the preparation, service, and storage of food and assist in ordering food supplies and procuring kitchen equipment. The dietitians were also to give instructions in and demonstrate the preparation of special diets to patients when such diets were ordered by the physician in charge.[4]

The directive which further defined the dietitians' duties emphasized that the mess sergeant, in addition to his experience as a general cook and his fair knowledge of the different food values, had to possess the ability to handle men, knowledge of simple figures, ability to purchase supplies in quantity, some knowledge of records, and a thorough knowledge of cleanliness, sanitation, and food conservation.

The large Army hospital messes functioned most effectively when both a dietitian and a mess sergeant were assigned in each kitchen (fig. 46). This was particularly true in the training of mess personnel where close supervision and coordination were required. Before the war, mess personnel were experienced, well trained, and capable of planning work on their own initiative. With mobilization and the influx of inexperienced personnel, complete organization of the mess department had to be accomplished in a relatively short period of time. The dietitian and mess sergeant often worked together in on-the-job training of mess personnel in food production. The dietitian provided

[4] (1) Circular Letter No. 7, Office of The Surgeon General, 8 Feb. 1941. (2) Circular Letter No. 109, Office of The Surgeon General, 28 May 1943.



FIGURE 46—Dietitian and mess sergeant checking the daily menu. (U.S. Army photograph.)

additional standardized recipes, prepared work schedules, and made job analyses.[5] They generally checked leftover food to provide for maximum utilization, maintained a constant check on food cost and waste, and charted the amount of food required for each ward so that the proper quantity could be loaded on the food carts and delivered just before the serving hours.[6]

At Billings General Hospital, Fort Benjamin Harrison, Ind., a large hospital with an average patient load of 1,500, mess personnel supervised by the dietitian and mess sergeant included military and civilian cooks, bakers, butchers, and mess attendants, German prisoners of war, and general prisoners. The head cook of the shift was responsible for carrying out the instructions of the dietitian or mess sergeant. He was accountable to them for the quality and quantity of food prepared on his shift, the organization of his shift, and the

[5] (1) Murray, E.: Duties of an Army Dietitian. J. Am. Dietet. A. 18: 676–678, October 1942. (2) The Quartermaster recipe book was not used in all hospital messes. This may have been due to a lack of awareness by some food service personnel that such an aid was available.

[6] Manchester, K. E.: The Dietitian in Army Service. J. Am. Dietet. A. 18: 30–31, January 1942.

assignment of work to his assistants. He was responsible for loading the ward food carts and for plate service in the messhall. The bakers used standardized recipes in meeting the production requirements of the dietitians. The butchers processed meats according to the exacting requirements (requisitions with definite specifications) of the dietitians and mess sergeants. Mess attendants assisted the cooks, acted as table waiters, performed sanitation tasks, and assisted in loading and checking the ward food carts.[7]

Although the dietitians were commissioned in 1943, their duties and responsibilities continued to vary according to the type and size of hospital to which assigned, the whims of some hospital commanders, and the dietitian's professional capability. This was general practice until about mid-1944.

In August 1944, a change in regulations more clearly defined the organization of the mess department.[8] The hospital commander was enjoined to exercise every precaution in the prevention of waste and misuse of property or supplies in the messes. Personnel assigned to mess management would be only those of known probity and good habits. There was no change in the mess officer's duties from earlier directives. Where dietitians were assigned, duties listed for them were more specific than formerly. They were to assist in the supervision of mess sanitation and were to have access to all mess records. Some dietitians had performed these tasks routinely before the change in regulations; however, this was done on a permissive basis in accordance with the desires of the hospital commander. Along with the general public, the military had also become waste and cost conscious. The regulation further stipulated that the mess sergeant would be directly responsible to the dietitian for the efficient management and operation of the patients' mess.

The manual on administration of fixed hospitals, published in November 1945,[9] provided detailed guidance in the operation of Army hospital messes (chart 5). The presentation of procedures and the necessary forms to be followed aided immeasurably in instituting and maintaining the highest mess standards.

Menu Planning and Food Requisitioning

The dietitian planned menus with the objective of satisfying the food habits of the majority and at the same time offering an adequate diet. She had to consider mess personnel abilities, adequacy of equipment, food habits, climate, season, availability of foods, forced issues of subsistence items,[10] and the subsistence income. The Army hospital

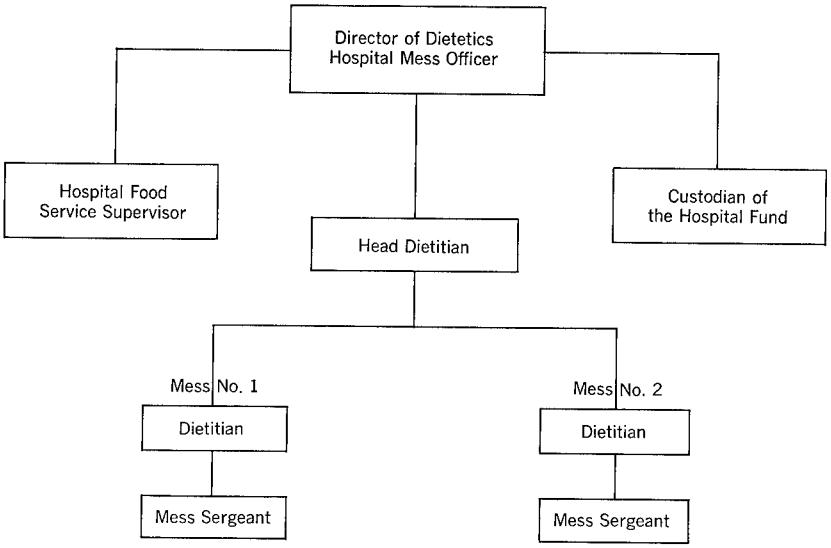
[7] History of Dietetic Department, Billings General Hospital, Fort Benjamin Harrison, Ind., 1944–46.

[8] Army Regulations No. 40–590, 29 Aug. 1944.

[9] War Department Technical Manual (TM) 8–262, 15 Nov. 1945, ch. VI.

[10] Forced issues were issues other than normal issues and were literally forced onto the using units. The issues included excess supplies of both perishable and nonperishable items. Generally, this measure was followed to avoid spoilage and to conserve storage space. Mission changes, as well as too high stock levels, resulted in forced issues.

CHART 5—*Organization of hospital dietetics division before 1947*



Source: War Department Technical Manual (TM) 8–262, 5 Nov. 1945, ch. VI.

menu was higher in calories than the civilian hospital menu for several reasons. The average military patient was younger than the average civilian patient, and had a longer hospitalization because he was discharged only when ready for duty. Finally, the master menu,[11] known as the domestic menu, which was high in calories, was used as a guide in menu planning in hospitals. Usually the head dietitian wrote the weekly menu for regular, light, soft, and liquid diets. In larger hospitals, this duty was performed by the administrative dietitians in the various hospital messes in order to insure maximum variety of popular food items. The therapeutic dietitian wrote the special diet menus.[12]

Hospitals in all service commands had menu planning boards composed of the director of supply, the mess officer, the assistant mess officer, and the head dietitian. These boards met at regular intervals to discuss problems involved in planning menus for the entire hospital.

The dietitian planned skeletal menus weeks ahead of use-dates so that she could requisition meat, perishable fresh fruits and vegetables, and staple food items for the hospital patient messes. Some food items were purchased by the mess officer from specified local venders or obtained from the local quartermaster. In writing her skeletal menus, the dietitian planned for the use of all parts of the carcass, such as

[11] The master menu, issued by the Office of The Quartermaster General, was prepared as a guide for all troop feeding. It was published each month, 3 months in advance, and provided three meals a day each day of the month. Each menu was different.

[12] Burns, H. C.: The Army Dietitian and Her Duties. J. Am. Dietet. A. 18: 28–30, January 1942.

meat for stew or hamburger. She also considered the probable patient census.

Army hospitals were allowed the money value of the garrison ration [13] plus 50 percent for both subsistence and patient welfare expenditures. Hospital commanders could make expenditures for non-food items from the hospital fund but such purchases had to contribute directly to the welfare, comfort, and pleasure of the patients. Since the income available for subsistence varied each month, the dietitian had to check the mess account frequently to control food costs. Thus, adjustments could be made in the menus being served during a certain period to avoid an extreme gain or loss at the end of the month.

Problems were presented in the planning of oversea hospital menus. The type of ration issued depended upon availability of food supplies and the mission of the hospital. Personnel had to be instructed in the preparation and use of dried eggs, dried milk, Spam, and large quantities of certain types of food such as corned beef and canned stews, which became monotonous in the diet of the patient. The dietitian, mess sergeant, and cooks experimented with these items in order to add variety and make the products acceptable.

The oversea hospital ration menu [14] was designated in 1942 for use in frigid and temperate or tropical zones and was based on the foods issued on the expeditionary force menus (processed, canned, and dehydrated food items). A substitution of items was required in every locality. The surgeon and the quartermaster had to work closely together to insure the best available issue of subsistence supplies. When perishable foods were available, they were substituted for nonperishable foods.

The oversea hospital ration menu was written for a 10-day period. Menus were included for regular, light, soft, and liquid diets. The percentage (established figures, not based on experience factor) distribution was: regular, 85 percent; light, 3 percent; soft, 6 percent; liquid, 4 percent; and miscellaneous special diets, 2 percent. The quantities of food planned for the 15 percent of special diets were sufficient to allow for the variations of diet which a patient might require. Food high in vitamins and minerals included tomatoes, tomato juice, lemon and orange powder, dried whole milk, and enriched flour. Vitamin concentrates were provided for patients required to be on special diets for some time.

Inspection of Food Waste

Beginning early in the war, a check was made on all food waste in Army hospitals. The use of standardized recipes, careful training and supervision of cooks in preparing foods, uniform servings to patients

[13] The ration consists of 39 components, the quality of which is prescribed by Federal specifications (Army Regulations No. 30–2210, 15 Mar. 1940).

[14] The earliest official reference to the oversea hospital ration is contained in: War Department Technical Manual (TM) 8–500, March 1945, p. 78.



FIGURE 47—Supervision of food service on a ward to assure uniform servings.

(fig. 47), and requisitioning proper quantities throughout the hospital contributed to reduction of food waste. By reducing food waste, the dietitian was able to serve higher quality food within the ration allowance.

Weighing all food waste was found to be one of the most effective methods of checking food losses. Both employees and patients were then more conscious of food waste as interpreted in dollars and cents value. Waste by individuals, both patients and staff, was checked regularly by many hospital commanders or executive officers. It was seldom necessary to remind the offending person a second time.

In a number of oversea units, hospital commanders eliminated individual waste through a variety of drastic measures. Several levied

expensive fines. Others posted listings of offenders on all bulletin boards. Still others required that the individual would eat all food either before leaving the dining hall or at the next meal.[15]

Ward Rounds

The dietitian made regular ward rounds at mealtime to check the quantity and palatability of the food with the patients, to determine their likes and dislikes, and the appearance of the trays. She noted and planned corrective action for any faults in food preparation or menu planning. Through her patient contacts, she was able to prepare menus with foods that would be more readily acceptable to them. One mess officer felt that patient feeding problems vanished under the guidance of a capable, well-trained dietitian. The cheerful dietitian who made ward rounds consistently, spontaneously corrected errors in food service, and gave consideration to individual peculiarities in food preferences contributed to morale and recovery.

The dietitian posted daily menus and instructions for serving trays in the ward diet kitchens. Wherever patients were permitted to select their diets, the dietitian was required to check their choices. The ward surgeon was then assured that the patient was ordering an adequate diet. If inadequate diets were selected, the dietitian offered suggestions for improvement.

Generally, the Army nurse was responsible for the preparation and service of trays in ward diet kitchens.[16] An early directive provided that the head nurse was accountable for the proper serving of all food on the ward and prompt delivery of diet orders to the hospital mess.[17] Generally, the nurse prepared the diet card covering diet requirements of ward patients for the ensuing 24 hours although, by directive, the ward officer was charged with this responsibility.[18]

Early in 1947, a directive was published which listed the responsibilities of ward officers, nurses, and dietitians for patient tray service.[19] The ward officer was to inspect routinely the food going to his patient, the manner in which it was served, and the ward diet kitchen. The nurse, in the absence of the dietitian, was to supervise the serving of all diets to insure that the prescribed food at the proper temperature was going to the patient. Also, the nurse was to insure that the amount of food ordered and received was correct. The dietitian assigned to a section of wards was responsible for assisting the nurse in the instruction of kitchen personnel and in securing food supplies needed

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[15] Personal knowledge of the author.

[16] Army Regulations No. 40–20, 31 Dec. 1934.

[17] Later revisions of the directive did not specify the duties of the head nurse. The nursing responsibility for ward food service, in most instances, was still assumed throughout World War II on the basis of Circular Letter No. 7, Office of The Surgeon General, 8 February 1941, and Army Regulations No. 40–590, 2 February 1942. "Rules for the management of diet kitchens will be prescribed by the commanding officer * * * according to the particular needs of each case."

[18] See footnote 8, p. 186.

[19] Circular No. 3, Office of The Surgeon General, 3 Jan. 1947.

for patients. The head dietitian was encouraged to attend the chief nurse's meeting in order that problems arising in the administration of ward diet kitchens could be discussed and coordinated. Hospital commanding officers recommended that mess officers and dietitians attend professional staff conferences so that open discussion of problems of dietary service could result in improvement of service.

FOOD PREPARATION AND SERVICE

In order to provide the most palatable and attractive food possible within the ration allowance, dietitians furnished standardized recipes and careful instructions to cooks. Dietitians at Brooke General Hospital, Fort Sam Houston, Tex., prepared a "daily instruction sheet" for the regular diet menu.[20] The purpose was to obtain uniform products of high quality in all messes. It contained specific instructions to cooks regarding recipes to be used, amount of food to be ordered, and the portion to be served. There was space for the dietitian to record amounts ordered, number of orders to be prepared, use of leftovers, and other information necessary for the individual mess. Some dietitians used similar procedures in their food production management while others were not given this responsibility.

The dietitians checked for avoidance of excess food losses in preparation such as in the peeling of potatoes or the handling of syrup from canned fruit. The butcher shop was closely supervised in order to utilize meat scraps and fat.

Two types of food service were used in Army hospitals—ward and mess. Mess service included cafeteria (fig. 48), family style, and waiter. Generally, waiter service was given to orthopedic patients, wheelchair patients, such as paraplegics, and to officer personnel. Adjustments were made in the height of tables to accommodate the wheelchairs. The change of surroundings from the ward environment improved the morale of these patients as well as those patients on therapeutic diets, who were served in the dining hall.

Usually, the patients on therapeutic diets presented their diet cards to the special diet cooks and mess attendants at the special diet line. The correct food items were then placed on their trays and the completed trays checked by the dietitian. In some hospitals, self-service by patients was followed by matching the patient's colored diet card with the color-tagged diet food items. A selective menu was offered in some Army hospital officers' messes. The regular menu was followed in others.

Dietitians planned variations in food and food service in order to make them more pleasing. Hamburgers, steaks, and grilled sandwiches were prepared on the line and served promptly from the griddles. Hot roast beef sandwiches were a welcome alternate for the usual roast

[20] History and Organization of the Dietetic Department, Brooke General Hospital, Fort Sam Houston, Tex., 1944. [Official record.]

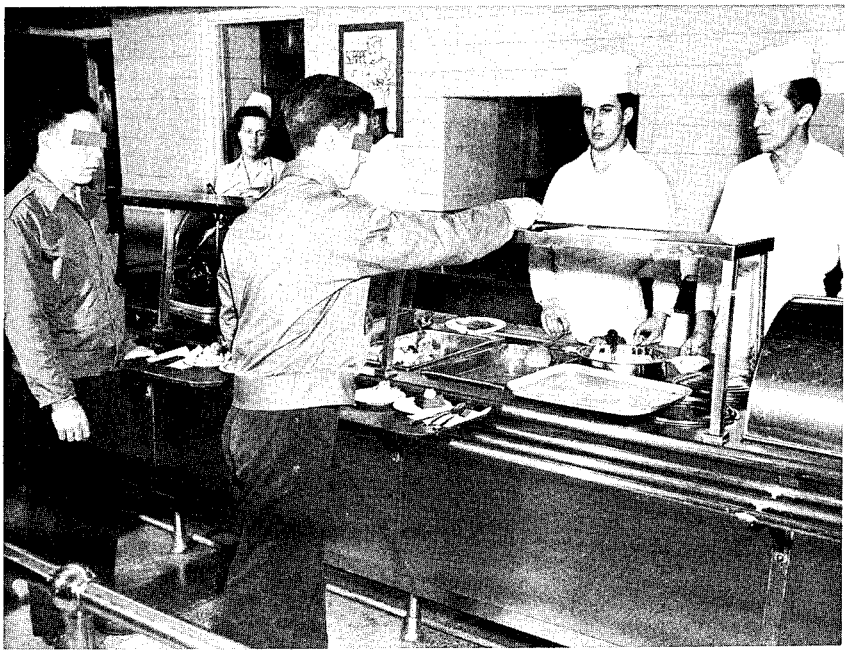


FIGURE 48—Cafeteria service for ambulatory patients.

beef, potatoes, and gravy. Where possible, patients were allowed to get ice cream after they had finished their meal.

Ward food service in most hospitals presented many difficulties. One was the food delivery system. Early in the war, only the Drinkwater type of cart was available; later, the stainless steel electric cart was used (fig. 49). Food was delivered to the wards by mess attendants or loaded into mess vehicles for distribution.

The Drinkwater cart consisted of one or two poorly insulated tin boxes placed on a 4-wheel chassis. Large cast aluminum inserts, holding regular food, were placed in the insulated boxes. With no source for added heat, food did not remain hot. Salvaged No. 10 tin cans were used to transport small quantities of unheated special diet food to the wards. The small stove in the ward diet kitchen was not suitable for reheating large quantities of regular food in aluminum containers or the many small containers of special diet food.

Another difficulty influencing the type of ward food service was that of untrained and disinterested personnel. Patients who requested permission to go to the messhall, because they were told by other patients that "the chow was much better in the mess," verified the foregoing statement that untrained personnel were almost wholly responsible for inferior service. The same food was served in the mess as on the wards, prepared in the same manner, and was placed in conveyors

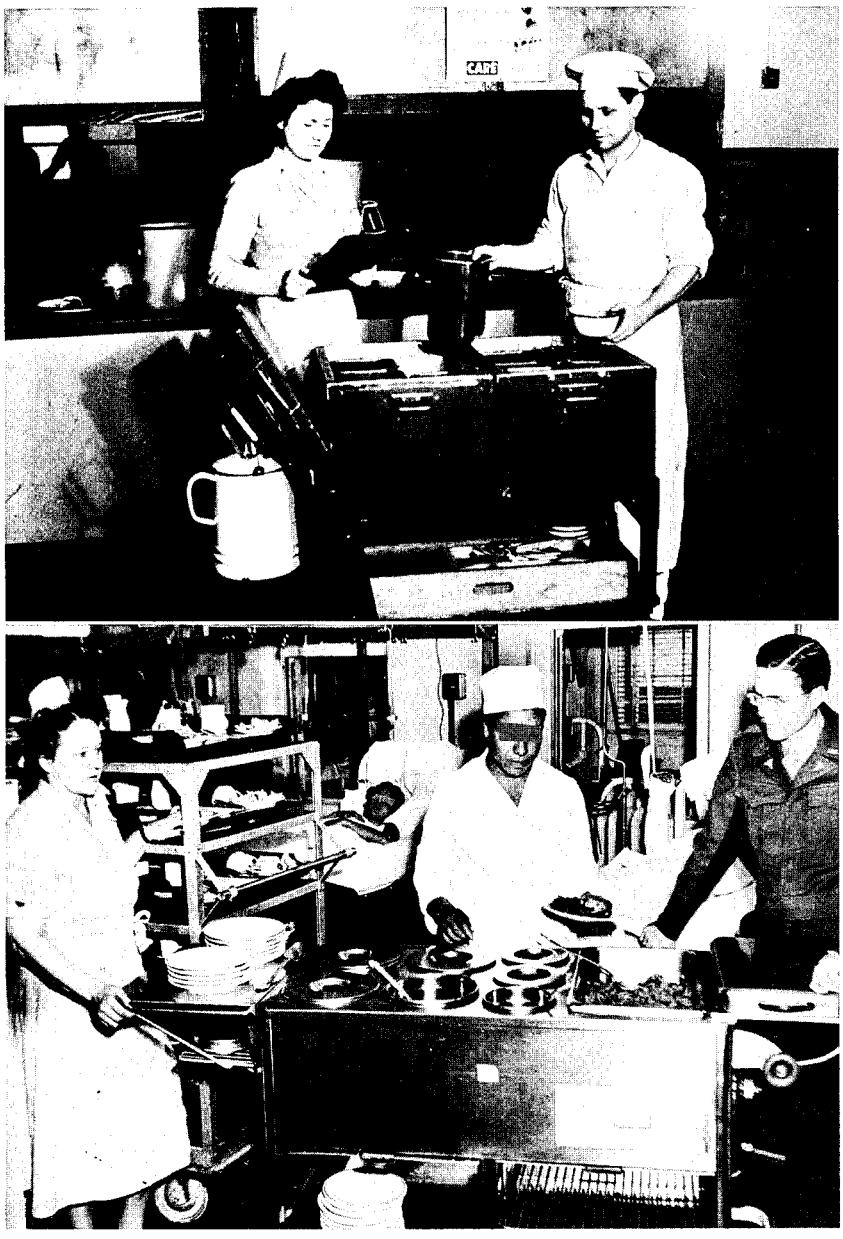


FIGURE 49—Food carts. (Top) Drinkwater type of food cart in which food cabinets hold food containers set in hot water. (Bottom) Stainless steel electric cart.

immediately before being sent to the wards. There were often flaws, however, in the food conveyance system. Food was placed in the containers too early or the carts were insufficiently preheated.

Trays for patients were set up on racks in the ward diet kitchens. Cold food was placed on the trays first, and immediately before serving each tray, hot food was added. In some hospitals, the food cart was wheeled up and down the ward and the rack wheeled alongside. The patient could then specify his desires as to quantity and variety. The serving of hot beverages and ice cream separately permitted him to have hot coffee and unmelted ice cream.

Dining hall service was provided on the wards where the ward officer encouraged such a morale-improvement procedure. At Newton D. Baker General Hospital, Martinsburg, W. Va., several plastic surgery patients ate family style at a large table in the ward kitchen.

When possible, actual ward service was supervised by the dietitians who assisted and instructed nurses, nurses' aides, and ward kitchen personnel in the service of trays. The dietitians checked ward refrigerators and supplies to insure that all food necessary for nourishment and that miscellaneous items to enhance meal service were available. Often, patients' requests for items such as catsup were met with curt negative responses from ward attendants who had no desire to go back to the mess for additional supplies. Minor items of this type tended to influence the general opinion of food service and the ward dietitian took corrective action when necessary.

At most hospitals, food items for special diets (few in number, compared to the total regular diets ordered) were sent to the ward already prepared. These small amounts were reheated, if necessary. At Billings General Hospital, a most effective system of serving special diets was introduced.[21] All therapeutic diet patients were concentrated on two wards. Special diet cooks in the ward kitchens prepared all items not on the regular menu and the dietitians supervised preparation and service of these trays. The diet cooks requisitioned food supplies once daily; these were delivered with the morning nourishment order.

PHYSICAL FACILITIES AND EQUIPMENT

The kitchens in Army hospitals during the peacetime period had been equipped with the latest laborsaving devices and mess equipment. With expansion, new temporary buildings were added to these hospitals and wartime equipment was installed. The hospitals being constructed were temporary cantonment type and the kitchens were equipped with many substitute items. As the war progressed, enamelware was used in many items that previously had been made of stainless steel or Monel metal.

The physical setup of the hospital remained unchanged throughout the war and greatly affected the type of food production and service

[21] See footnote 7, p. 186.

in the hospital. Refinements in service for small groups could not be extended to large groups. Since the floor plans were different in the permanent-type hospitals, the operational procedures established in the organization of one dietetic department did not always apply in others.

The larger cantonment hospitals had at least two enlisted patients' messes and an officer patients' mess. In addition, there was at least one detachment mess for enlisted personnel assigned to the medical detachment, a nurses' mess, and a duty officers' mess. Generally, the larger patients' mess had a butchershop and a storeroom (adjacent to the kitchen) which serviced all hospital messes. There were usually separate facilities for the baking area. For the most part, centralized baking was done in the larger patients' mess at night. Because of the personnel situation, the need for food conservation, and the necessity for standardized products, centralized pastry and meat cutting units were found to be most economical. In some places, central butchershops and bakeshops were constructed. The distribution of meat and bakery products to the different messhalls was made in accordance with orders of dietitians in the various messhalls.

The provision of the most nutritious food served in the most palatable manner depended to some extent on the available mess equipment. During the war years, with the vital need for metals elsewhere, many messes had to improvise some equipment. Oversea units in the two World Wars fashioned tables and cafeteria counters from scrap materials. Bottles were used for rolling pins in World War I, whereas broom handles served this same purpose in World War II. A unit in France in World War I handwashed dishes under the trees with water heated on field ranges. Many units in World War II were without dishwashing machines for the metal compartmental trays or messkits. Sinks and GI garbage cans with improvised heating units were used in handwashing all mess equipment. At one time, when the 9th Evacuation Hospital was based in North Africa, mess equipment was washed in bathtubs.[22] The GI garbage can was used in both wars as a storage bin, coffeepot, and sink. The meat cleaver became a can opener and wirecutter. It also cut fingers and hands.

Hospitals lacked small equipment for the preparation and service of food for therapeutic diets. The reuse of all sizes of tin cans was necessary in transporting and reheating small quantities of special diet food. The insulated food conveyor was unsatisfactory as it was difficult to transport and inadequate for maintaining food at the proper temperature.

One of the most important items of mess equipment for food preparation was the range—gas, oil, electric, or coal. Most commonly used was the gas range, ideal when complete with grill. Electric ranges were used extensively, particularly at smaller posts and in ward diet kitchens.

[22] Personal knowledge of Lt. Col. Helen M. Davis, dietitian, 9th Evacuation Hospital.

There were few oil ranges in use. Coal-burning ranges were least desirable and required a great deal of time and attention. Kitchens with coal-burning ranges were most uncomfortable for mess personnel in hot weather. In oversea areas, the portable gasoline-burning M–1937 field range (fig. 50) was used.[23] Its World War I predecessor used coal or wood and was mounted on a horse-drawn cart. This range was not only limited in the variety and desirability of food prepared, but the smoke it emitted enabled the enemy to ascertain troop locations. The M–1937 range had its limitations, too. Since white gasoline was not available, leaded motor fuel had to be used. This clogged the lines and required cleaning and changing of the filter at least every 6 hours. Frequently, this occurred at mealtime. Many oversea units found that parts were missing or worn out and replacement parts for the range unavailable. Serious accidents involving the use of this range did occur because of lack of training by early users and through carelessness in operation. Even so, the field range remained one of the more important items of development among those used in the storage, handling, and preparation of food. It consisted of one or more self-contained cabinets, was made of aluminum or stainless steel, and had a roast or bake pan, with griddle cover, and a steel cradle for supporting a large boiler and a fire unit.

Bake ovens were coal, gas, or electric. They were essential because kitchen range ovens often did not provide sufficient space for large quantity baking. Brooke General Hospital was fortunate in possessing a rotary type oven in its central bakeshop. Ovens in oversea areas were an important morale factor because of the hot breads and pastries they supplied.

Most messes were equipped with gas or electric deep-fat fryers in varying capacities. There were mixing machines complete with attachments for various types of preparation. Vegetable steamers, gas or steam, were distributed according to approximate mess capacity. Steam or gas-heated steam jacketed kettles made of aluminum, stainless steel, or cast iron were used in all hospital messes. The ease and efficiency of mechanical potato and vegetable peelers made life much happier for GI's detailed to mess work. Coffee urns were of stainless steel with a steel jacket, or porcelain with a galvanized iron jacket. Batteries of urns were used in larger hospitals while single and twin urns were used in smaller hospitals. Gas or electric rotary toasters were placed behind serving lines and toast was served as quickly as it was prepared. Electric meat saws, slicers, and grinders were issued. Many hospitals purchased steak tenderizers and doughnut machines which were time-saving and provided a popular food item. Other mess equipment included racks of all types, mess trucks, bains-marie, and standard reach-in, pass-through, and prefabricated walk-in refrigerators.

[23] Risch, Erna: The Quartermaster Corps: Organization, Supply, and Services. Volume I. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1953, p. 146.



FIGURE 50—M–1937 field range. (U.S. Army photograph.)

As reported by Brooke General Hospital,[24] other mess food service equipment included a long stainless steel cafeteria counter with a refrigerated water fountain, counter space with refrigerated cabinets for salads and desserts, three gas-heated grills with covers for griddle cakes, fried eggs, and so forth, a steam table containing three wells and three serving pans, a warming compartment for hot dishes in the space below the steamtable and grills, and three revolving toasters placed in such a manner that the patients could serve themselves. In back of the counter were a battery of coffee urns, an ice cream cabinet, and dish storage cabinets. Some units overseas were fortunate in having a similar setup while others had to improvise. Less desirable table equipment included the wooden picnic-style tables and tables with attached swinging seats accommodating 8 or 12 persons.

Ward kitchen facilities were minimal since the bulk of the food was prepared in the main kitchen before loading on food carts for delivery to the wards. Small skillets, griddles, toasters, and coffeepots were provided for the preparation of eggs, hot cakes, toast, hamburgers, and other items on the ward. Each kitchen had a small range and

[24] See footnote 20, p. 191.

refrigerator. Cupboard and drawer space were provided for dry supplies, dishes, and silver. Unfortunately, unless precautions were taken, roaches multiplied in these places. Movable tray racks for setting up trays prior to meal service were most valuable. In some hospitals, wooden shelves were built to hold the trays. A number of hospitals supplemented china with steel and plastic compartment trays. The Drinkwater carts at some hospitals were equipped with balloon tires which made them noiseless and reduced the damaging effect of sharp wheels on corridor and ward floors.

The dishwasher was the most important item of mess sanitation equipment. Some were semi-automatic. Others required that racks of dishes be placed in the machine and removed by hand. Ward kitchens without dishwashers had to send dishes to a central dishwashing room, quite a transportation problem in old buildings without elevators. In some hospitals, dishes were handwashed and placed in a sterilizer, a laborious procedure. Other sanitation equipment included scullery sinks, pot racks, slop sinks, and grease interceptors.

At Birmingham General Hospital, Van Nuys, Calif., the problem of equipment to transport ward nourishments was solved in a unique manner. Bread racks were converted and used to convey nourishments to 16 wards twice daily, saving approximately 25 man-hours a day. Later, the engineers built two nourishment carts to specifications. These saved 40 man-hours per day as well as relieving congestion in the halls and main kitchens.[25]

A bread slicing and wrapping machine was purchased for the hospital bakery at McCloskey General Hospital, Temple, Tex., through the Post Hospital Fund. This purchase proved to be a very important conservation measure as well as a sanitary and esthetic improvement.[26]

Preventive maintenance was followed in all Army hospitals. Personnel were instructed in the use and care of all equipment. Since there were so many inexperienced and unskilled personnel, this instruction was invaluable. The user of kitchen equipment was the most important single factor in preventive maintenance. If he faithfully performed his daily services routinely, major repairs and overhaul were often avoided. The daily services included prevention of abuse of equipment and inspection checks.[27]

Before the preventive maintenance program became Army-wide, equipment shortage and breakdown problems in many messes were caused by misuse of equipment by inexperienced personnel, the employment of whom was necessary because of the rapid turnover of military personnel being shipped overseas. The Army insisted that the valuable equipment, so necessary to mess operation, should be properly employed and preserved and declared a financial liability for misuse of such equipment.

[25] Annual Report, Birmingham General Hospital, Van Nuys, Calif., 1945, p. 54.
[26] Annual Report, McCloskey General Hospital, Temple, Tex., 1944, pp. 30–31.
[27] War Department Technical Manual (TM) 5–637, July 1945.



FIGURE 51—Dietitian checking the planned diet while another weighs the special diet food, 17th General Hospital, Naples, Italy, 1943.

THERAPEUTIC DIETS

Special diets

Similarities existed in the handling of special diets in both wars; however, World War II variations in therapeutic management made lasting contributions to improved patient care.

In both World Wars dietitians planned and often cooked the special diets in oversea units (fig. 51). In World War II units without dietitians, nurses planned the special diet menus. Generally, the nurses underwent a few weeks' training under dietitians in order to renew and expand their knowledge in this area (fig. 52). 1st Lt. Lois S. Nelson, assigned to the 147th General Hospital, T.H., wrote of four nurses who assisted her and who "can do almost everything I can do." One Army



FIGURE 52—Fifteen nurses who graduated from dietetics training, Brisbane, Australia, January 1944. (U.S. Army photograph.)

hospital in Osaka, Japan, suffered such severe military cook losses that six nurses were assigned to cooking in the special diet section.

Small kitchen equipment needed in the cooking and serving of diet food overseas was often lacking. Tin cans of varying sizes were used successfully in both wars.

Ordinary foods such as gelatin, junket, cocoa, broth, and other items required for light and special diets were totally absent in World War I oversea units. In late World War II, these items plus canned fruit juices, powdered milk, both whole and nonfat, canned boned chicken, canned fruits, and canned soups were available in varying amounts.

In World War I, Miss Mary Foley, dietitian at Fort Riley Base Hospital, Kans., served approximately 20 different types of diets.[28] In World War II, 1st Lt. Rosalind Mokray, dietitian at Camp Forrest Station Hospital, Tenn., planned menus and ordered food for two special diet messes feeding German prisoner-of-war bed patients. The average diet census was 180 ulcer diets, 24 diabetic diets, and about 35 salt-free diets. Ambulatory German prisoner-of-war patients cooked the food under the general supervision of enlisted supervisors. In another special diet mess for ambulatory German prisoners, the diets included 200 soft, 20 fat

[28] The Army Dietitian in World War I. J. Am. Dietet. A. 20: 398, June 1944.

free, 50 salt free, 20 liquid, and 12 diabetic. A German medical officer worked out 12 different diabetic diets and ordered diets for each patient with diabetes by number. Lieutenant Mokray planned the menu while an interpreter wrote out the diets for those patients to weigh.

The diets commonly ordered by ward officers at Hammond General Hospital, Modesto, Calif., were regular, soft, light, liquid, convalescent ulcer, low fat, and high caloric. 1st Lt. Velma Harwood, the dietitian, wrote all of these on a large master-menu form for a week at a time.

Special diets in World War II oversea units were liberalized, in contrast to those served in the United States, because of limited variety in food items. This leniency, with medical approval, appeared to be the universal policy in all hospital messes. The dietitians of the 313th General Hospital, Southwest Pacific Area, reported that patients on low-fat diets were served such items as ice cream, chocolate milk, and frankfurters, which technically should not have been used.[29] About 30 percent of the hospital patients were on special diets, the largest percentage being patients with hepatitis. They received the liberalized low-fat diet.

The 313th General Hospital used a standard high-caloric, 6-feeding diet for patients (recovered Allied military personnel as well as American) received from Japan. Some patients, unable to take a regular diet, were placed on this regime. Every effort was made to satisfy their hunger. Food was available in the kitchen for them 24 hours a day. The average weight increase of these patients was 30 pounds; the length of hospital stay, 3 to 4 weeks. Five of the recovered patients showed symptoms of diabetes and were placed on weighed diets. The medical staff was not convinced that these were patients with true diabetes, but were possibly suffering from malnutrition. One patient was started on insulin and a weighed diet. After 3 weeks, it was possible to stop the insulin and control the hypoglycemia with a 2,500-calorie diet.

In the European Theater of Operations, U.S. Army, therapeutic diets served to hospital patients averaged between 8 to 20 percent. These were mostly medical soft, dental soft, liquid, soft bland, and the low-fat, high-carbohydrate, high-protein diets. Diabetic, nephritic, meat-free, Sippy, and high-caloric diets were infrequent. The dietitian welcomed fresh eggs, used tenderloin steaks from the beef issue, and reserved liver from the chicken rations to get a little more variety. Purees were used only for ulcer, maxillofacial, and liquid diets. Custards, soft puddings, and nourishing milk drinks were devised from powdered milk and eggs, cocoa, malted milk, and other flavorings. Jello was an infrequent item of issue and ice cream was dependent upon the accessibility of ice cream freezers. 2d Lt. (later Maj.) Florence M. Berger, therapeutic dietitian, 300th General Hospital, Mediterrranean (formerly North African) Theater of Operations,

[29] Walker, Florence S., and Hildenbrand, Shirley A.: History of Medical Department Dietitians, 313th General Hospital, Southwest Pacific Area, 12 Dec. 1945.

U.S. Army, made ice cream for very ill patients by placing evaporated milk, eggs, and sugar in a small tin can and then immersing this in crushed ice. The diabetic diet was the most monotonous. Canned fruits had to be washed free of syrup and little could be done to improve the flavor of the food or to give more variety.

When the number of patients with hepatitis increased (12 to 15 percent of patients fed), the dietitian had to coordinate with the quartermaster in ration adjustments. The diet increase required permission for increasing dietary food items and a corresponding decrease in regular diet items. Issues of pork, ham, butter, whole milk, and meats canned in gravy were changed to lean meat, skim milk powder, additional bread, and jam. Many disliked skim milk, and as a result some doctors permitted the use of whole milk powder. These patients gradually progressed to regular diets.

Insulin therapy for patients suffering from combat exhaustion presented a problem involving quantity of food. This was solved by giving them a regular diet with extra bread, jam, juices, cereals, and larger portions of other foods to furnish the extra calories required for the insulin dosage. The patients gained weight, slept better, became less tense, and had fewer nightmares and battle dreams.

The Rhine crossing in March 1945 resulted in some severe cases of malnutrition among recovered Allied military personnel. The Chief Surgeon's Office, European theater, issued directives to orient these recovered personnel and the people responsible for their welfare in the treatment of acute malnutrition. One soldier ate 17 doughnuts and had to be hospitalized. Many hospitalized patients were placed on a bland diet for 48 hours, warned of the dangers of overeating, and advised to avoid such items as candy, peanuts, doughnuts, and raw fruits and vegetables. In hospitals, they had to be guarded against the kindnesses of their friends and buddies. The American National Red Cross canteens and Army post exchanges were temporarily restricted to them. It was necessary to check them closely to prevent their going to the regular mess or eating a second meal.

In the Mediterranean theater, when hospitals were admitting the wounded directly from the battlefield, the largest percentage of diets was regular and liquid. If the frontline was stable and the hospitals more or less stationary, a great variety of diets was ordered. During an active campaign, however, most of the patients required immediate surgery and therefore could ingest little more than liquids. Furthermore, until the quartermaster supply depots were established only emergency rations were obtainable, making it difficult to attempt diet therapy regimes.

Special diets were modifications of the regular menu in order to save supplies, equipment, and the time of personnel. Because of possible changes in the menu, the dietitian did not plan meals for the following day until the rations and issue chart had arrived. Purees were not eaten; therefore, soft diet was actually a modified light diet.

In the Middle (formerly Central) Pacific area, a low- or non-residue diet was generally used for patients with amebic and bacillary dysentery. Ward surgeons, in collaboration with the dietitian, frequently planned formulas for forced feedings. The dietitian's ingenuity was challenged in improvising food combinations for the many patients with maxillofacial wounds to prevent weight loss and to stimulate the normal healing process. As patients with soft tissue loss could take only fluids, by means of a syringe or nasal tube, special formulas were devised and offered in addition to the liquids. A minimum of six feedings a day was given.

Special diets ordered included the hepatitis, bland (also with variations), low residue, Sippy, convalescent ulcer, high caloric, diabetic, typhoid, salt poor, tonsillectomy, and test.

In planning special diets, many World War II dietitians were guided by the manual on hospital diets published in October 1941.[30] World War I dietitians did not have this authoritative, standardized, and invaluable aid. The manual was designed to "simplify the diet problems for ward and mess officers, dietitians, mess sergeants, and cooks in ordering and preparing diets suitable not only for the average patient under usual conditions but also for almost any specific case which may be encountered." Diet instruction and menus were included. Some interesting dietary foods used were ox kidney, rabbit, and brains. One of the diets, for which the need no longer exists, was the pellagra preventive diet.

The manual was revised in March 1945 and included a list of definitions and descriptions of food items which could be used in adapting and supplementing Army rations for the seriously ill. The oversea hospital ration was discussed and a section was included on the preparation of nonperishable foods (canned, dehydrated, and dried). The nutritional importance of certain items such as enriched flour, lemon and orange powder, milk (all types), liquids from canned fruits and vegetables, and dried eggs was stressed.

Hepatitis study

Undoubtedly, the special diet most frequently ordered in any hospital was the high-protein, high-carbohydrate, low-fat (rancid) or hepatitis diet. This diet proved to be of inestimable value in the therapeutic regime of patients with infectious hepatitis. Results proved it to be far superior to the high-carbohydrate, medium-protein, low-fat diet used in Africa, Sicily, and the early phases of the Italian campaign. The food which had been offered to patients with hepatitis had been so nutritionally poor and unpalatable that the amount ingested by the average patient was insufficient to promote, or even sustain, a gain in weight, so important in recovery from this disease. Likewise, the protein in the diet (particularly the amino acid methionine), already

[30] War Department Technical Manual (TM) 8-500, 13 Oct. 1941.

too low to facilitate the regeneration of liver cells, was inhibited by the high-fat (cholesterol) content of the diet.[31] An analysis of the diet served in a station hospital during the months of March and April 1944 revealed that the protein averaged 84 gm.; carbohydrate, 346 gm.; fat, 43 gm.; and calories approximated 2,100.[32] When further studies demonstrated the inadequacy of this diet, a series of experiments with allowances increased for protein and decreased for fat were conducted to determine to what degree the high-protein, low-fat diet might be instrumental in shortening the disease and lessening its severity. The evidence was so favorable that all hospitals in the Mediterranean theater were instructed to employ it in treating patients ill with hepatitis.

Part of the success for the study was due to the teamwork of mess and professional personnel. Dietitians at the 300th General Hospital conducted experiments to determine the most popular foods and methods for making those which were less popular more palatable. The special diet cooks willingly devoted extra time to the study. Col. Marion H. Barker, MC, head of the Hepatitis Commission, Mediterranean theater, encouraged professional personnel to take special interest in the efforts of mess personnel. At the instigation of Colonel Barker and the dietitians, the quartermaster made available for the study food items such as extra allowances of lean beef and canned chicken.

In the experimental stages, the hepatitis diet provided approximately 185 gm. of protein, 320 gm. of carbohydrate, and a minimum of 25 gm. of fat.[33] However, when followup studies disclosed that nonrancid fats, such as butter, considerably improved the palatability of the diet and could be ingested by the majority of patients without harmful effects, the fat content was increased to 75 grams. The other constituents were also increased, providing 225 gm. of protein, 500 gm. of carbohydrate, and approximately 3,500 calories. The high-protein figure was achieved by offering a minimum of one pound of lean meat and one quart of skim milk (200 gm. of skim milk powder) daily. Skim milk was invaluable in evacuation hospitals, as it was frequently impossible to procure fresh lean meat, and in treating the acutely ill, who, surprisingly, could not take or retain anything but this beverage. The fats employed in the daily menu were egg yolks, fresh and canned butter, and corn oil. Because of the high-cholesterol content of the egg yolk, only one fresh egg a day was permitted and that for morale purposes. If available, one pat of fresh butter was served with each meal and about two pats were used in preparation. If the supply was limited, canned butter or corn oil was substituted.

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[31] Report, Col. Marion H. Barker, MC, to the Surgeon, Mediterranean Theater of Operations, 23 July 1945, subject: Final Report on Infectious Hepatitis in MTOUSA.

[32] Report, Col. Marion H. Barker, MC, 1944, subject: Report on Infectious Hepatitis in NATOUSA.

[33] Circular Letter No. 37, Office of the Surgeon, Headquarters, North African Theater of Operations, U.S. Army, 8 July 1944, p. 12.

TABLE 12—*Food constituents of hepatitis diet, July 1944 to March 1945*

Menu	Weight (gm.)	Protein (percent)	Fat (percent)	Carbohydrate (percent)	Calories (percent)
Breakfast:					
Fresh orange	150	0.135	0.3	16.8	75.0
Stewed apricots	100	5.2	.4	66.9	292.0
Cooked cereal	100	2.3	1.2	11.0	64.0
Bread	30	2.55	.6	15.7	78.0
Jam	[1]1	.05	.03	7.08	29.0
Skim milk	50	17.8	.5	26.0	180.0
Coffee	[2]1	.....	.....	.....	.....
Total		28.035	3.03	143.48	718.0
Dinner:					
Broiled steak (raw weight)	100	30.0	6.0	.....	174.0
Fat-free tuna salad	100	6.05	2.7	.....	48.5
Fat-free mashed potato	100	2.4	.1	19.1	85.0
Bread	30	2.0	.6	15.7	78.0
Jam	[1]1	2.55	.03	7.08	29.0
Skim milk	50	17.8	.5	26.0	180.0
Peaches	100	.4	.1	18.2	75.0
Egg whites (2)	.....	10.8	.....	.8	32.2
Fat-free string beans	100	.5	.2	7.7	42.0
Total		72.50	10.23	94.58	743.7
Supper:					
Fat-free roast beef (raw weight)	100	30.0	6.0	.....	174.0
Fresh potato	100	2.0	.1	19.1	85.0
Fat-free hot vegetable	100	1.5	.1	11.5	53.0
Bread	30	2.55	.6	15.7	78.0
Jam	[1]1	.05	.03	7.08	29.0
Skim milk	50	17.8	.5	26.0	180.0
Pears	100	.2	.1	18.4	75.0
Total		54.10	7.4	97.78	674.0
Skim milk (for cooking)	90	32.0	.9	46.8	323.1
Grand total		186.635	21.56	382.64	2,458.8

[1] Tablespoon.
[2] Cup.

NOTE.—Fat was excluded or washed out of fat-free items.

Source (1) Berger, Florence M.: History of the Medical Department Dietetics Service in the Mediterranean Theater of Operations, U.S. Army, 1942–45. [Official record.] (2) Manchester, Katharine E.: History of the Army Dietitian. [Official record.]

Tables 12 and 13 compare the constituents of the diet as employed from July 1944 to March 1945 and the new diet initiated in March 1945. Although the two most important components, lean meat and skim milk, were included in both, the more recently developed procedure (table 13) was more commendable from the patients' viewpoint. This was because foods generally disliked were omitted, seasoning was used freely, the diet was made more palatable through the introduction of dairy products, and a greater variety of items was offered. These improvements resulted in an increased intake which in turn promoted a weight gain and an early return to duty.

TABLE 13—*Food constituents of hepatitis diet initiated in March 1945*

Menu	Weight (gm.)	Protein (percent)	Fat (percent)	Carbohydrate (percent)	Calories
Breakfast:					
Fresh orange juice	200	.....	.....	20.0	80
Whole wheat cereal	30	3.5	0.6	22.7	110
Soft-cooked egg	50	6.4	5.8	.4	79
Toast	70	6.0	2.0	36.0	186
Butter	10	.1	8.1	.....	73
Jam	40	.2	.12	28.4	116
Coffee, with sugar	39	.....	.....	39.0	156
Skim milk [1]	250	18.0	.5	26.0	181
Total		34.2	17.12	172.5	981
Dinner:					
Choice steak (raw weight)	240	40.6	14.4	.....	292
Mashed fresh potatoes	100	4.3	1.1	22.4	117
Savory string beans	100	1.0	.1	3.3	18
Fruit salad	130	.4	.3	26.1	108
Bread	70	6.0	2.0	36.0	186
Butter	10	.1	8.1	.....	73
Jam	40	.2	.12	28.4	116
Butterscotch pudding	130	4.7	.5	35.5	165
Skim milk [1]	250	18.0	.5	26.0	181
Total		75.3	27.12	177.7	1,256
Supper:					
Roast beef (raw weight), with natural gravy	240	40.6	14.4	.....	292
Dumplings	120	7.6	1.1	24.6	139
Creamed peas	100	5.6	.26	13.4	78
Carrot strips	100	1.2	.3	9.3	45
Bread	70	6.0	2.0	36.0	186
Fresh butter	10	.1	8.1	.....	73
Jam	40	.2	.12	28.4	116
Sliced pineapple	100	.4	.1	14.5	60
Skim milk [1]	250	18.0	.5	26.0	181
Total		79.7	26.88	152.2	1,170
Evening nourishment:					
Vegetable soup	175	5.75	1.5	14.5	94
Toast	70	6.0	2.0	36.0	186
Butter	10	.1	8.1	.....	73
Skim milk [1]	250	18.0	.5	26.0	181
Total		29.85	12.1	76.5	534
Grand total		219.05	83.22	578.9	3,941

[1] One part skim milk powder (50 gm.) to four parts of water (200 gm.).

Source (1) Berger, Florence M.: History of the Medical Department Dietetics Service in the Mediterranean Theater of Operations, U.S. Army, 1942–45. [Official record.] (2) Manchester, Katharine E.: History of the Army Dietitian. [Official record.]

HOSPITAL SHIPS

Dietitians were first used on hospital ships in World War II (fig. 53). Their work was so new that the conditions under which they

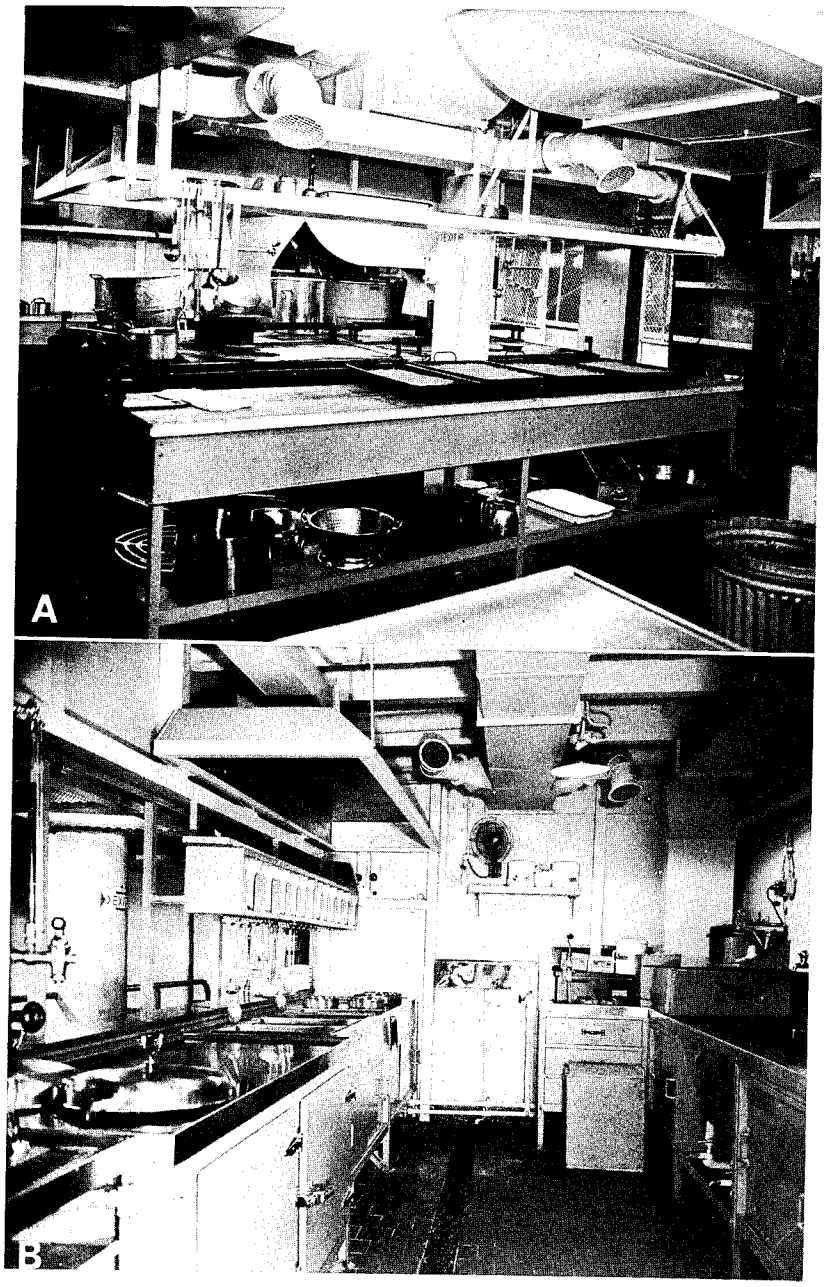


FIGURE 53—Hospital ship. A. Main galley. B. Ward kitchen.

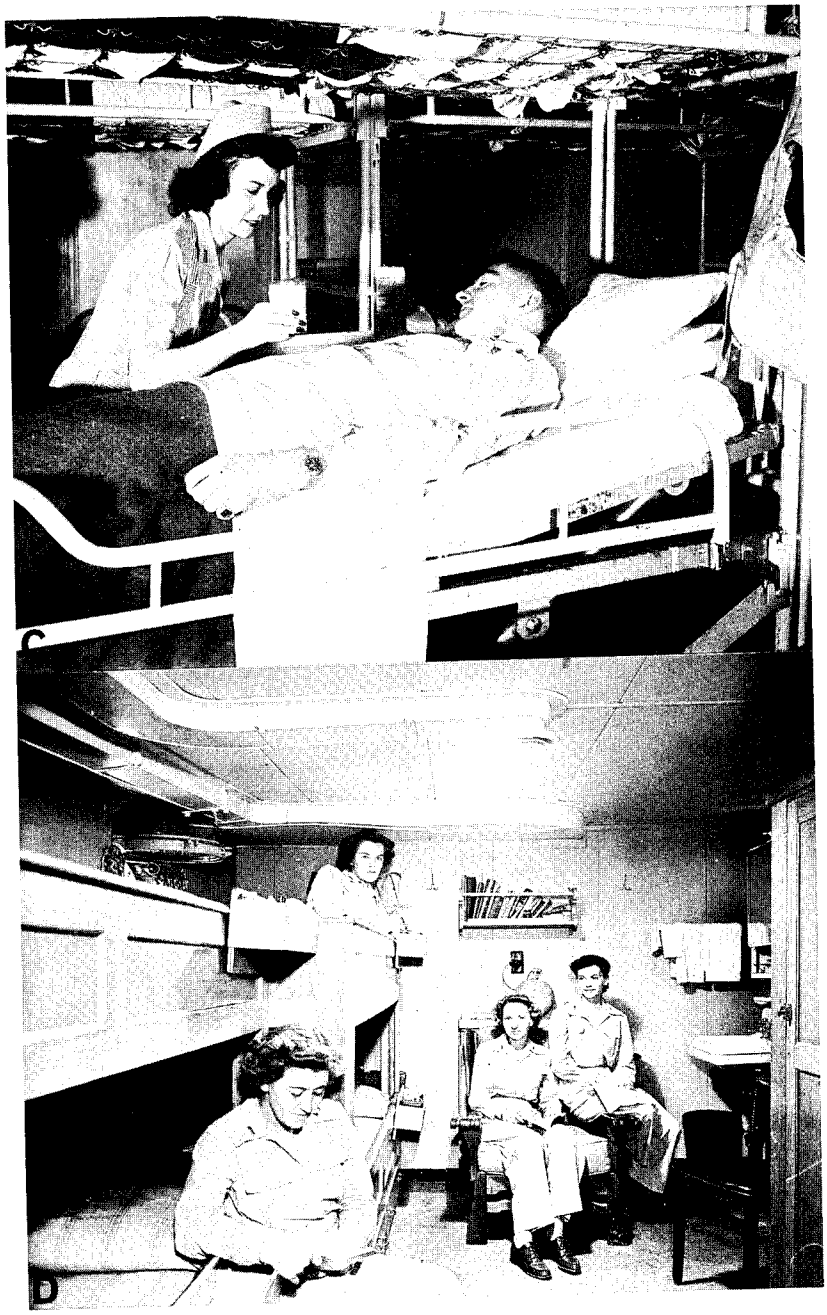


FIGURE 53—Continued. C. Ward. D. Living quarters. (U.S. Army photographs.)

worked varied on each ship. The ships usually were manned by U.S. Navy or U.S. merchant marine crews and where the dietitian, as a member of the Army medical complement, stood in relation to each was not explained for her in the ships' regulations. It soon became quite clear to her that this was one place where she would have to sell herself and her profession. There had been stewards on ships for many years, just as there had been mess sergeants in the Army, and they were a little hesitant in having a woman run any part of a galley.

Unlike most Army hospitals, the hospital-ship complement was not always furnished with either a mess officer or a mess sergeant for the Navy operated the mess in the three Navy-manned ships. On the Army hospital ships, the crews consisted of merchant marines plus the medical-detachment complement.

The first dietitian to serve on a hospital ship was 2d Lt. (later 1st) Edna Stephany, aboard the USAHS *Acadia,* the first U.S. Army hospital ship. She said that doctors, nurses, and detachment personnel were skeptical of the necessity for a dietitian aboard such a vessel. The merchant marine stewards were suspicious of any "new fangled" ideas that she presented.

2d Lt. (later Capt.) Audre E. Pawlicki was assigned to the USAHS *Charles A. Stafford* and later to the USAHS *John J. Meany* and the USAHS *Wisteria.* She wrote that she enjoyed her ship assignments very much and had excellent working relationships. Her duties included the ordering of food for bed patients through the chief steward and responsibility for special diets and nourishments. The *Stafford* was well staffed and had good equipment. There was always sufficient frozen milk on board for the patients, and several times a week, eggnog with whisky was served to them. Neuropsychiatric patients received plain eggnog. When the weather was rough, the cooks were very good about estimating how many passengers would be seasick, and prepared the food accordingly. Refrigerator space on the *Meany* and *Wisteria* was limited. Often some of the frozen milk had to be stored in the morgue. Diets for patients with diabetes were always measured instead of weighed, because constant motion of the ship rendered scales inaccurate.[34]

1st Lt. (later Capt.) Marie L. Averill, dietitian aboard the USAHS *Frances Y. Slanger,* praised the work and cooperation of the merchant marine personnel. The merchant marines cooked the food while Army personnel served it. The steward wrote the menus while the dietitian wrote her diets from his menus. The steward was always able to get any food items she required. Fresh eggs were never scrambled for combat patients because scrambled eggs were a reminder of powdered eggs.

One dietitian wrote of her trips to Scotland, England, North Africa, Sicily, and Italy, and her one claim to fame, being a member of the

[34] Report, 1st Lt. Audre E. Pawlicki, USAHS's *Charles A. Stafford, John J. Meany,* and *Wisteria,* subject: Hospital Ships' Food Service, August 1944.

USAHS *Chateau Thierry* which was part of the armada in the invasion of southern France. Treating the patients evacuated from the beachheads meant really pitching in and helping where help was needed.

1st Lt. Edna M. Raybourn was aboard the U.S.S. *Comfort* when it was bombed near Okinawa by a Japanese suicide plane. The 63 casualties on the brightly lighted ship included 29 killed, 33 wounded, and 1 missing. Damage was quite extensive. Lieutenant Raybourn remarked that immediately following the bombing her thoughts were far from food. The entire crew turned to putting out the fire and assisted in the saving of lives. She said, "At a time like that you can do things you never dreamed you would be able to do, put broken arms in place, administer first aid to open wounds, and even assist in giving plasma."

The problem of food service was very grave for the main diet kitchen had been destroyed, leaving only two from which to serve all patients. Lieutenant Raybourn and her staff, minus her competent mess sergeant who had been badly burned, turned one of the diet kitchens into a special diet kitchen and the other into a cafeteria to serve those who could walk.

THE DIETITIAN OVERSEAS

The dietitian on duty as a civilian in an oversea theater found that her work presented problems different from those in the Zone of Interior. Her ingenuity was challenged in presenting menu items acceptable to patients and staff and in utilizing field equipment. Miss (later Capt.) Irene Boelts of the 298th General Hospital in England described an after-Christmas economy meal as follows: "I boiled the clean turkey bones and rinsed all the roasting pans for stock for soup base. I had the boys grind some left-over scrambled dried eggs and Vienna sausages and added to this chopped celery leaves. With a few dehydrated onions, some left-over turkey gravy, peas and juice, and a pailful of hominy and juice, we had 30 gallons of delectable turkey soup, from material we could and would formerly have thrown away." [35]

The hospitals in which dietitians served ranged from the open tent of an evacuation hospital where cooking was done on various types of field equipment to the permanent-type installations belonging to other countries (fig. 54). Some hospitals in England had excellent kitchens where most of the cooking was done by steam or electricity. There were electric mixers, built-in roasting and pastry ovens, modern steamers, steam kettles, and walk-in refrigerators. On the wards there were electric stoves with grills.

The foods issued had to be used whether or not they were desired by the hospital. Some of the dietitians in North Africa, the Southwest Pacific, and in China, Burma, and India not only had the problem of working in temporary buildings and in tents, but, in addition, were

[35] The Dietitian Overseas. J. Am. Dietet. A. 19: 250–252, March 1943.

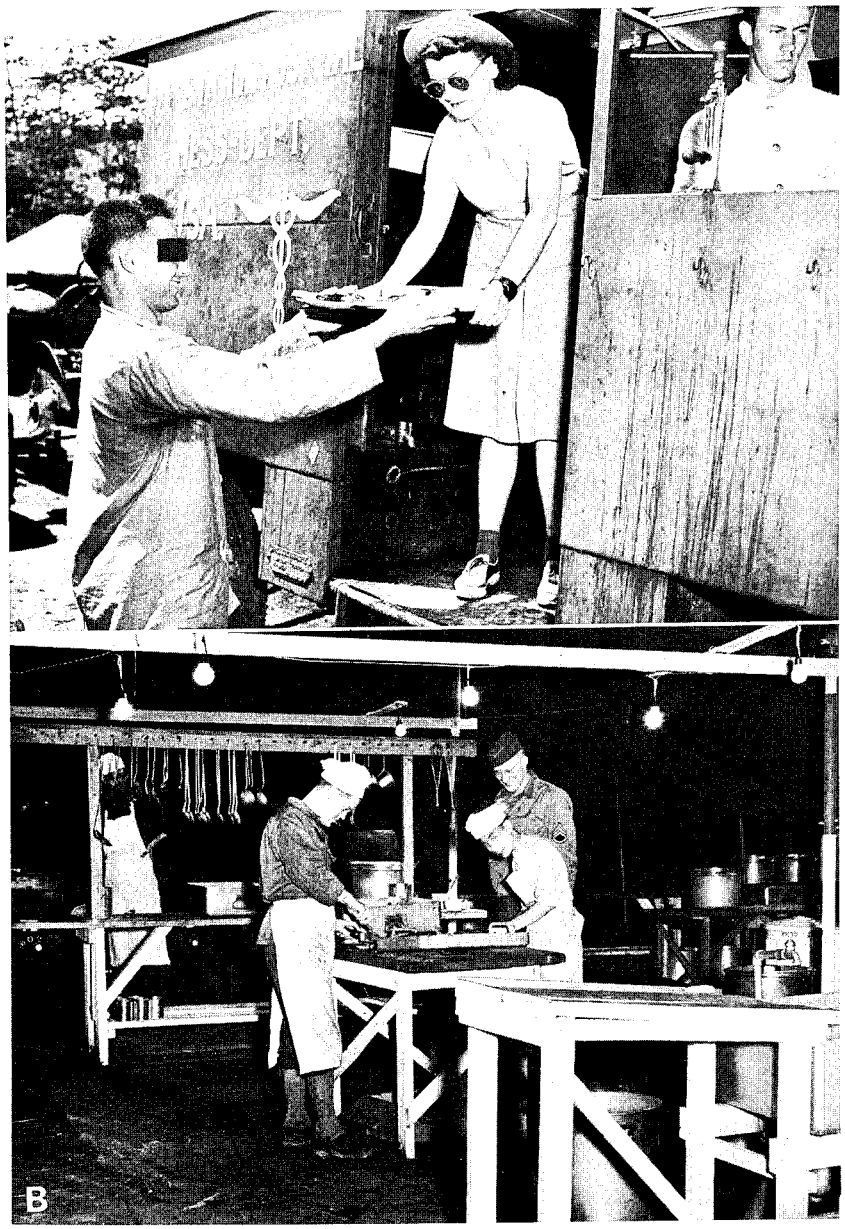


FIGURE 54—Hospital food service facilities overseas. A. Portable kitchen, 171st Station Hospital, New Guinea, 1943. B. Tented mess kitchen, 167th General Hospital, 1945.

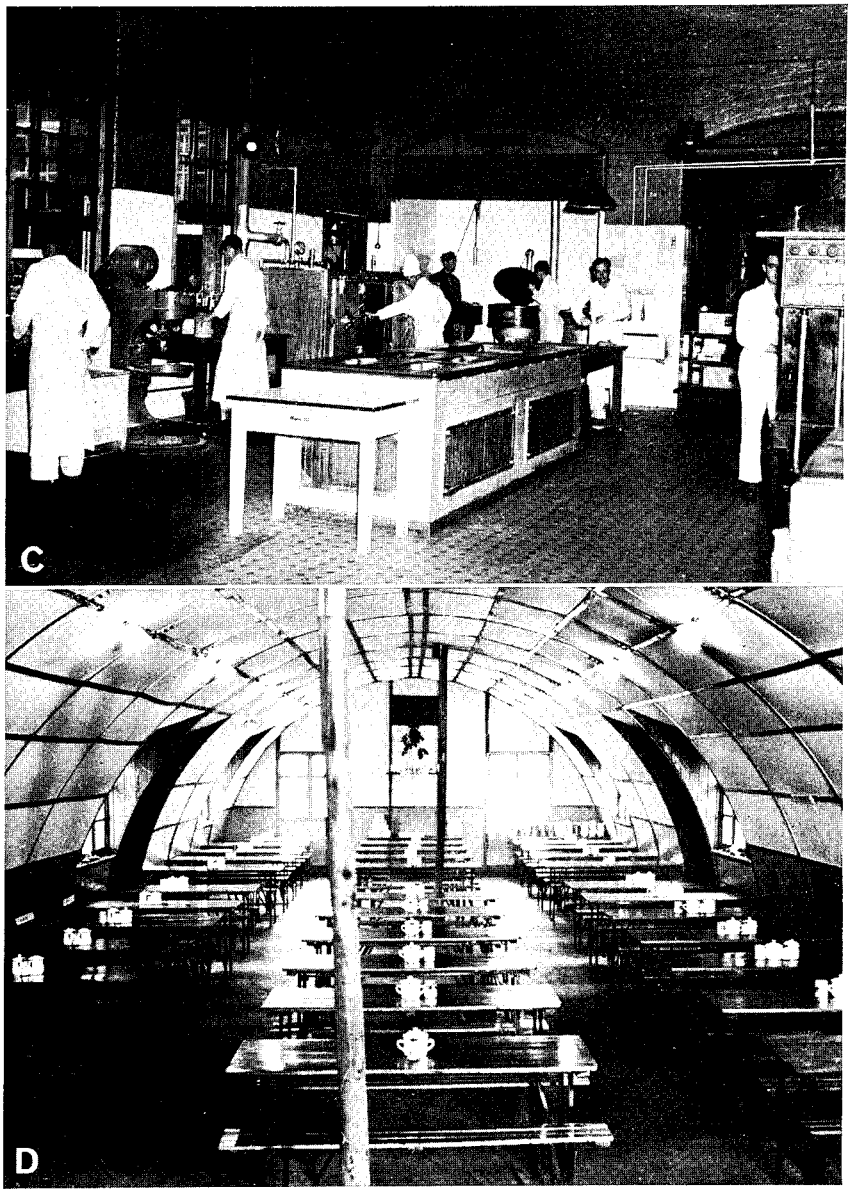


FIGURE 54—Continued. C. Permanent-type kitchen, 36th Station Hospital, Devon, England, 1943. D. Messhall in nissen hut, 318th Station Hospital, England, 1945.

subjected to intermittent supplies of food as well as the rigors of climate to which they were unaccustomed. Wherever native patients were cared for, as in China, Burma, and India, there was the added problem of supplying native food.

Dietitians in many areas spoke of the need and shortage of can openers. With so much of the ration furnished in cans, plentiful heavy-duty can openers were top priority. The very small can openers, which were later provided in the various ration packs, took an excessive amount of time to use and also left traces of tin in the food.

When dietitians were commissioned, the work of the dietitian overseas was marked with greater authority over mess personnel and more responsibility in food preparation and service. Often the oversea dietitian was the only dietitian assigned to her unit and had to work out her problems alone. Other dietitians were so few and scattered that they were seldom able to get together to discuss their work and to benefit by an exchange of experiences and ideas. The dietitian, therefore, was required to use all her ingenuity, experience, and training to provide patients with palatable and nourishing food.

As the war progressed, each oversea area arranged meetings for dietitians on a voluntary basis so that they would have an opportunity to discuss mutual problems. It was usually the theater nutrition officer who recognized the dietitian's problems and supported her with the resources available to him through command headquarters.

European Theater of Operations

The 5th General Hospital, the first affiliated general hospital unit, sailed on 19 February 1942 from New York with the first two dietitians to serve in the European theater. The ship developed mechanical trouble and returned to the United States. Several months later, the group reembarked (12 May), landed in Northern Ireland, and marked the arrival of the first U.S. dietitians on European soil to take an active part in feeding the hospitalized soldiers of World War II.

Their civilian status resulted in their names being omitted from the sailing list, confusion at embarking and debarking, and assignment to an unused English barracks without luggage or bathing facilities. Being civilians, they also had no uniform but a heterogeneous collection of clothing. In cold Northern Ireland, they were permitted to wear the nurses' blue winter uniform without insignia. The standardized complete civilian uniform did not reach the dietitians and physical therapists before commissioning.

Early in the war, the Commanding General of the United States Army Northern Ireland Force requested that the dietitian of the 5th General Hospital assist the quartermaster menu branch in planning the menu for the troops stationed there. This work was in addition to her other duties and was done in an advisory capacity to secure variety and provide a more balanced menu from the foodstuffs supplied by the

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quartermaster. In September 1943, Miss (later Capt.) Cathryn R. VerMurlen was transferred from the 298th General Hospital in England to the Subsistence Division, Office of the Chief Quartermaster, also in England, to act as menu planner for the European theater. While assigned to that office, she planned menus for U.S. and French soldiers as well as the Irish laborers under the jurisdiction of the U.S. Army. Since the French Colonial soldiers did not eat pork, lamb was substituted. Corn and peanut butter were not accepted by foreign troops so these were replaced with extra rations of potatoes and bread.

Another outstanding job performance was that of Lieutenant Boelts who was assigned to the Consolidated Officers' Mess in London, England. The smoothness and speed of food service gave it the name of "Willow Run." What was formerly a great ballroom became a cafeteria seating 928 people and a generals' and colonels' dining room seating 75. The main kitchen had been a serving kitchen only and had to be adapted to its new function. The dietitian wrote the menus with suggestions on preparation and counter service which eliminated food shortages and excessive leftovers. Because of the variable numbers served at each meal, rations were drawn on a "by-the-meal" basis and followed the quartermaster field menu, supplemented by rolls, fresh fruit, vegetables, and condiments which were purchased from British sources without coupons or points. Both U.S. military and British civilian mess personnel contributed to the smooth operation of "Willow Run."

Another dietitian, 2d Lt. Ida K. Samuelson, was assigned to Supreme Headquarters, Allied Expeditionary Force. Her duties were writing menus for the generals' messes, checking the adequacy of diets served in the officers' and enlisted men's messes, advising when called upon, teaching proper methods of preparation of dehydrated foods to cooks and mess sergeants, and teaching a weekly nutrition class to mess officers and mess sergeants. She assisted in setting up a new officers' mess, unique in that it was a snack bar open 24 hours a day.

Finally, after V–E Day, 1st Lt. (later Maj.) Myrtle Aldrich was assigned to the Chief Surgeon's Office, European theater, Paris, France, as a consultant dietitian. This move resulted from the requests of dietitians and the recommendation of Maj. Helen C. Burns[36] following her visit to Europe. Lieutenant Aldrich was attached to the Nutrition Branch to help supervise hospital patient's rations. Later, reassignment of dietitians resulting from redeployment became her problem. She visited hospitals in the Normandy, Channel, Seine, and United Kingdom Base Sections, inspected dietetic departments, and met with dietitians to discuss their problems. She made recommendations concerning improvements in patient food service, control of food waste, better utilization of dietitians, and recordkeeping by dietitians.

Dietitians in England operated not only in messes of permanent brick construction with equipment similar to that in the United

[36] Later Maj. Helen B. Gearin, WMSC.

States but also in nissen huts with minimal equipment. Mess personnel had to adjust to the British coal-burning range, farm boilers, wooden sinks, and widely dispersed hospital wards.

In France, dietitians in tent hospitals wore long underwear, fatigues, and four-buckle overshoes. The entire area was often a sea of mud. Tents over concrete or earthen foundations housed kitchens, messhalls, storage areas, and offices. Messkit washups were installed. Wooden tables and benches were used in the messhalls as in World War I.

One Army hospital in France had a unique bakery arrangement. Since rolls and hot breads were so important for morale, it was essential that a way be found to heat the bakery tent so that dough would rise properly. A French hot-air heating unit of the portable type, obtained by the commanding officer, was set up just outside the bakery. The unit contained a firebox with several pipes attached and a motor and fan for blowing hot air into the tent. The bakery was then heated to the desired temperature. After the rolls were placed in tins, they were put into the proof box to rise in moist heat. The proof box was a cupboard made with grooves to hold the tins. A small gasoline stove in the bottom of the cupboard held two No. 10 cans filled with water which completed the proofing arrangement.

1st Lt. Lois Shumaker, head dietitian of the 108th General Hospital near Paris, and her personnel served 4,000 to 7,000 meals daily with giant steam vats as their only cooking equipment. Meats were roasted by increasing the pressure. Since the vats were also used for other cooking purposes, the roasting had to be done at night. Therefore, roasts could not be served hot. Puddings and canned fruits were the standard desserts since there were no ovens to bake pies and cakes. Other popular food items which could not be served because of lack of equipment were steaks, chops, toast, and hotcakes. The rations of their menu ingredients were still drawn, so ways had to be found to prepare them. Fortunately, can openers were plentiful. Over 4,000 cans were opened in 1 day with everyone participating.[37]

In northern France, Belgium, and Germany, most hospital units took over permanent buildings such as hospitals, schools, and military barracks. The hospitals were very well equipped except for the lack of gas and electricity in some of the German hospitals because of destruction of gas mains and electrical lines.

As in other oversea areas, the dietitians in Europe faced the problem of variety in the quartermaster field ration menu. Equipment limited variety in preparation. Fresh fruits and vegetables were missed most by the troops. Because of inadequate transportation and storage facilities, frozen meats,[38] canned meats, dehydrated eggs, powdered milk, and dehydrated or canned vegetables were substituted for fresh meats, vegetables, milk, eggs, and butter. C, D, and K rations were used when

[37] The Dietitian's Column. The Army Nurse 2: 14–15, March 1945.

[38] Frozen meats were obtained from the depots daily or three times weekly and required 24 to 48 hours to thaw before use.

units were in staging areas or in transit.[39] Purchase of food on the open market was prohibited except as contracted by the quartermaster when excesses were available. For sanitation purposes, fresh vegetables in France had to be soaked in Mikroklene for 30 minutes or cooked before serving. Unit gardens were valuable in supplementing the supply of fresh vegetables such as lettuce, radishes, onions, tomatoes, peas, carrots, string beans, spinach, and corn.

The baking facilities of many units prohibited following a menu where two baked products appeared in the same meal or even the same day. Where field ranges were the available equipment and in operation around the clock, the dietitian had to consider workload and servicing of the ranges when she planned menus. She also considered the preferences of the nurses for less starchy meals. She used the heavier food items in feeding sudden influxes of combat patients with insatiable appetites.

Most dietitians, cooks, and bakers were unfamiliar with dehydrated vegetables and eggs and powdered milk. The wide unpopularity of their experiments resulted in a training program in the United States which did much to improve acceptability of these products.

Dietitians and mess sergeants struggled to devise ways to use the frequent issues of corned beef, Spam, and Vienna sausage. They were served baked, fried, dipped in dehydrated egg batter, rolled in dough, pickled, and in salads, sandwiches, or fritters. Units without ice cream freezers used the issued mixes for puddings which were varied with the addition of fruit.

The mess personnel of the 130th Station Hospital in England earned continuous praise for their enterprising efforts from their staff and the thousands of patients who had been hospitalized there.[40] The bakers made gaily decorated cakes using wrapping paper and onionskin paper for decorating tools and spinach puree, beet puree, Nescafé (instant coffee), and powdered eggs for colors. The universally disliked orange marmalade was heated and strained by the cooks and became a delicious syrup for hotcakes and french toast. (This also saved sugar for baking.) Rations were always plentiful. The mess corporal always brought back more from the ration dump than he was entitled to. He was very short, had an innocent and honest face, and parked his truck carefully in the supply dump area where he could add rations after his truck had been checked. The only time he was caught he promised never to juggle rations again. After that he was always careful to supply the ration dump personnel with samples of the hospital bakers' work!

Actually, the food items obtained by that method were never used illegally. During the long period from the Battle of Saint-Lô to the Battle of the Bulge casualties received were far greater in number than the hospital had expected. Originally, hospital personnel had been instructed that the routine would be 48 hours of work and 24 hours of

[39] See footnote 23, p. 196.
[40] Personal knowledge of the author.

rest. It never worked out that way. Patients at one meal averaged 15. The number rose to 1,300 or 1,500 the next meal. The hospital was a 15-minute drive from the airfield. The dietitian looked at the sky each morning before breakfast to check for favorable flying weather and then predicted how many patients would be arriving. The cooks were then instructed as to the food items and the amount to prepare. Since the airfield gave the hospital less than a half hour's notice of patient arrivals, this made a good deal of difference in the menu. For those patients it was impossible to prepare the popular boiled navy beans as these required hours of soaking followed by hours of cooking. Patients had to be fed promptly so they could be cleaned up, evacuated to the next hospital in the evacuation chain, and the station hospital prepared for the next day's (or rarely, twice in 1 day) influx of casualties.

The butcher, of Chinese extraction, contributed his bit by using old rendered fat in making soap. The mess was always clean. The wooden dining tables were not quite so spotless after the dietitian stopped the mess personnel from using lemon crystals as a bleach.

In European theater hospitals, mess personnel were all military early in the war. Later, training programs had to be started by dietitians and mess sergeants because of the loss of keymen to combat units. Cooks's helpers were elevated to cooks, and kitchen police became cook's helpers. Newly assigned unit personnel were responsible for kitchen-police duty.

German prisoners of war and later French civilians were utilized by the hospitals. Problems arose from differences in language, standards, and training. These personnel performed useful services and were amenable to instruction. A dietitian often had to exercise her college German and her limited knowledge of German cooking. The use of French civilians brought problems in attendance, conformance, and personal sanitation.

By July 1946, in Germany, nearly all employees in hospital messes were displaced persons or German civilians. Some of the cooks were very good. Others had sanitation habits which were not pleasing to Americans. It required continual vigilance to produce good food, well-cooked and properly served, especially on the wards.

With the war's end and redeployment of dietitians came the problem of staffing the hospitals of the army of occupation. An estimate of 44 dietitians was made. 1st Lt. Roberta Mack (fig. 55) became the new dietetic coordinator in the Chief Surgeon's Office, European theater. By mid-July 1946, every general and station hospital in the European theater had at least one dietitian assigned, the larger hospitals had the requisite number according to the table of organization while the smaller ones were assigned only one.

Mediterranean (formerly North African) Theater of Operations

The dietitian in the Mediterranean theater quickly discovered that her chief responsibility, the patients' mess, entailed much more than



FIGURE 55—1st Lt. Roberta Mack, dietetic coordinator, Chief Surgeon's Office, European Theater of Operations, 1946. (U.S. Army photograph.)

the preparation and service of food. She was directly affected by the location and type of physical setup of the mess, the quota of buildings, prefabricated huts, tents, or combination of these. Her training and experience were invaluable in these situations when working with mess personnel who were totally unfamiliar with the food service field. One dietitian wrote, "We handle every kind of problem from training Italian waitresses who speak no English to organizing storerooms, making ice cream freezers, experimenting with recipes, and planning mess halls with regard to the way the wind blows and where the rain will drain."

The 21st General Hospital in Italy found a central patients' mess quite satisfactory until additional kitchens could be erected. The information that the mess would be located in a former restaurant was most deceiving, for upon arrival it was discovered that the building was in very poor condition. Before repair work could be started, signal company equipment had to be removed from the dining room. With the aid of an attached engineer platoon, pieces of wall were replaced with tar paper, sinks and plumbing were installed, the drainage system was rebuilt, and heat and lights were added. By enclosing the porch

off the main dining room and installing necessary utilities, 300 more people were accommodated. At its peak, the mess served 2,000 at a time, including 550 orthopedic patients and 150 on special diets. Since the orthopedic patients were handicapped by crutches and arm slings, they were served at special tables by civilian waiters who reset places when their number became too large to accommodate all at one sitting.

From 600 to 1,000 ambulatory patients passed a double serving line using messkits and canteen cups. Special diet and orthopedic patients were provided with dishes and cups. A short-order service was inaugurated by moving field ranges to the serving line shortly before mealtime. Pancakes, fried eggs, and hamburgers were served hot from the griddle.

To add variety to the field ration menu, the dietitian made trips to local markets for perishables. If there was no hospital fund, she assisted in planning and maintaining a garden. Visits to the ration tent (fig. 56) and the class I officer (quartermaster officer responsible for the ration dump, maintaining stock levels, and requisitioning subsistence) meant time lost but proved of much value in correcting inconsistencies in the issue.

Dietitians contributed to therapeutics through experimental studies on the dietary treatment of patients with hepatitis. The contribution of the dietitian to improved food service for patients and personnel was well recognized in the Mediterranean theater. This was demonstrated by a mess officers' conference which asked that a traveling dietitian visit all installations not provided with such personnel, that at least one permanent dietitian be assigned in smaller hospital units, and that dietitians be allowed to attend future conferences of that type.

Shortly after the invasion of Italy, a survey of troops was made in forward areas and evacuation hospitals to determine the extent of adequacy of the ration. The nutrition experts soon realized that malnutrition was partly caused by difficulties in distribution of supplies, tactical situations, and increased nutritional requirements entailed by cold, wet weather. As a result, improvements effected included the addition of fresh meat, butter, and, occasionally, eggs. Surplus fresh fruits and vegetables were substituted for the canned and dehydrated varieties. Troops who had had to subsist on emergency rations for extended periods were permitted some supplements such as fresh bread, coffee, cocoa, tea, evaporated milk, and sugar.

The Expeditionary Force ration [41] as issued in 1944 and 1945 was a great improvement over that of earlier days. Formerly, the foods available to hospitals in the early months of the war were identical with those issued to troops. However, the oversea hospital ration menus, as planned for use with the Expeditionary Force rations, provided a more liberal diet for oversea hospital patients. Issue charts included certain foods, such as boned chicken and canned soups for patients on special diets. It was necessary for all hospital mess per-

[41] See footnote 14, p. 188.

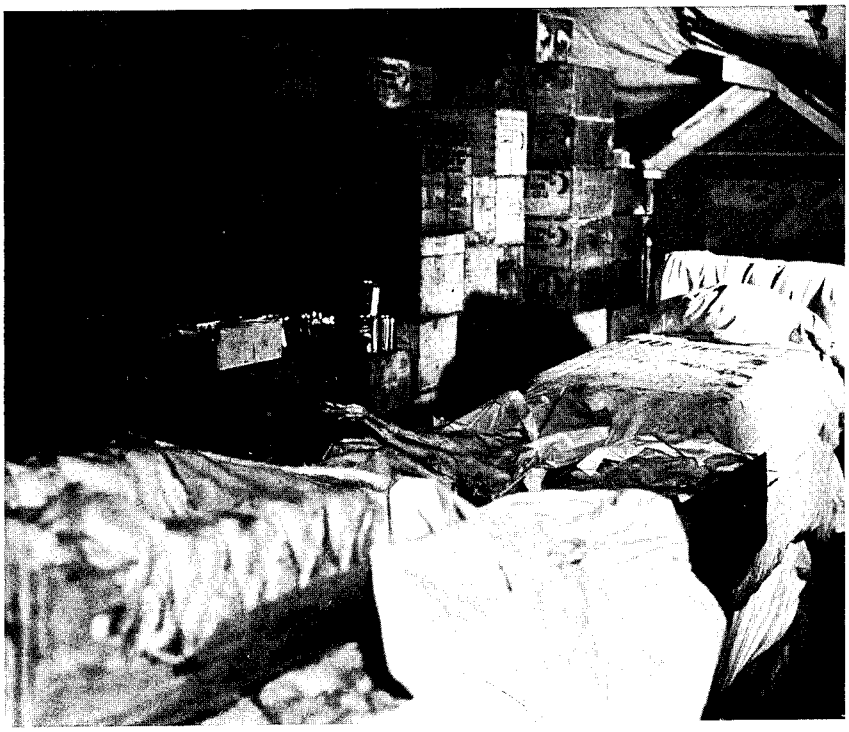


FIGURE 56—Hospital ration tent.

sonnel to become familiar with the amount of each food which should be issued, the type of patient for which each food was intended, and the preparation of the food.

Problems in the distribution of the Expeditionary Force ration appeared minimal when contrasted with those encountered in Africa and Sicily during 1942 and 1943. There the movement of supply was so restricted that hospitals, as well as other organizations, were issued C rations for 30 days at a time. Furthermore, the planned ration, when issued, was often so depleted it was hardly recognizable. This was caused by improper loading in ships; divergence or loss of vehicles; interference in supply because of enemy action; spoilage of food and breakage of cans as a result of frequent handling in shipment and storing; and misappropriation of food, particularly the most delectable items.

Originally, the oversea hospital ration in the North African Theater of Operations consisted of the basic B ration plus special components. But because the needs for these special items varied within each hospital, either an excess or an insufficient quantity was received. Therefore, hospitals were authorized 35 cents per patient per day to purchase any food desired (except fresh meat, butter, fruits, and vegetables), provided quartermaster stores had them.

The consequences of improper distribution were shown in a study made of the caloric value of the ration by an evacuation hospital in Bizerte, North Africa, during July, August, September, October, and November, 1943.

Month	*Low*	*High*	*Average*
July	1,800	2,700	2,400
August	1,900	2,800	2,600
September	1,800	2,700	2,400
October	1,900	2,700	2,400
November	1,800	3,000	2,500

This caloric deficiency was clinically reflected by an average loss in weight of 15 pounds by the organization personnel. This weight loss was probably caused by the monotony of the diet rather than to failure to offer sufficient quantities of food.

During the war period, foodstuffs were drawn each day from the nearest railhead or ration dump. The amount and type required were requested in a daily listing which included the units for which foodstuffs were being drawn, the average number fed the preceding day, and the morning report strength as of the previous midnight.

Every conceivable method was used to secure local foods in Africa, Sicily, and Italy. In the first echelon, the method most commonly used was bartering. As necessities and luxuries were extremely scarce, money was of no value to the natives. Combat troops supplemented their emergency rations with a surprising number of domestic animals that had been killed by mines. In Africa, lemons, oranges, eggs, purple carrots, and fennel were purchased.

The 300th General Hospital in which the hepatitis study was conducted in 1944 and 1945 reported that the average cost per patient per day was approximately 65 cents, almost double the amount allowed for the supplementary ration. This demonstrated the need for an increase in the diet without using food indicated for other patients, although only 50 cents of the B ration was used each day for the hepatitis patients.

By March 1945, all hospitals were authorized to draw food essential to the hepatitis diet within an authorized monetary value of 55 cents per hepatitis patient per day. The unit commander had to certify that the items ordered were indispensible for the patients' recuperation.

An interesting example of bartering was reported by 2d Lt. Helen F. Boswell, while assigned with the 56th Evacuation Hospital in Bizerte. Eggs were obtained by trading tea with the natives. She and her mess sergeant would go out to one of the tribes, stand around an entire afternoon, and perhaps get 15 dozen eggs. They were a little smaller than American eggs.[42]

The greatest problem encountered in serving fresh fruits raw was a

[42] Interview, 2d Lt. Helen F. Boswell, 56th Evacuation Hospital, subject: Report of Medical Department Activities in North Africa and Italy, 28 June 1944.

sanitary one; an epidemic of dysentery was often traced to improper cleansing of fruits and vegetables. The appearance of a disinfectant, Mikroklene, in 1945 may have been partially responsible for the decrease in the number and severity of cases of diarrhea in Italy as compared to a similar period in Africa during 1943.

The Pacific and Asia

The only item of importance lacking was fresh milk in the general diets of Army hospital patients in Hawaii. Hospital patients were allowed a prescribed amount of fresh milk when the request was accompanied by a signed prescription from the ward officer. The scarcity was caused by antibiological warfare security and an inadequate local supply. Canned milk, powdered milk, and cheese were substitutes. In 1945, commercially reconstituted milk became available. This product was prepared in approved local creameries. It was made by pasteurizing, homogenizing, and then rapidly chilling a mixture of fresh unsalted sweet cream butter, skim milk powder, and water. Many unaware of its true nature, liked it. This same procedure, with minor variations, is followed today [1966] in supplying U.S. troops stationed in the Far East.

Dietitians at the 313th General Hospital reported that local food issues were bananas, camotes, pineapples, limes, native oranges, string beans, papaya, sayotes (similar to sweet potatoes), radishes, okra, cucumbers, eggplant, avocados, upo (native squash), coconuts, and rimas. Patients were rather suspicious of the unfamiliar native foods. Upo and sayotes, served in a creole sauce, were fairly acceptable. The purple camotes were drier than the American sweet potato. Rimas were prepared similar to a watermelon rind pickle and were served with roast meats. They were considered quite delicious. The patients thought that the green-skin native oranges were not ripe, but once eaten, these oranges were well liked. Papayas and coconuts were not too popular. Avocados were a little more acceptable. They were mashed with sugar and milk or used in flavoring ice cream. The familiar bananas and pineapple were most popular.[43]

Dietitians and mess personnel planted gardens in farflung corners of the globe. 1st Lt. (later Maj.) Helena D. Quinn, assigned to the 49th General Hospital, Milne Bay, New Guinea, and her office-clerk sergeant planted tomatoes, lettuce, peas, green beans, and melons. Lettuce was their only successful crop. The hospital enjoyed one meal of green beans; the other crops went to seed.[44]

Lieutenant Quinn found that getting things done depended upon a trade basis. The hospital made ice cream once a week for other outfits in return for like favors. Air Corps personnel ground the meat when fresh meat started arriving from the United States and Australia.

[43] See footnote 29, p. 201.

[44] Report, 1st Lt. Helena D. Quinn, Somewhere in the Southwest Pacific, January 1944 to November 1945.

The water supply, furnished from Base A, was the biggest problem. In the midst of the meal, the water supply would be exhausted and the mess personnel would have to use water saved for reconstituting dehydrated food items. After several months, the water problem was remedied.

Lieutenant Quinn had an unusual supply experience at Christmas 1944. It was customary for all units to send details to unload ships whenever they were laden with food. Such a call came through on Christmas Eve; the hospital enlisted personnel went down immediately and unloaded all night. "There were fresh apples, oranges, frozen asparagus, and many other things—eggs, in particular. We were so happy to receive them but the Q.M. called and said it was a mistake—that they were supposed to be shipped forward. It was like parting with diamonds, but after much persuasion and excuses were finally told to keep them as we had been the only hospital that had sent the detail down the night before. We really feasted for the next weeks."

A dietitian in New Guinea (fig. 57) wrote of the difficulties with the food received from Australia:[45]

> Australia has expanded and improved her food products to meet with the demand of feeding the American armed forces. In many instances her attempts have been highly successful. Such foods as canned fruits and corn beef can be used interchangeably with American foods but the highly scented chocolate, butterscotch and vanilla puddings which are shipped to us in large quantities and issued on ration basis, the gelatin, baking powder, fruit juices, canned vegetables, dehydrated vegetables, yeast, and condiments are almost one hundred percent wasted.
>
> * * * * * * *
>
> There is only one brand of Australian cheese and it lacks the flavor and palatability of American processed cheese.
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> * * * * * * *
>
> There is nothing issued to replace these unconsumed foods, as a result patients in many instances are found to be actually hungry. They can not satisfy this hunger by feeding on more staple items such as bread, jams, and peanut butter since bread is an item that varies in the quantity issued from day to day. For the past three months three ounces per day per man has been the basis for issue. To alleviate this situation as much as possible, crackers, cookies, canned soups, pickles and candy have been purchased through the Army Exchange Service, using the hospital fund * * *. Flour is issued in place of bread however, due to lack of bake ovens and adequate number of field ranges it cannot be utilized for baking purposes. Substitutes for potatoes such as rice, noodles, macaroni, spaghetti, tapioca are seldom available. The canned meats are limited to three kinds: hash, stew and corn beef. * * * We would like to suggest that dehydrated ground meat, luncheon meat, spam, vienna sausage, and ham could be substituted for the * * * foods now being sent. Dehydrated eggs have been used successfully in cooking and baking only. The large quantities of sweetened milk can not be used in cooking of soups and cream sauces. They are very poor substitutes for evaporated milk when served as cream for coffee.

The dietitian in New Guinea concluded her report with a résumé of her equipment problems. Of 15 field ranges, 10 were usable. Re-

[45] Report, Dietary Department Conditions in a Hospital in New Guinea, July 1944.

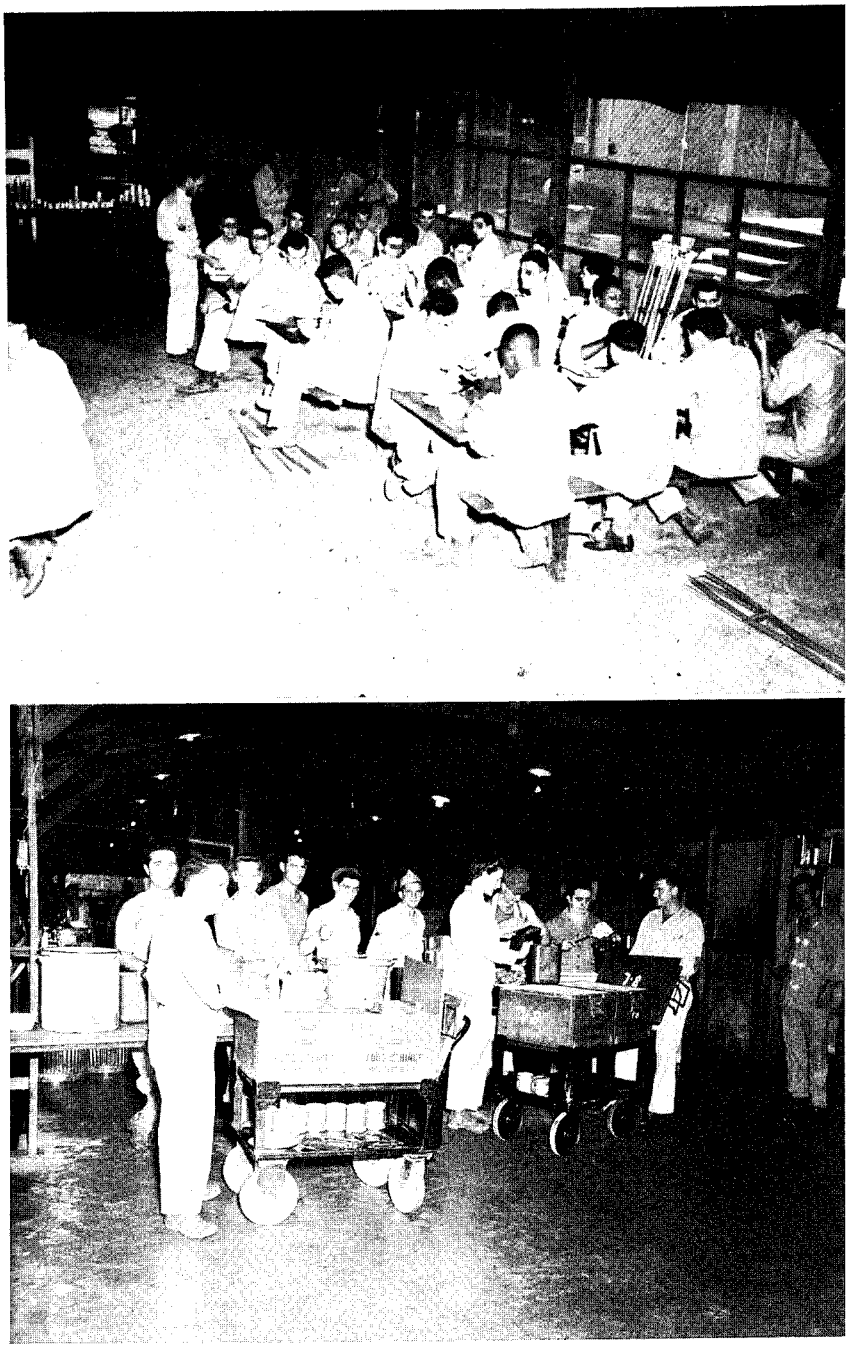


FIGURE 57—Hospital food service, New Guinea, 1944. (Top) Mess for orthopedic patients. (Bottom) Ward food service. (U.S. Army photographs.)

placement parts were needed as well as bake ovens, meat slicers, meat grinders, small-sized saucepans and can openers.

Before early 1944, U.S. Army Forces, China-Burma-India, were required to subsist on the British Field Service Troop Ration supplemented by local purchase and by use of excess reserve stocks of B-ration items. The British ration was considered to be inadequate nutritionally and contained many items which U.S. troops rejected. Milk was limited because of unsanitary local conditions. Fresh fruits and vegetables were scarce and of poor quality. The flour was not enriched but old and weevily. There was confusion in the various headquarters as to how the B rations were to be used. Canned meats and fruit juices were in short supply. In one area, the purchase of desirable items of the supplemental hospital ration by one unit quickly depleted the stocks on hand so that other hospital units were unable to procure items needed for special diets.[46]

The situation was corrected in January 1945. A dietitian assisted the Nutrition Consultant to the Surgeon, U.S. Forces, India-Burma Theater, in working with a quartermaster representative. They drew up a new ration scale in the form of a basic subsistence chart for India and Burma and also a uniform ration system for hospitals. More liberal allowance of canned meats, milk, fruit juices, and canned vegetables were given. The quantities of dehydrated soups and vegetable purees were reduced.[47]

Army hospitals in India had many Chinese patients. As the hospitals expanded, the Chinese Army provided their own messes. Early experience demonstrated the difficulty of satisfying Chinese patients with special diets and food items included in the American ration. It was impossible to prevail upon them to abandon their habits of foraging for themselves in and around the hospital, then stabling, and finally cleaning and cooking their forage in the wards. The Chinese mess detachment cooked rice in separate mess areas. Greens, meats, and seasonings were added to suit the individual taste.

2d Lt. Elizabeth James soon became familiar with Filipino food habits at the 4th General Hospital, Fort McKinley, Philippine Islands. She served them rice as often as it was available, warm orange juice (warmed through standing), and fried cornmeal mush. She resorted to individual meal cards for them when she found them going through the cafeteria line several times one morning. The Filipinos had exhausted a double issue of fresh eggs.[48]

At the 4th General Hospital, the main issue of beef was ground, stewing, and boiling. This situation improved after the dietitian protested to the quartermaster. Steak sandwiches were being served at

[46] Stone, James H.: History of the Army Nurses, Physical Therapists, and Hospital Dietitians in India and Burma, October 1945. [Official record.]

[47] Medical Department, United States Army. Preventive Medicine in World War II. Volume III. Personal Health Measures and Immunization. Washington: U.S. Government Printing Office, 1955, pp. 148–149.

[48] Letter, 2d Lt. Elizabeth James, 4th General Hospital, to Capt. Helen A. Dautrich, 24 July 1946.

the Army post exchange snackbars. The dietitians felt that it would be far better for patients and duty personnel to eat steaks at their own organization messes, than to be served canned meats and patronize the snackbars at their own expense.[49]

Capt. (later Lt. Col.) Eleanor L. Mitchell in her 1945-inspection report of food service activities in the Pacific Ocean Area noted that the low-fat, high-protein diets for patients with hepatitis continued to present a difficult problem because of the scant issue of fresh fruits and vegetables, as well as the small variety of canned and frozen fruits. There was sufficient meat available for the protein source.

Food supply problems existed at one Army hospital in Japan. A 4,500-calorie menu was offered but not eaten. Hospital reports noted shortages of potatoes and bread. The dietitians wanted these included in the hospital supplement. Many items and food combinations on the menu were impractical for ward service, therefore, the patient did not eat 4,500 calories. Patients with hepatitis consumed much bread if they could get it.

Dietetic consultants were appointed to the Surgeon's Office, Headquarters, U.S. Army Forces, Middle Pacific, and to the Philippines. There were no dietetic consultants in Australia, New Guinea, New Zealand, or in India and Burma although dietitians in these locations often expressed their need for such support.

In Hawaii several dietitians had nonhospital assignments. In July 1944, 1st Lt. (later Capt.) Mabel E. Hogan was placed on temporary duty with the School for Cooks and Bakers to instruct in applied nutrition, to act as assistant mess officer of the school, and supervise 10 kitchens operated by the school. 1st Lt. (later Capt.) Evelyn M. Girard was assigned to the quartermaster service in July 1945, to assist at the School for Cooks and Bakers and head the Menu Planning Section, Food Service, Central Pacific Base Command. She acted as a liaison between the Quartermaster Corps and hospital dietitians. Her initial duty was to plan a new 15-day menu for the Hawaiian Department on the basis of food limitations as imposed by the Commanding General, Army Service Forces.

Prisoners of War of the Japanese

Among the Americans in the Philippines who surrendered to the Japanese were the civilian dietitians serving with the Medical Department. Experiencing bombardment at Bataan and in the tunnel hospital of Corregidor, faced with the ever-present fear of abuse by Japanese troops, they suffered more privations and hardships than any dietitians had previously endured. The captured dietitians were Miss (later 1st Lt.) Ruby F. Motley, on an extended tour of duty in the Philippine Islands, and two Manila residents who volunteered to help in the emer-

[49] Report, Capt. Eleanor L. Mitchell, subject: Inspection Report of the 4th General Hospital, Fort McKinley, P.I., November 1945 to February 1946.

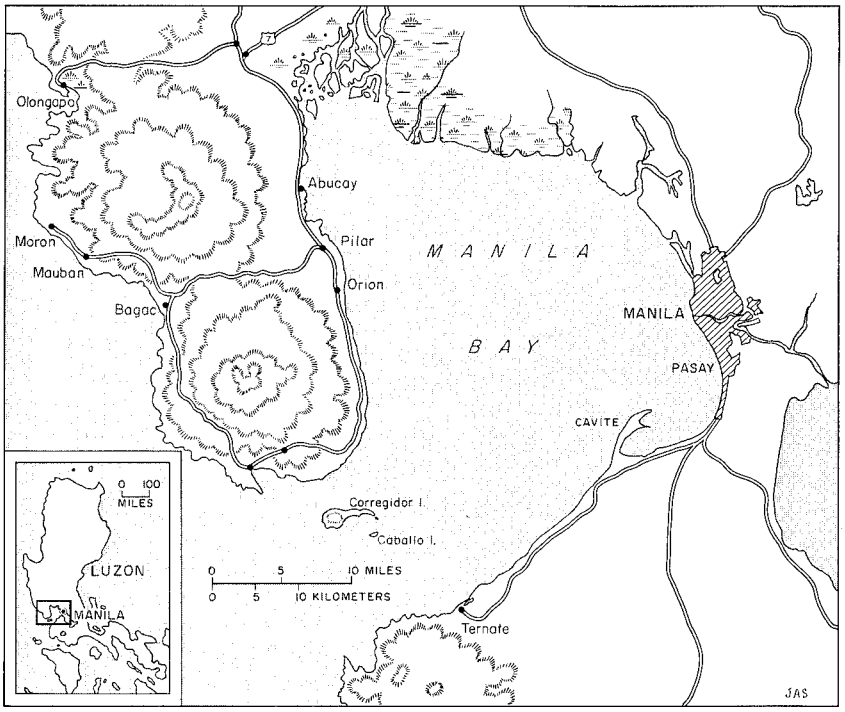


FIGURE 58—Map of Manila Bay area with inset of Luzon Island, Philippines.

gency, Mrs. (later 1st Lt.) Vivian G. Weissblatt, whose husband was a United Press correspondent, and Mrs. (later 1st Lt.) Anna Bonner Pardew, a former Army-trained dietitian.

Miss Motley had arrived at Sternberg General Hospital, Manila, on 14 February 1940 and was the only assigned dietitian in the Philippine Islands. She planned menus for all hospital patients and was reponsible for all food preparation in the officers' mess which served officer patients, officer dependents, enlisted dependents, and all special diet patients. The mess sergeant operated the enlisted mess which took care of the enlisted staff and enlisted hospital patients on regular diets. Food supplies were obtained from the quartermaster and through local purchase of native foods. Enlisted men and a few civilians worked in the enlisted mess. Chinese cooks and Filipino mess attendants were employed in the officers' mess.

When bombing of the military installations near Manila (fig. 58) began on 8 December 1941,[50] casualties poured into Sternberg General Hospital and some of its annexes. To assist in the care of the increased

[50] United States Army in World War II. The War in the Pacific. The Fall of the Philippines. Washington: U.S. Government Printing Office, 1953, pp. 84–96.

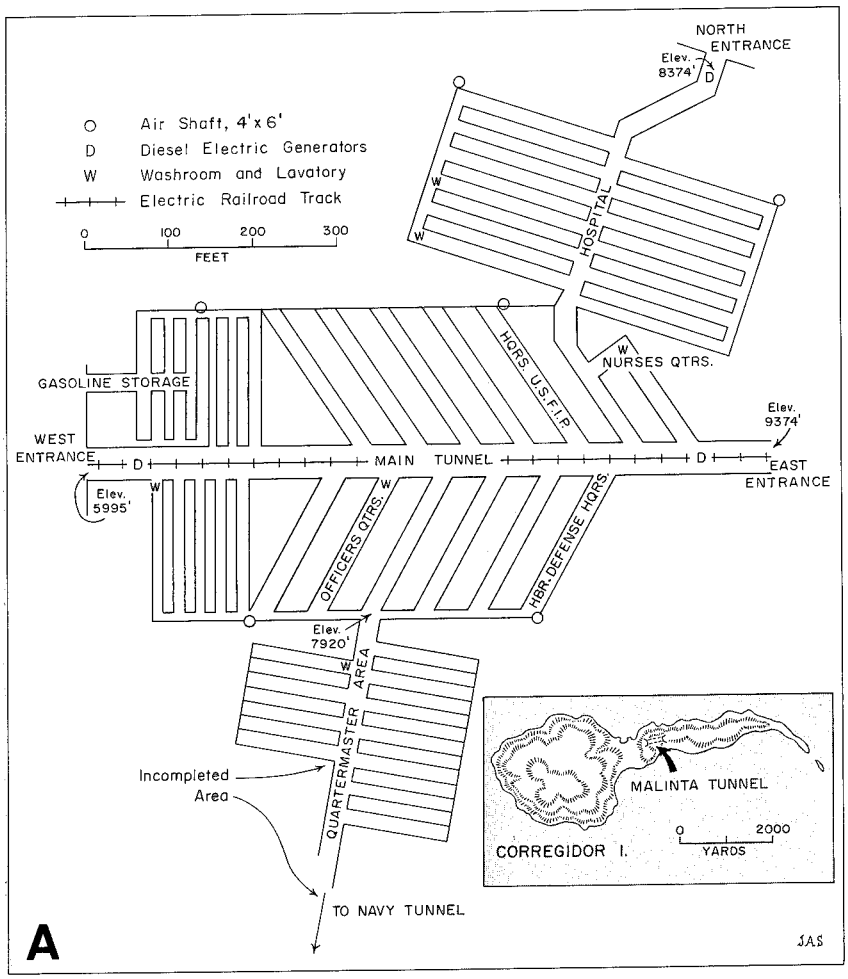


FIGURE 59—Malinta Tunnel. A. Schemata of Malinta Tunnel with inset of Corregidor.

patient load, Mrs. Weissblatt was employed to assist Miss Motley at Sternberg and Mrs. Pardew was hired to direct the food service at Fort McKinley Station Hospital. Because of the proximity of this hospital to Nichols Field, which had already been heavily bombed, the majority of the medical staff and all patients were transferred on 13 December to Annex B in Manila. Mrs. Weissblatt was assigned to General Hospital No. 2 when the evacuation of patients and personnel from Sternberg was begun on 24 December. Mrs. Pardew remained in Manila and was interned at Santo Tomas Internment Camp after the Japanese occupied the city.

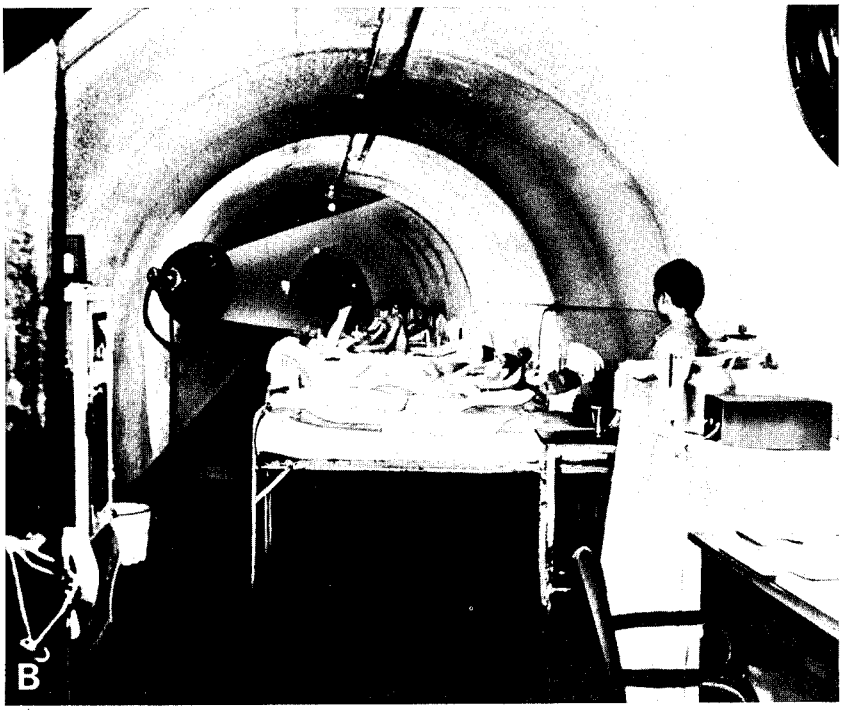


FIGURE 59—Continued. B. Hospital ward in tunnel.

Malinta Tunnel Hospital, Corregidor

Miss Motley was transferred to Corregidor on 30 December 1941, the day after that island had received its first heavy bombing. The Topside Hospital had been hit several times and the whole installation had been moved into a section of the Malinta Tunnel (fig. 59). The hospital section was overflowing with patients. Miss Motley was a welcome addition to the kitchen for this released a nurse who was greatly needed on the wards.

The tunnel hospital kitchen equipment, which provided for about 300 patients, consisted of two family size electric ranges, one icebox, and a cook's table. With an increase to approximately 1,500 patients, personnel, and attached individuals, it was necessary to set up field ranges outside the tunnel entrance to the hospital section. Cooking outside was a hazardous undertaking during the shelling and bombing which were frequent occurrences on Corregidor during two phases of the Japanese effort to gain control of Manila Bay.[51]

Since it was not known how long the available food supplies would have to last, soon after Miss Motley's arrival, it was decided to serve

[51] Cooper, Wibb E.: Medical Department Activities in the Philippines From 1941 to 6 May 1942, and Including Medical Activities in Japanese Prisoner of War Camps. [Official record.]

only two meals a day. There was a supplement of hot soup and sometimes bread at noon. Sick patients still received special foods.

A day's menu in January 1941 consisted of the following:

Breakfast	*Noon*	*Supper*
Canned fruit	Soup	Meat
Cereal, with milk and sugar	Bread	Canned vegetables
Bread and butter		Hot rolls and butter
Coffee		Canned fruit

General Hospital No. 2, Bataan

Miss Motley was transferred on 6 March 1942 to General Hospital No. 2 and Mrs. Weissblatt replaced her at Corregidor. The Bataan hospital at this time was operating 6 messes and feeding about 4,000 people on half rations. The mess officer and Miss Motley made trips to the quartermaster food dumps to get canned milk, meat, and fruit juices for the patients. Horses and carabaos served as part of the meat supply. There was no refrigeration so warm meat from the slaughterhouse had to be cooked immediately upon arrival at the hospital. Canned meat items consisted of salmon and sardines; one can of salmon had to serve 10 persons. The pattern of two meals served each day was similar to that at the Corregidor hospital.

Miss Motley described the kitchen equipment in General Hospital No. 2 as "the poorest in the world." Each mess had a field range or two but most of the food, particularly rice, was cooked over firepits dug in the earth. There was no small equipment and any kind of cans that were available were used to take food to the bed patients. Flies were the greatest sanitation problem since the hospital was out in the open under the trees.

The hospital was camouflaged but concealment of the long mess lines was a constant problem. Strafing by the enemy was always feared but never materialized even when the lines increased to 1,000 or more men. Because of the blackout requirement, meals were cooked and served only during the daylight hours.

Because General Hospital No. 2 with its 6,000 patients lay directly in the path of the advancing enemy, all female personnel were transferred during the night of 8 April 1942 to Corregidor. By the next morning, the front was less than 4 miles from the hospital.

Return to Corregidor

In the tunnel hospital at Corregidor, bombs could not hurt patients and personnel but all were constantly aware of these from the concussions and reverberations. The blowers supplying fresh air were almost always out of order. Much of the time the electric lights were out because of shellfire hitting the power lines. Messing problems were intensified and greater than before because of increased enemy action and the high patient census.

In addition to battle injuries, patients had upper respiratory infections, malaria, and diarrhea. Dysentery was rarely seen. Before the war, there was no malaria on Corregidor; the troops brought this disease with them from Bataan. There were few neurospsychiatric cases. Vitamin deficiency diseases were beginning at the time of capitulation with a few cases of wet and neuritic beriberi.

Strict food rationing was enforced at the Corregidor hospital. The two dietitians made ward rounds before each meal to get the patient count. From the total census the dietitians partially determined the size of serving for each patient. The amount given was also dependent upon the food supply and the number of interruptions in cooking at the entrance to the tunnel. Only the duty personnel ate in the small messhall; all patients had to be served on the wards. Everyone who could helped to maintain food service.

Capitulation

With the fall of Corregidor, on 6 May 1942, came great relief that the month of continual bombing was over. The medical personnel had been working steadily with little opportunity for sleep or rest.

The Japanese confiscated most of the U.S. Army commissary food but did issue small amounts of a cereal product, canned meat, canned tomatoes, and other canned foods. The dietitians were able to get canned soup and milk for sick patients about once a week. The mess officer and dietitian, being familiar with different places food had been stored in the tunnel, made occasional looting trips. Much of the food had been removed but their raids did produce corned beef hash and tomatoes. Later, it was learned that the Japanese did not like canned tomatoes.

The women were restricted to the tunnel for nearly 6 weeks except for an hour each evening when they were permitted to go outside. The women serving in the Medical Department were never mistreated by the Japanese. They were interrogated, however, in minute detail about their personal histories. The Japanese were surprised to find women officers in the U.S. Army and being unable to grasp just what a dietitian was, they classified Miss Motley as a nurse.

On 25 June, the hospital was moved above ground to the renovated old hospital. The women, under constant guard, were permitted to continue their duties.

The ration at this time was inadequate and barely enough for existence. The Japanese paid little attention to what was requested and would usually issue rice, canned meat, salmon, and tomatoes. Out of the wheat flour on hand the baker made hot bread once each day.

On 2 July, with no advance notice, the patients and most of the male personnel were moved to Manila. The remainder of the hospital staff including the women were moved the next day. The women were

taken to the University of Santo Tomas, and the men, both patients and personnel, were interned elsewhere.

Santo Tomas Internment Camp

Santo Tomas was a civilian internment center of about 4,000 people, largely American, British, Dutch, and Polish who resided in the Philippine Islands and were caught there with their families. Because of the warm welcome accorded the newcomers by their friends in the camp, the women from Corregidor were taken to another building outside of Santo Tomas. Here they were restricted to two rooms. The larger was used as a bedroom and the smaller as a dining room. They were allowed outside twice a day for 1 hour.

In the latter part of August 1942, these Army women were moved to Santo Tomas and allowed the privileges of the camp. Their quarters were former classrooms which were alive with bedbugs. There were 400 women for each bathroom (4 showers and 4 toilets). There was plenty of cold water but no hot water.

Men in the camp were responsible for the sanitary details while the women cleaned rice (full of worms and small rocks) and prepared vegetables for cooking. All work in the camp was done by the inmates. Everyone was expected to contribute at least 2 hours of work each day. Miss Motley, unwell and not assigned a definite detail the first few months in camp, volunteered and cleaned rice every morning.

The three camp kitchens were staffed with volunteer workers. When a fourth kitchen was opened for children under 3 years of age, Miss Motley and Mrs. Weissblatt helped with this project. Both dietitians did so well in the smooth operation of this kitchen that the chairman of the food committee requested that they take over the operation of the older children's kitchen. Then, in February 1944, Miss Motley took over the hospital kitchen.

The Japanese authorities allowed so much per capita for camp feeding which was supplemented by the American National Red Cross. A Filipino woman known as the "Angel of Santo Tomas" did the daily buying. For nearly 2 years she was able to procure food of high nutritive value for both the hospital's and children's kitchens. Money and personal valuables were used by those eating from the central kitchen to augment their meager diets with purchases from Filipino vendors, through the black market, or from friends.

The problem then was to distribute the food evenly for even a few grains of rice were of great importance. When people are hungry their attitude toward food is not entirely rational and the small supply had to be stretched to feed 4,000 people. Generally, only two meals a day were served. It was agreed that the heavy workers, those caring for the sick, and those involved in sanitation and other camp duties, should receive extra food. When it was possible to provide a thin soup or mush at noon, this was done because it helped the morale of the camp so much.

Also contributing to the morale were the homegrown vegetables from the camp garden. Tomatoes, okra, eggplant, and talinum, a fast-growing vegetable, were grown on a mass production basis. The menu on Thanksgiving Day, 1944, was typical of the daily ration:

Breakfast:	Cornmeal mush (no milk, no sugar)
Lunch:	Luago (thin rice mush)
Dinner:	Rice and camote tops vegetable stew

During the last 6 months of internment, Miss Motley reported that the average diet was deficient in minerals, vitamins, and proteins in particular. There were many cases of beriberi. Many deaths resulted from malnutrition and starvation which occurred more among the older men and women. The average weight loss was from 30 to 50 pounds. Many people fainted in mess lines. At one time, Miss Motley submitted a report to the Japanese military staff on the general decline in the health and weight of the prisoners in the hope that pity would be shown and the rations increased. The report was brushed aside.

The end of the long struggle began early in February 1945 when the U.S. Army moved into Manila. The camp was in its usual blackout but the smell of U.S. gasoline from the tank at the gate made the prisoners realize that their days of being locked up without freedom, living under very crowded conditions, existing on a submarginal diet, and exposure to the hazards of war were over. In the ensuing mopup engagement, Mrs. Weissblatt was seriously injured by shell fragments but recovered satisfactorily.

CHAPTER VIII

Professional Services of Physical Therapists, World War II

Colonel Emma E. Vogel, USA (Ret.),
Lieutenant Colonel Mary S. Lawrence, USA (Ret.), and
Major Phyllis R. Strobel, USA (Ret.)

When it was thought that World War II would extend over a long period of time, serious consideration was given to the conservation of manpower to meet a prolonged war. Toward this end, in 1943, the President appointed Mr. Bernard M. Baruch to serve as chairman of a committee [Advisory Unit for War and Postwar Adjustment Policies] to report on "The War and Postwar Physical Rehabilitation and Reconditioning Programs." Serving on this committee were representatives of the medical services in the U.S. Army, U.S. Navy, U.S. Public Health Service, and Veterans' Administration; representatives of the Federal Security Agency and the National Research Council; and several civilian physicians specializing in the field of physical therapy.

Several subcommittees were established to explore the needs in various fields, chief of which was a subcommittee to study the relationship of physical therapy to wartime rehabilitation and peacetime physical fitness preparedness. In this connection, a survey of physical therapy programs in Army general hospitals revealed common problems which included: [1]

1. The need for basic and clinical research to determine the reaction of normal and abnormal tissues to physical agents.
2. The need for standardization of equipment, particularly electrical apparatus.
3. The lack of standardization of maximal beneficial intensity, duration, and frequency of application of physical agents.
4. The need for more medical officers trained in this specialty.
5. The need for more trained physical therapists.

Obviously, the increasing patient load in Army general hospitals during the war precluded conducting basic research, but the findings of this committee clearly pointed out the vast amount of clinical research and standardization to be accomplished in this field. Limited clinical research subsequently carried on in these hospitals resulted in a reevaluation of the treatment programs for patients with combat injuries and the development of the specialized treatment programs. These programs were widely acclaimed not only in military circles but in civilian fields as well.

[1] Report, Subcommittee on Rehabilitation, Baruch Committee on Physical Medicine, 1943.

ZONE OF INTERIOR

Types of Hospitals

There were four types of Army hospitals in the Zone of Interior during World War II; namely, general, regional, station, and convalescent. With the marked increase in the patient load early in 1944, it was decided that general hospitals would care for all patients evacuated from theaters of operations. At this time, some large station hospitals were redesignated as regional hospitals not only to care for patients normally seen in station hospitals but also to serve as general hospitals in the Zone of Interior. By December 1946, all regional hospitals were closed or had reverted to station hospital status.

Generally speaking, the general hospitals were named in honor of deceased military medical personnel and station hospitals were identified by the military reservation on which they were located. At the beginning of the emergency, there were five named general hospitals in the United States. These were markedly expanded by using every available space such as porches and wide corridors for additional beds. After the passage of the Selective Training and Service Act of 1940, plans were immediately implemented for the construction of additional hospitals. Altogether, 60 additional general hospitals were added. Some were of the cantonment type made of wood or brick; some were 2-story brick, tile, or stucco; 6 were in converted hotel buildings, and 5 were in converted civilian buildings not designed primarily as hospitals. Of these, 9 became operational in 1941; 11 in 1942; 24 in 1943; 12 in 1944; and 4 early in 1945.

The only major operational problems in these new hospitals, as far as physical therapy was concerned, were the supply of hot water, the size of the clinic, and the slow procurement of equipment. As originally planned, physical therapy clinics in the new cantonment-type general hospital were entirely too small to accommodate the heavy patient workload and required drastic expansion. Hotels and other buildings in which hospitals were established required considerable alteration to provide adequate space for increased workloads in the physical therapy clinics (fig. 60), especially in those designated as specialized treatment centers.

During the war there were 44 station hospitals in operation in the United States, most of which were of cantonment-type construction. When the troop training program was at its maximum, it was sometimes necessary to have more than one station hospital on a military reservation in order to care for the heavy patient load. All of these hospitals were similarly equipped insofar as the physical therapy clinic was concerned. As the movement of troops overseas was accomplished, the military population at these posts decreased and station hospitals were either closed or redesignated as regional hospitals. Since many of the physical therapists who had served at station hospitals for several

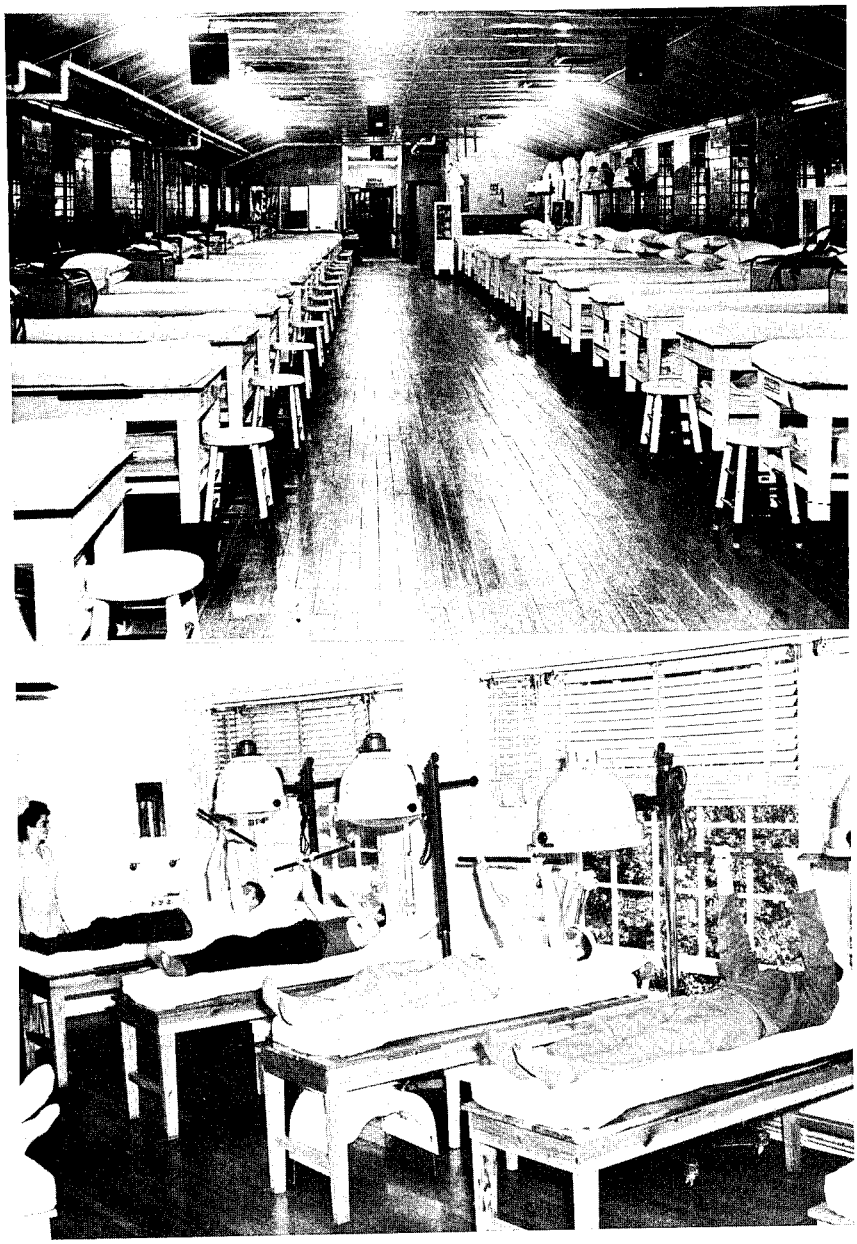


FIGURE 60—Physical therapy facilities, Zone of Interior. (Top) Deshon General Hospital, Butler, Pa., a converted civilian sanatorium. (Courtesy of National Library of Medicine.) (Bottom) Ashford General Hospital, White Sulphur Springs, W. Va., a converted hotel building.

years were entirely unfamiliar with the specialized treatment programs, every effort was made to reassign them so as to afford them this invaluable experience.

Specialized Treatment Programs

As new Army general hospitals were activated early in 1942, it became obvious that specialists to staff them were limited in number. The solution lay in concentrating related specialties in one hospital and designating it a specialized treatment center. "By the time the peak patient load was reached in June 1945, there were 234 centers for 21 specialties with a total of 132,178 beds in 65 general hospitals in the United States." [2]

The extent of the specialized treatment programs is indicated by the number of general hospitals designated to provide them; for example, amputations, 7; neurosurgery, 19; orthopedic surgery, 35; thoracic surgery, 5; trenchfoot, 3; and vascular surgery, 3. In many instances, a general hospital was designated to develop more than one specialized treatment program. An example of this was Kennedy General Hospital, Memphis, Tenn., where programs were developed in neurology, neurosurgery, psychiatry, and general, orthopedic, and thoracic surgery.

Concentrating specific groups of patients in this manner was a definite advantage. Current treatment methods were evaluated, and as a result of study and research of a vast amount of clinical material, new programs were developed to insure a more effective therapeutic approach to patients in these groups. Physical therapists assigned to such centers had a most unusual opportunity to participate in these programs and in many instances made outstanding contributions.

Amputations

There were approximately 15,000 patients with major amputations in World War II. Early in 1943, five hospitals were designated as specialized centers for the treatment of amputees: Bushnell General Hospital, Brigham City, Utah; Lawson General Hospital, Atlanta, Ga.; McCloskey General Hospital, Temple, Tex.; Percy Jones General Hospital, Battle Creek, Mich.; and Walter Reed General Hospital, Washington, D.C.[3] As the patient load increased, two other general hospitals were added: Thomas M. England General Hospital, Atlantic City, N.J., August 1944 (which became the largest amputation center in the United States), and McGuire General Hospital, Richmond, Va., January 1945.

Many of the amputees arrived in the Zone of Interior with open wounds resulting from guillotine amputations. Approximately 20 per-

[2] Smith, Clarence McKittrick: The Medical Department: Hospitalization and Evacuation, Zone of Interior. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1956.

[3] War Department Memorandum No. W40-9-43, 6 Mar. 1943, subject: General Hospitals Designated for Special Surgical Treatment.

cent were upper extremity and 80 percent lower extremity losses. Many arrived with advanced necrosis and bone infection. Initially, the management of these patients differed from center to center, but later, procedures were relatively standardized throughout the Army hospitals.

Early in the war, amputation stumps were placed in traction until healed and ready for corrective surgery. Later, when it was determined that early physical therapy procedures hastened the healing process, patients with unhealed stumps were sent to the clinic for treatment. At Walter Reed General Hospital, the treatment of choice was the whirlpool bath, followed by zinc peroxide ionization. The zinc peroxide acted as a stimulant in the formation of granulation tissue. Some centers used localized ultraviolet irradiation to achieve this. The whirlpool bath relieved pain, increased circulation to the part, and cleaned unhealthy areas. Twenty-eight leg whirlpool baths were kept in almost constant use by these patients. The odor of osteomyelitis, which was almost overwhelming, was tempered somewhat by the use of a pine-scented germicide added to the water. With the large number of whirlpool baths in constant use during the day, it was necessary to install a separate hot water heater for the physical therapy clinic in order not to deplete the supply of hot water required for other hospital functions.

The use of stump massage varied from center to center. Some medical officers believed it was necessary to control edema, to free adherent scars, and to increase circulation. Others believed that massage was contraindicated as it softened the stump and irritated nerve endings at the suture line. Consequently, in some hospitals, massage was prescribed routinely in both preprosthetic and postprosthetic phases, whereas in other hospitals, it was not used at all. Bandaging during the prerevision stage was minimal to avoid circulatory constriction.

Following surgical revision, the amputee started a new physical therapy program designed to strengthen weak muscles, stretch contractures, and to shape the stump. A physical therapist gave each amputee a manual muscle test and worked out a set of therapeutic exercises designed to meet each patient's individual needs. A vigorous exercise program was stressed (fig. 61). If a contracture was present, it was stretched manually by the physical therapist. Occasionally, when a stubborn contracture persisted, such as a hip flexion contracture of a high-above-knee amputation, weights were strapped to the stump to stretch and correct the alinement. In order to toughen the stump for the use of a prosthesis, tapping, or pounding the stump was sometimes indicated.

Proper bandaging by a physical therapist aided the shrinking and shaping of the stump. An effort was made to teach the amputee how to bandage his stump. Some patients learned to do this, but with others, the end results left much to be desired.

After the amputees received their prostheses, occupational therapists trained the upper extremity amputees in the use of their prostheses, and lower extremity amputees received gait instruction in the physical therapy clinic. Physical therapists working with the patients in amputa-

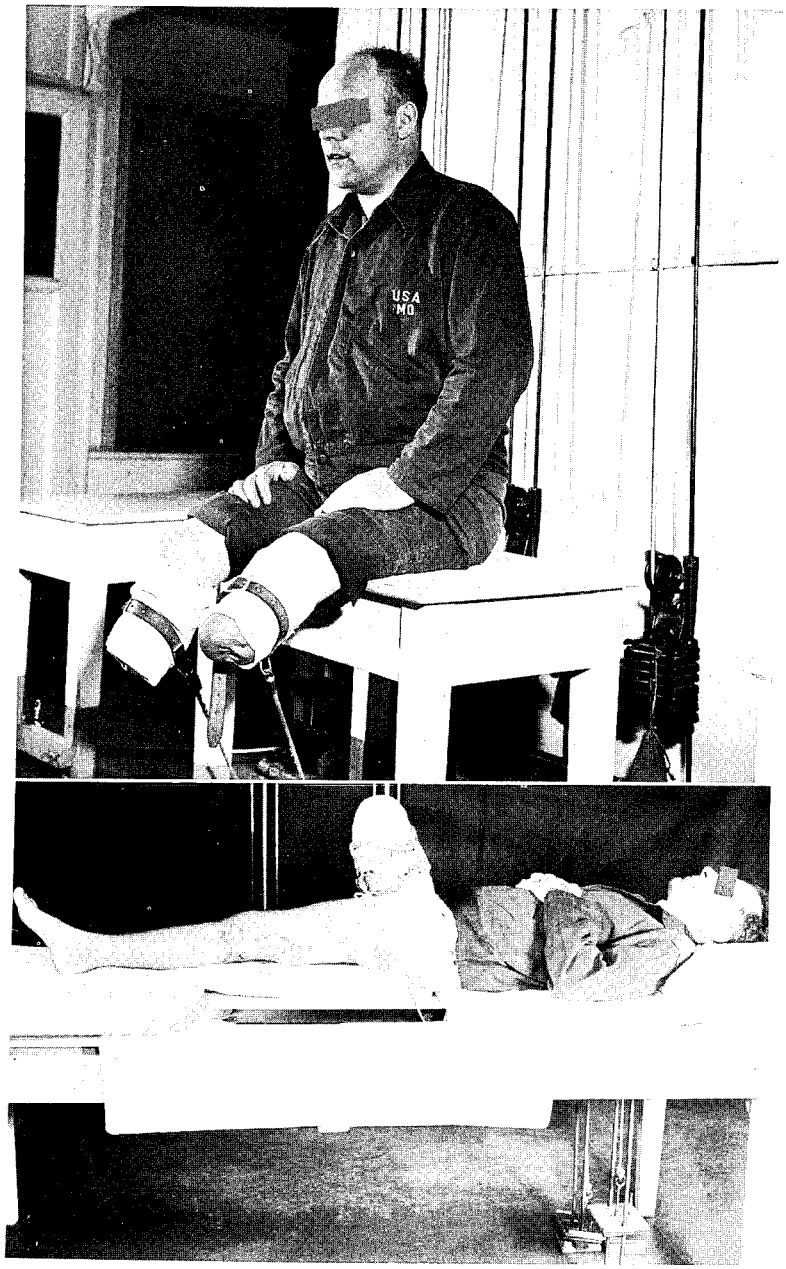


FIGURE 61—Exercise for the amputee. (Top) Wall pulleys. (Bottom) Modified Mennel table.

tion centers communicated with them using such words as Symes, Chopart, Gritti-Stokes, end bearing, ischial weight bearing, above knee (A/K), and below knee (B/K).

Because these patients were predominantly young healthy soldiers, with a strong drive to become gainfully employed civilians, they were extremely cooperative with their walking instructors. Walking areas were equipped with parallel bars, posture mirrors, plumblines, ramps, and sets of stairs (fig. 62). For walking instruction, the amputees were classified according to their disability into four groups: unilateral above knee, unilateral below knee, hip disarticulation, and bilateral. The classes were divided according to walking ability as beginning, intermediate, and advanced. The prosthetist brought each new prosthesis to the clinic. The patient was not allowed to take it with him to the ward until the physical therapist decided that he would not damage his stump by prolonged walking or develop an incorrect gait pattern. The men dressed in swim trunks and started on crutches in the beginning class. Balance, normal speed, and fit of the prosthesis were stressed, with the physical therapist constantly checking the stumps for blisters or areas of discomfort. Instructions were given in the hygienic care of the stump and stump socks.

In the intermediate class, the patient changed from the use of crutches to canes, learned the more common walking procedures, and developed uniform stride and rhythm. Those in the advanced class walked without assistance with arms swinging normally. The final objective of this class was to pass an achievement test which included many activities, such as falling and rising from the floor, stepping on and off a curb, hill climbing, and walking on rough terrain. Of prime importance was the ability of the physical therapist to correctly analyze the gait problem. She had to know what caused a patient to limp, whether it was weak musculature, a painful stump, a contracture, or improper fit or alinement. Having determined the reason, she helped him correct the fault so that he could walk as normally as possible.

Physical therapists on duty at amputation centers found this a very pleasant assignment. The convalescent patients were young healthy men, congenial, fun-loving, and active. They often challenged the physical therapists to basketball games and invited them to dancing classes conducted by the American National Red Cross. Occasionally, they needed an understanding person to accompany them on their first apprehensive appearance at a public beach.

Head injuries

Head injuries were direct results of bullets, shell fragments, blows by blunt objects, blast concussion, and other diverse causative agents. Salvage of these patients was high when compared with World War I mortality statistics. The reasons for this were many: chemotherapy, antibiotic therapy, early debridement by neurosurgeons in evacuation

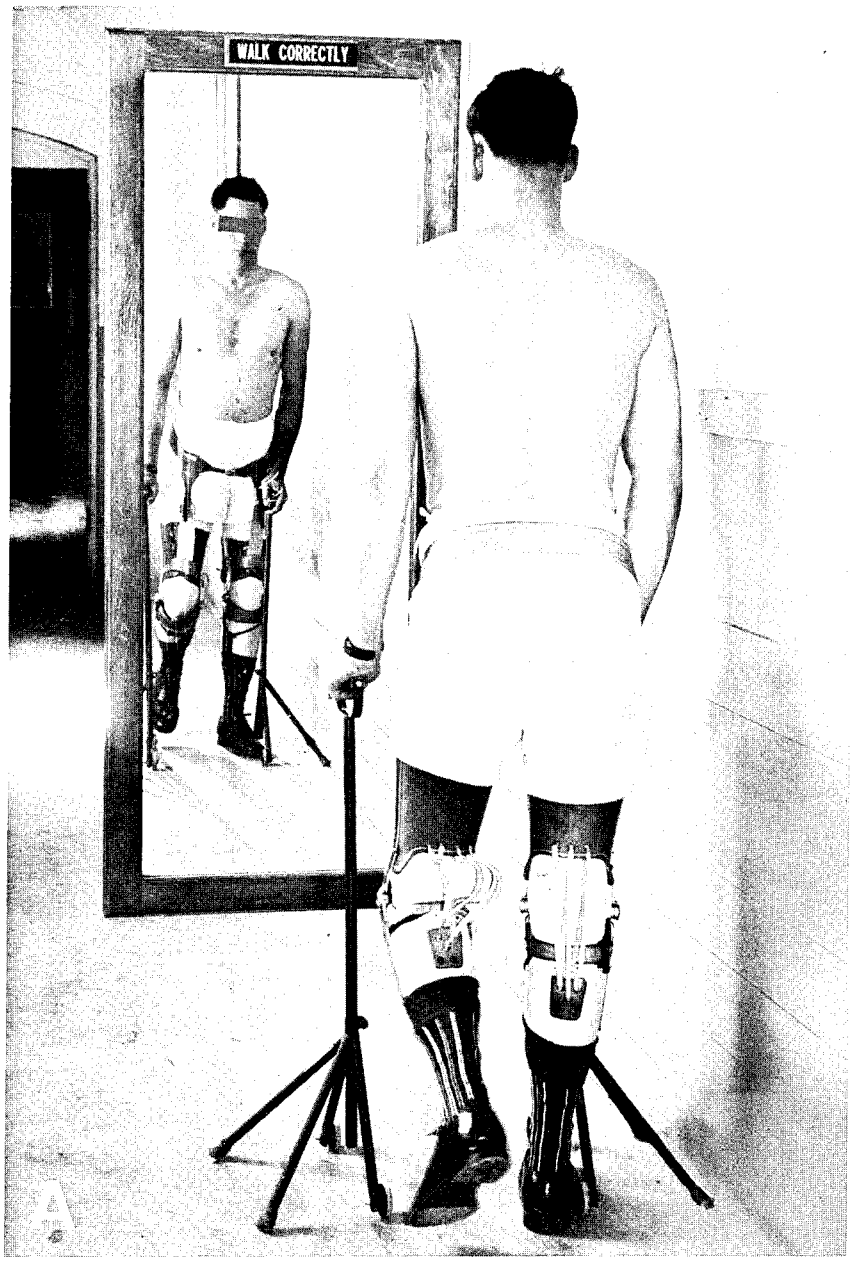


FIGURE 62—Exercise and instruction for lower extremity amputee patients. A. Walking with the aid of cane gliders.

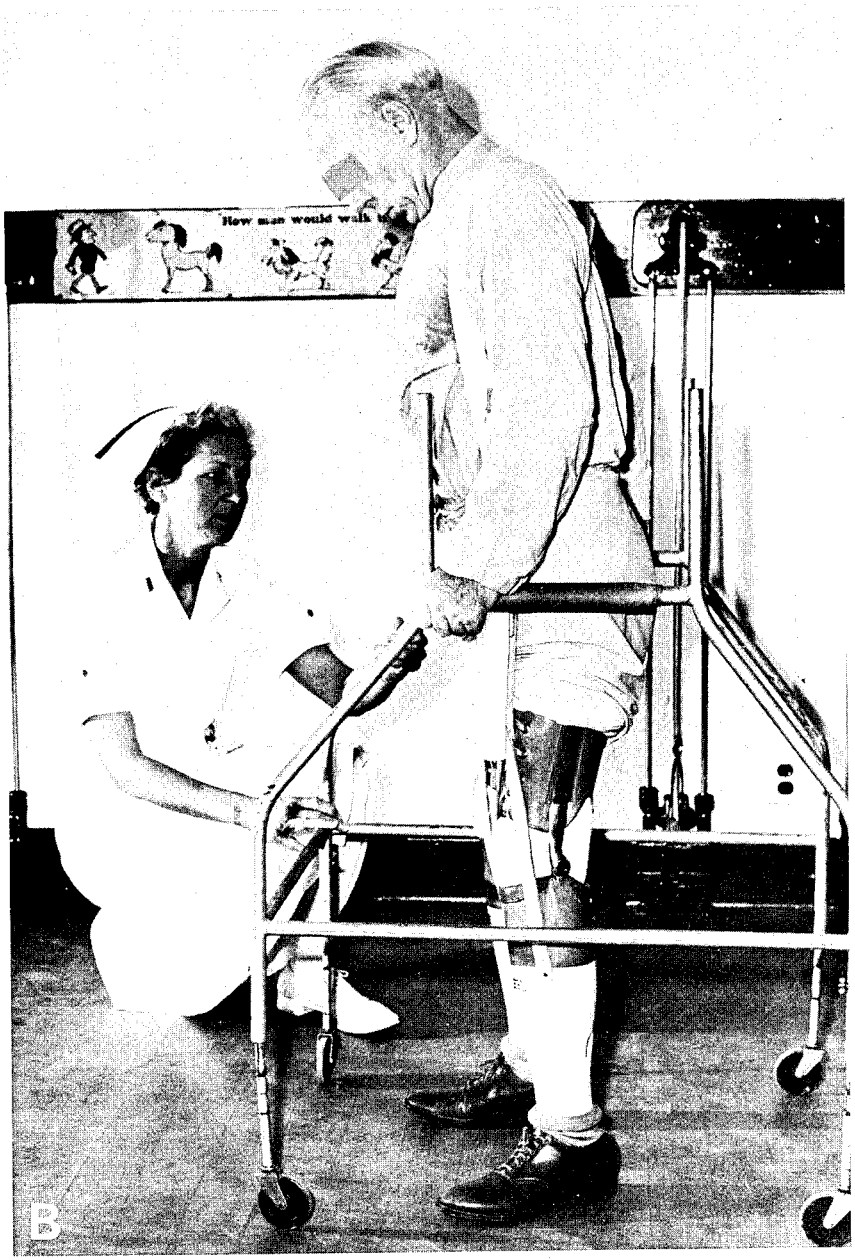


FIGURE 62—Continued. B. Instruction in walking with the use of the walker. (Courtesy of National Library of Medicine.)

hospitals close to the frontlines, and early physical therapy. Patients arrived in the Zone of Interior with histories of skull fracture, hematoma, meningitis, brain abscess, residual bone fragments, and imbedded foreign bodies. Many were candidates for cranioplasty and other surgical procedures. These patients were a tremendous challenge to all concerned with their eventual rehabilitation. Some were spastic hemiplegics or quadriplegics, some were athetoid and others atactic. Some suffered posttraumatic epilepsy. Visual field disturbances were common. Patients with aphasia were a perplexing problem.

The rehabilitation of the brain injured was a long, slow process, and both the patient and the physical therapist had to be acutely aware of this. Such patients were housed together in wards and treated in the clinic with similarly severely debilitated patients, so that they would not become discouraged by the lack of early recovery. At this time, the main goals of the physical therapy program for the head injured were to help the patient to avoid bad patterns of motion, to help him become cosmetically presentable, and to help guide him through his psychological gloom to a healthier, happier, social and emotional life. Before he started his long-term physical therapy program, the patient received a manual muscle test and his muscle strength was recorded. He was classified in one of three types of disabilities: spastic, atactic, or athetoid. Reeducation exercises differed for each type.

Some hemiplegics presented marked flexion deformities, whereas others had extremities that were almost flail; the spastic muscles were hyperirritable and overactive to stimuli. The patient's voluntary control over these muscles was very much impaired. First the physical therapist passively exercised the part and then the patient slowly progressed to actively exercising by himself under constant careful supervision.

One of the problems the atactic patient faced was that of loss of kinesthetic sense. He found that he had to watch the extremity which was in motion so that he could determine just where it was in space. A head-down gait pattern was corrected ultimately by the utilization of vision. The patient was trained to focus on his environment. He had to relearn control of balance and coordination. The athetoid patient, distressed by involuntary unwanted overflow motions of the body, received instructions in relaxation and motion from the relaxed position.

The equipment needed for these patients was simple and easily constructed. Broad plywood skis were used to assist the patient with poor balance, thus giving him a wider standing base. A relaxation chair was built for those who could not sit in an ordinary straight chair. This chair, used during treatment periods, could also be wheeled about for socializing on the ward—an excellent morale builder of value in the treatment of severe cases were powdered boards which allowed gliding movements with neither friction nor the resistance of gravity.

In addition to specialized treatment received in physical and occupational therapy clinics, a generalized rehabilitation program was also planned for these patients. Games were organized for both ambulatory

and wheelchair patients. Group discussions were held on a variety of subjects, including current events. Self-care was stressed in feeding, dressing, and putting braces on and taking them off. Ambulatory patients policed their own ward areas. Speech therapy was provided when indicated.

Peripheral nerve injuries

The incidence of extremity wounds in battle casualties in World War II was 65 to 70 percent, and 15 percent of these were complicated by injury to one or more major nerve trunks. Peripheral nerve injuries were often combined with fractures, soft tissue loss, and vascular disturbances. By September 1944, treatment of these patients was concentrated in 19 neurosurgical centers.[4]

On the initial visit to the physical therapy clinic, the patient was usually scheduled for the following tests: manual muscle, sensory, dermometer, and one or more of the electrodiagnostic procedures.

Using her knowledge of anatomy, kinesiology, and the standard test positions, the physical therapist completed a manual muscle test, grading the patient's response to applied resistance. The approximate level of the lesion was localized by this test and the extent of nerve damage evaluated. Followup tests were performed periodically.

A sensory test determined areas of anesthesia. A wisp of cotton and a pin were used to outline areas lacking superficial touch, sensation, and pain. Since the area of diminished sensitivity was similar to though not identical with that of no perspiration, a sweat test was often given. For this test, the involved extremity was swabbed with quinizarin dye, cobalt chloride, or starch iodide and the patient placed in a hot, dry cabinet bath which caused profuse full body perspiration. Dry areas of anesthesia were drawn on a diagram or the patient was photographed. If a cabinet bath was not available, an injection of pilocarpine nitrate was used or hot tea and aspirin were given to force perspiration.

The dermometer, an instrument for measuring skin resistance, was also used by the physical therapist as a diagnostic measure. High skin resistance was discovered where functioning sweat glands were sparse or absent.

Although the Army pioneered in developing electrodiagnostic procedures during World War I, much was done in the thirties to standardize these tests, both in civilian and military medicine. During World War II, the galvanic and faradic currents were used for the simplest and most common electrical tests. The faradic, a relatively rapid frequency current, excited nerve but not muscle tissue. If, for example, an apparent radial palsy responded to faradic current, the nerve was intact. This test gave valuable assistance in the diagnosis of functional paralysis. Response to the galvanic current was usually described by the physical therapist as brisk or vermicular. It was believed that this test

[4] Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume I. Washington: U.S. Government Printing Office, 1958, p. 13.

offered some indication as to the extent of nerve degeneration. The progressive sinusoidal current was used briefly for diagnostic purposes, but it was discontinued after the Golseth-Fizzell Constant Current Stimulator was introduced. This machine was known to most physical therapists simply as the EDX. It was developed by the National Research Council, scientists at Northwestern University, Evanston, Ill., and neurosurgeons at Percy Jones General Hospital. Since it was not commercially manufactured, it was reproduced in the occupational therapy department at that hospital and distributed to all neurosurgical centers. This well-calibrated stimulator produced a galvanic square wave which was used for testing the following: rheobase, chronaxy, strength-duration curve, tetanus ratio, and repetitive stimuli. Some form of heat, either the whirlpool bath or infrared irradiation, preceded the electrical testing. Because of the tremendous influx of patients with peripheral nerve disorders, physical therapists became extremely expert in the area of muscle testing and developed an awareness of the problems of all types of neurological dysfunction.

Physical therapy for patients with peripheral nerve injuries was used to increase circulation and nutrition to the part to decelerate the rate of atrophy and fibrosis, to keep joints mobile, and to reeducate weak muscles. The modalities most frequently used were the whirlpool bath, radiant heat, massage, therapeutic exercise, and electrical stimulation.

The whirlpool bath, unless contraindicated, was the modality of choice in treating patients with either upper or lower extremity peripheral nerve injuries. Infrared treatments were also used but had to be closely supervised to prevent burns in areas of anesthesia.

Mild massage was sometimes given to an extremity but not as routinely as in facial paralysis. Friction massage with lanolin for adherent scars was often taught to the patient to impress him with the need for self-help.

Passive exercise was used to maintain joint mobility; contracted tendons and fascia were stretched by the physical therapist. Active and resistive exercise of the uninvolved musculature was stressed. With the beginning of reinnervation of the muscles, a reeducational exercise program was started to assist the patient to recall voluntary function as it existed before injury. The physical therapists repeatedly stressed the responsibility of the patient for gaining good results. In addition to one or two clinic treatments a day, patients were instructed to perform exercises frequently throughout the day. The patients were also instructed in the use and care of their splints or braces.

In the 1940's there was a flood of literature on electrophysiology and research in electrical stimulation of animal and human subjects. Many attempts were made to prove or disprove the value of this modality in the treatment of nerve injury. Most clinicians believed it to be of value; consequently, it was prescribed almost routinely. Controversy, however, existed relative to the most effective form of electrical current to be used, the duration of the treatments, the most feasible method

of application, and the desired strength of the muscle contraction to be elicited. Usually, the treatment was stimulation of individual muscles with manually interrupted galvanic current regulated to the patient's pain and fatigue tolerance. Electrical stimulation was discontinued when voluntary contractions were noted.

Some patients suffered acute causalgia and were treated with a variety of modalities such as hot or cold whirlpool baths, paraffin baths, and sometimes even fever therapy. Only temporary relief was obtained by these methods.

Spinal cord injuries

The management of patients with spinal cord injuries in World War I and early World War II met with extremely discouraging results. After a series of conferences on the subject of transverse myelitis[5] and intensive study of the problem, a new program was developed and put into effect in neurosurgical centers which resulted in one of the most outstanding successes in military medicine.

The purpose of this program was as follows: "A defeatist attitude is intolerable in the care of patients with traumatic transverse myelitis. Rehabilitation can and must establish a wheel-chair life for the majority and walking with the aid of braces or crutches for many. Self-support at a sedentary occupation is the ultimate objective. Maximal rehabilitation is essential for the preservation of morale and human dignity." [6]

The team approach which was developed combined the skills of all hospital personnel concerned with the patient's care. This team included the neurosurgeon, orthopedic surgeon, urologist, plastic surgeon, internist, ward officer, physiatrist, nurse, physical therapist, occupational therapist, dietitian, physical reconditioning instructor, and hospital corpsman. When it was deemed appropriate, patients were included during the discussions of their progress.

The management problem was complex because of the many complications which existed with partial or complete transection of the spinal cord: paralysis, loss of bladder and bowel control, decubital ulcers, urinary tract infection, urinary calculi, rectal impaction, malnutrition, mental depression, osteoporosis, causalgia, and massive reflexes in those patients with spastic paralysis.

During the early phase of hospitalization, patients were treated on Stryker frames. They were turned every 2 hours, day after day; many times this was done by the physical therapist during the course of treatment. Radiant heat was administered to these patients primarily to

[5] Transverse myelitis conferences were held at Newton D. Baker General Hospital, Martinsburg, W. Va., 11–12 May and 20 June 1945; Hammond General Hospital, Modesto, Calif., 24–25 June 1945; Halloran General Hospital, Staten Island, N.Y., and Thomas M. England General Hospital, Atlantic City, N.J., 19–20 Oct. 1945. (Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume II. Washington: U.S. Government Printing Office, 1959, pp. 6, 127.)

[6] War Department Technical Bulletin (TB MED) 162, May 1945.

reduce muscle spasm. Massage was given to edematous extremities, and joint range of motion was maintained either passively by the physical therapist or actively by the patient as indicated. Since prognosis was difficult for these patients, the physical therapist had to be constantly on the alert for signs of returning function. Thorough muscle tests were performed routinely at 3-week intervals. For some patients, many months had to pass before a decision on irreversible change could be made.

The program was planned for progression from treatment in bed to wheelchair to mat exercises on the floor and ultimately to ambulation with braces and crutches, which was achieved by approximately 70 percent of the patients (fig. 63). The gait taught to most patients was the four point crutch-foot-crutch-foot pattern. This was more acceptable than the speedier swing-through gait which was taught as an alternate pattern for crossing streets and going places hurriedly.

At one center, Thomas M. England General Hospital, patients with decubiti received local ultraviolet treatments followed by applications of sugar and penicillin jelly. Other centers acclaimed a variety of other substances as valuable in treating decubital ulcers: these included castor oil, mineral oil, horse serum, zinc peroxide, gentian violet, tannic acid, petrolatum, and iodoform.

Instead of the few months' life expectance at complete bed rest predicted early in the war, many of these patients after an extremely arduous convalescence were actually driving their own hand-controlled automobiles and were achieving a measure of independence heretofore considered unrealistic for them.

After the cessation of hostilities, five Army general hospitals,[7] designated as centers for the specialized treatment of patients with spinal cord injuries, were turned over to the Veterans' Administration. The rehabilitation of approximately 1,500 of these paraplegic patients passed from Army jurisdiction to the Veterans' Administration.

Thoracic injuries

In 1943, five general hospitals were designated as centers for the treatment of thoracic injuries: Brooke General Hospital, Fort Sam Houston, Tex., Fitzsimons General Hospital, Denver, Colo., Hammond General Hospital, Modesto, Calif., Kennedy General Hospital, and Walter Reed General Hospital.[8] In August 1944, Baxter General Hospital, Spokane, Wash., was designated to replace the center at Hammond General Hospital. At Fitzsimons General Hospital, which was the largest such center, over 2,000 patients were treated in the thoracic surgery section during 1945. Of this number, 90 percent received physical therapy and many made rapid and even spectacular recoveries.

[7] Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume II. Washington: U.S. Government Printing Office, 1959, p. 14.
[8] Medical Department, United States Army. Surgery in World War II. Thoracic Surgery. Volume I. Washington: U.S. Government Printing Office, 1963, p. 171.

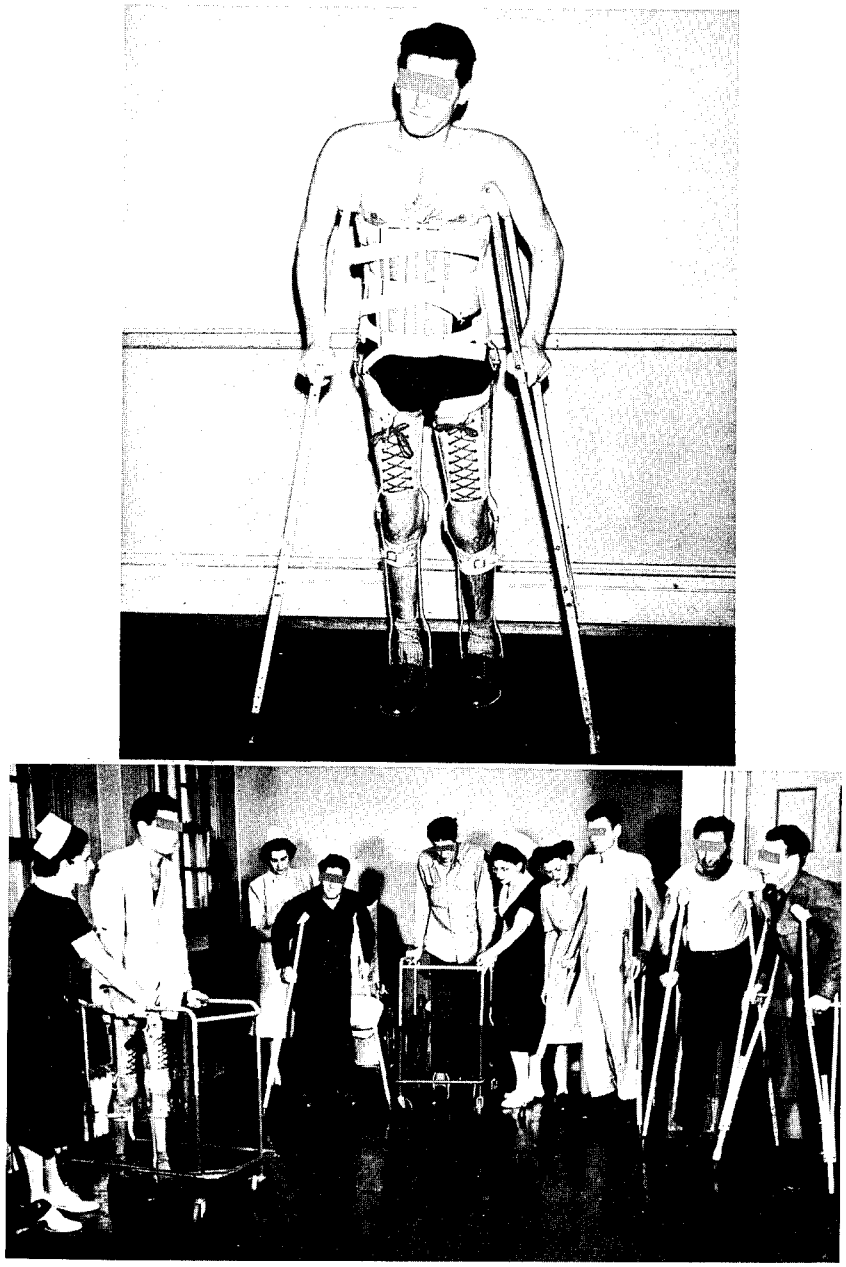


FIGURE 63—Rehabilitation of patients with spinal cord injuries. (Top) First attempt of patient with transverse cord lesion to walk with crutches. (Bottom) Group of patients learning how to become ambulant. Meeting as a group helps patients to adapt more readily to their difficulties.

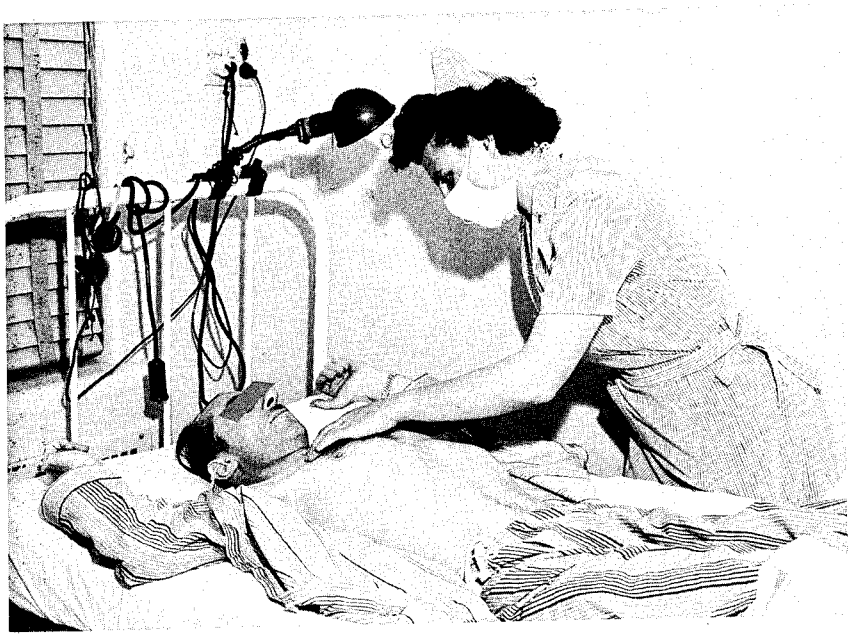


FIGURE 64—Patient receiving instruction for exercise prior to thoracic surgery. (U.S. Army photograph.)

Patients in these specialized treatment centers represented a wide variety of diagnoses, including intrathoracic injuries from bullets, shell fragments, and blast concussion; chronic infections, such as tuberculosis, empyema, abscess, bronchiectasis; and tumors, benign and malignant. Surgical procedures included pneumothorax, phrenicotomy, pneumolysis, aspiration and drainage, thoracotomy, rib resection, thoracoplasty, lobectomy, and unroofing operations. Whatever the cause of the disability, the effects were much the same—poor posture and poor respiration.

During World War I and before World War II, the classical picture presented by the thoracic surgery patient was that of a chest cripple. A marked scoliosis developed, the weakened shoulder on the affected side dropped and was limited in range of motion, excursion of the rib cage was practically nonexistent, and vital capacity was extremely low. Prolonged bed rest produced general muscular debility, loss of appetite and weight, and low morale.

With the concentration of thoracic specialists in these centers, the physical therapy and surgical services developed an intensive program to rehabilitate patients with thoracic injuries. The treatment program was divided into three phases: preoperative on the ward, early postoperative on the ward, and postoperative in the physical therapy clinic and the physical reconditioning gymnasium. Several days before the

patient was scheduled for surgery, the physical therapist contacted him on his ward to explain the results he could expect and what was expected of him following surgery (fig. 64). During these visits, the physical therapist demonstrated all the exercises, answered questions, and used conversation therapy to allay apprehension. The patient performed his exercises each day until he went to surgery.

In the absence of postoperative complications, the patient was ambulating for short periods the first day after surgery. Graduated breathing and posture exercises were also started. Breathing exercises, designed to help gain maximum ventilation rapidly, were of several types: diaphragmatic or abdominal, costal, and focal.[9] Deep coughing was stressed so that excessive fluids would be expectorated in a normal manner. Since this was pain producing, the physical therapist often assisted by splinting the patient's rib cage with a large bath towel held firmly wrapped around the chest.

Postural exercises were performed to insure correct body alinement (fig. 65). Shoulder range-of-motion exercises were included because of stiffness and pain in that arm resulting from positioning during surgery. As a general rule, patients were treated on the wards for 2 weeks following surgery. The exercise program was then continued in the physical therapy clinic at a much more strenuous level. Graduated heavy weight lifting was started as were workouts on the bicycle, the rowing machine, and the shoulder wheel. Patients with prolonged pain or discomfort were given infrared treatments or hot fomentations. In the winter months, general irradiation by the carbon arc lamp was given, and in the summer, exposure to sunlight was used for its tonic effect. This program eliminated the physical characteristics which had previously typified the chest cripple.

The physical therapy staff and students participated in a continuous educational program consisting of lectures, demonstrations, ward rounds, clinical conferences, observation of fluoroscopic examinations, and observation in surgery.

Vascular injuries

Many Army general hospitals admitted patients with vascular conditions; however, by the end of the war, only three hospitals[10] were designated as vascular surgery centers: Ashford General Hospital, White Sulphur Springs, W. Va.; DeWitt General Hospital, Auburn, Calif.; and Mayo General Hospital, Galesburg, Ill. Trenchfoot centers[11] were

[9] "The English believed that lungs can be selectively reexpanded by the focal exercises; others take little cognizance of them except as a part of the general exercise program. This is probably an unimportant point over which to argue, since general agreement exists as to the same necessity for concentration of exercise effort to these chest segments as there would be for an intensive exercise program for any other part long disused." Rose, D. L.: High Lights of Physical Medicine at Walter Reed General Hospital, 1941–1946. Arch. Phys. Med. 28: 99–108, February 1947.

[10] Medical Department, United States Army. Surgery in World War II. Vascular Surgery. Washington: U.S. Government Printing Office, 1955, pp. 2–3.

[11] Medical Department, United States Army. Cold Injury, Ground Type. Washington: U.S. Government Printing Office, 1958, p. 78.

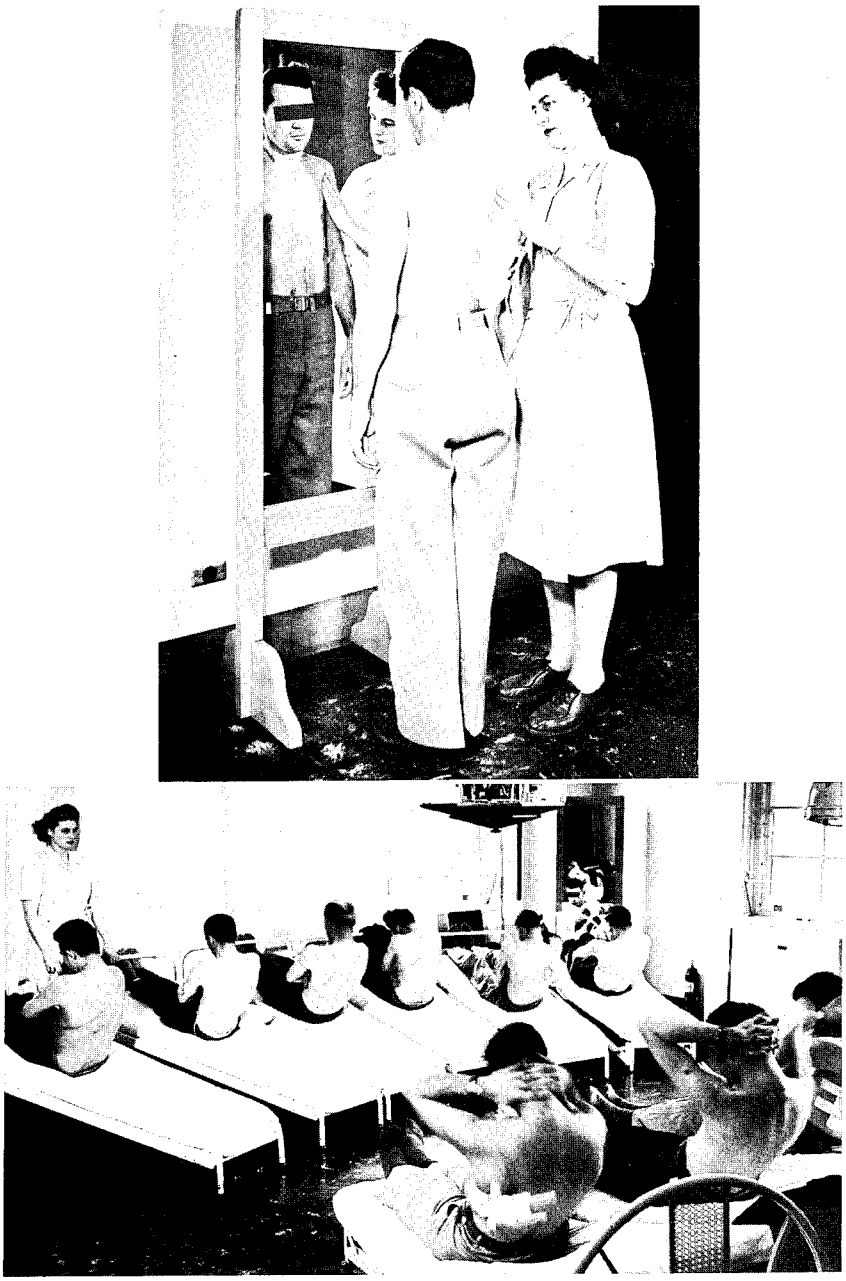


FIGURE 65—Postthoracic surgery rehabilitation. (Top) Instruction in body mechanics through use of posture mirror. (Bottom) Posture class performing abdominal exercises.

located at Brooke General Hospital; Letterman General Hospital, San Francisco, Calif.; Mayo General Hospital; Ashford General Hospital; U.S. Army General Hospital, Camp Butner, N.C.; and U.S. Army General Hospital, Camp Carson, Colo. Except for the excessive trenchfoot patient load, the vascular conditions treated were comparable to those treated in civilian hospitals, although there was a much greater number in the younger age group.

The physical therapy section at Ashford General Hospital reported that the total number of vascular conditions treated during the years 1943, 1944, and 1945 was 1,675.[12] The statistical breakdown of this number was as follows:

Acrocyanosis and vasospasm	113
Arteriosclerosis obliterans	18
Arteriovenous fistulas	93
Combined bone, soft tissue, and blood vessel injuries	931
Ligation of major stems	91
Raynaud's disease	5
Thromboangiitis obliterans	33
Thrombophlebitis	58
Trenchfoot and frostbite	297
Varicose ulcers	11
Volkmann's ischemic contracture	25

Despite the great wealth of clinical material in the field of vascular disorders, the specific results of physical therapy were difficult to evaluate. Since the task in wartime was to achieve maximum benefit in the shortest possible time, a combination of modalities was often prescribed, thus ruling out the study of one isolated treatment procedure. Also, many of these patients had only a short period of hospitalization in the Zone of Interior and were discharged from service with no subsequent followup by Army medical officers.

Cold injuries cut a tremendous swath in our fighting strength around the world in campaigns from Attu to the Bulge. Trenchfoot, immersion foot, and frostbite resulted from prolonged exposure to cold and dampness. The soldier pinned to his foxhole by enemy fire often found his cold, wet feet to be swollen, numb, and discolored. The soldier adrift on a sea-drenched liferaft had much the same symptoms. All experienced thermal reactions comparable to those of patients with severe burns. Their feet were often blistered, gangrenous, and lacking normal circulation and nerve supply.

During the acute phase overseas, these men were placed on bed rest with feet elevated at room temperature or chilled with ice packs. By the time they were evacuated to the Zone of Interior, their condition was generally subacute or chronic and they were ready for physical therapy and ambulation. The objectives of physical therapy were to increase circulation to the involved parts, decrease pain and edema,

[12] Report, Capt. Carl Levenson, MC, Chief, Physical Therapy Section, Ashford General Hospital, White Sulphur Springs, W. Va., to Office of The Surgeon General, 12 Dec. 1945, subject: Addition to Report on Physical Therapy in Vascular and Neurosurgical Conditions.

increase joint range of motion and muscle strength, and encourage the patient to walk normally.

A variety of modalities were available to obtain these objectives (fig. 66). Whirlpool baths were of value to these patients, as the temperature and agitation of the water could easily be regulated to accommodate the condition. Diathermy to the lumbar area was prescribed for the reflex circulatory changes it produced in the extremities. Mecholyl (acetyl-B-methylcholine) iontophoresis and suction pressure apparatus were also used to increase vasodilatation. Massage and passive exercises were administered by the physical therapists, and patients were instructed in performing Buerger's exercises, and were advised to stop smoking, stop worrying, and to take long walks. It was believed that these patients would present no postwar problem, although it was expected that many would continue to experience discomfort upon exposure to cold weather. Physical therapy modalities used in the treatment of patients with other vascular disorders were similar to those administered for cold injuries. The success of these measures rested on early diagnosis, early treatment, and the severity of the disorder.

Although patients with cold injuries did not present any great medical or surgical problem in the Zone of Interior, they did occupy a tremendous number of hospital beds. Numerically, they were an overwhelming drain on hospital facilities. The following quote is from a chapter written 15 years after the end of World War II by a physical therapist who was then stationed at Brooke General Hospital, a trenchfoot center. With vivid recall she stated, "I can remember classifying patients [with trenchfoot] who had no open lesions into a group that shared the Hubbard tank. We placed two large boards across the tank that would serve as benches and every 20 minutes 10 patients would share a whirlpool treatment."[13]

Other programs

There were many specialized treatment centers in the Zone of Interior; the professional activities of physical therapists in all of them cannot be described in detail. Some programs made unique or outstanding contributions. Army and Navy General Hospital, Hot Springs, Ark., offered spa therapy for patients with arthritis and poliomyelitis. It was the only center designated for the treatment of poliomyelitis. Both the main hospital and Eastman Annex (formerly a resort hotel) provided thermal mineral baths. Included was a hydrotherapeutic pool equipped with exercise tables. Most of the poliomyelitis patients were in the subacute or convalescent phase, having been transferred to Army and Navy General Hospital from points all over the world. Reports from this hospital describe the treatment as a modified Kenny method

[13] Personal correspondence by the author with Georgiana Windham Johnson, formerly 1st Lieutenant, MDPT, AUS.



FIGURE 66—Treatment of vascular conditions. (Top) Mecholyl iontophoresis. Asbestos paper saturated with .5 percent mecholyl wrapped around both feet and connected to positive pole of galvanic apparatus. Right arm in water bath which is connected to negative pole. (Bottom) Group of patients receiving whirlpool treatment. Patient in right foreground receiving paraffin bath treatment for ischemic contracture.

which included moist hot packs, baths, and underwater and reeducational exercise. Prevention of contractures and fatigue was emphasized. The physical therapists worked in close harmony with the orthopedic surgeons. Braces, splints, tendon transplants, and joint fusions were provided when indicated.[14]

Army and Navy General Hospital was designated the Army arthritis center in December 1943. Approximately 65 percent of the arthritic patients admitted were diagnosed as having either rheumatoid arthritis, fibrositis, or osteoarthritis. These patients were considered candidates for physical therapy procedures. Since most types of arthritis were progressive and of unknown etiology, no cure could be offered. Relief of pain and maintenance of normal joint range of motion were the treatment goals. Even though gout was primarily a dietetic problem and psychogenic arthritis a psychiatric problem, all received some form of hydrotherapy. Educational programs, including lectures and films, were provided for all patients. Some of the subjects presented were: "The Meaning of Rheumatism and Arthritis," "Fads, Fancies and False Concepts of Rheumatism," and "Home Physical Therapy."

At Gardiner General Hospital, Chicago, Ill., one of the orthopedic surgery centers, Capt. Thomas L. DeLorme, MC, developed an intensive exercise program in an attempt to shorten the hospitalization period for orthopedic patients. He had observed that, in the development of powerful muscles, amateur and professional weight lifters exercised with extremely heavy weight loads. Theorizing that heavy resistance with a low number of repetitions would produce muscular hypertrophy and power, he incorporated this concept in his exercise program. This was a complete reversal of the belief that low resistance with many repetitions (for example, bicycle, wall pulleys) was the treatment of choice for weak, atrophied muscles. He believed that the repetitive low resistance exercise produced endurance and should be used only after power was attained. The results of his study were so impressive that the DeLorme progressive resistance exercise program was immediately incorporated in physical therapy clinics throughout the Army (fig. 67).

Equipment

Physical therapy clinics in the Zone of Interior were normally adequately equipped with the standard items listed in the Army Service Forces Supply Catalog.[15] Early in the war, many items could not be immediately obtained from the manufacturers. This situation was gradually eliminated as production capability increased. In the early forties, there seemed to have been undue enthusiasm for the electric

[14] A report on the progress made by poliomyelitis patients treated at Army and Navy General Hospital is contained in the following article: Torp, M. J.: Poliomyelitis: Functional Progress Report of Fifty Cases Approximately Five Years Post-Onset. Phys. Therapy Rev. 33: 351–358, July 1953.

[15] Army Service Forces Supply Catalog 10–2, May 1945.

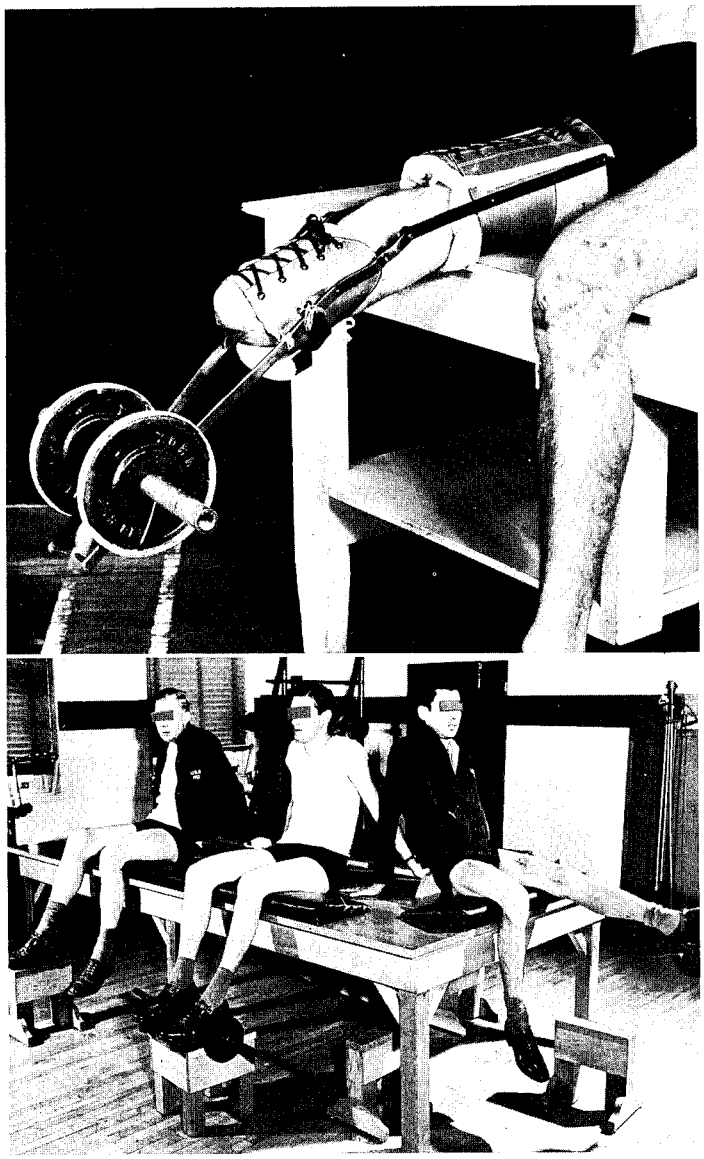


FIGURE 67—DeLorme exercise program. (Top) Amputee exercising quadriceps. (U.S. Army photograph.) (Bottom) Group of patients exercising lower extremities. (Courtesy of National Library of Medicine.)

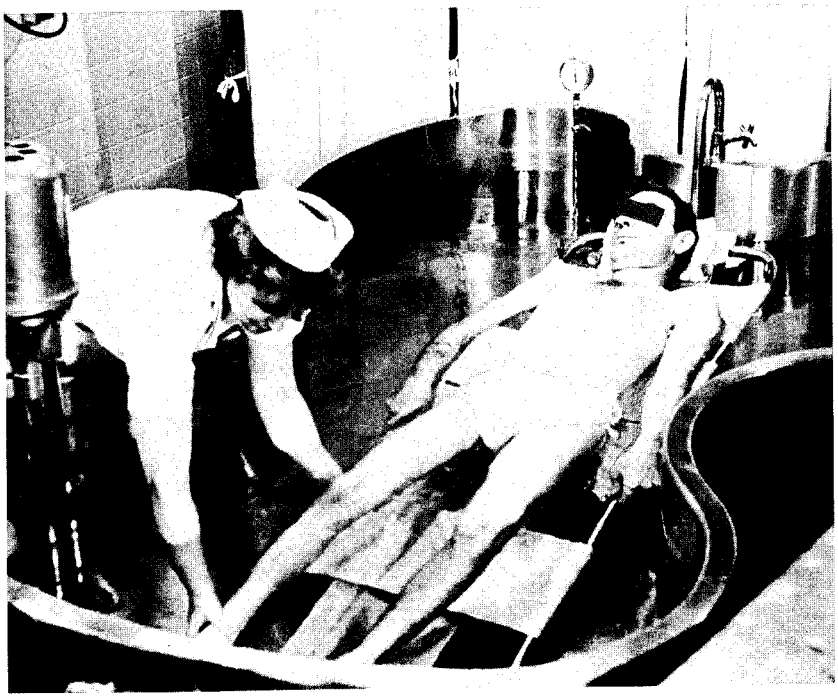


FIGURE 68—Physical therapist assisting a patient in exercise in Hubbard tank.

cabinet bath. Even if space were available for this large piece of equipment, its use was seldom prescribed, and eventually this item was deleted from the supply catalog.

From time to time, new and additional items of equipment were tested in Army hospitals, and if acceptable, such items were standardized and listed in the catalog. Among such items tested were an invalid walker with attachments; head and shoulder slings; various pieces of exercise equipment, plinths, therapeutic lamps, Hubbard tank (fig. 68); and a galvanic stimulator. With the widespread use of physical therapy equipment, an unusual opportunity was afforded to evaluate such items. If it was found that a piece of equipment did not meet the specifications or did not hold up under heavy usage, it was recommended the item be deleted from the supply table.

COMMUNICATIONS ZONE [16]

Types of Hospitals

Hospitals in oversea theaters of operations were set up in any available building which afforded adequate space, such as schools, warehouses,

[16] Unless otherwise indicated, the source of information utilized in the preparation of this section is from accounts of physical therapy activities extracted from hospital annual reports and narrative reports of chief physical therapists.

apartment houses, hotels, military barracks, museums, churches, and even converted stables. In addition, some were in newly constructed cantonment-type buildings, some were in civilian and military hospitals requisitioned by the U.S. Army, and some were in tents or nissen huts. In the tropical areas of the Pacific and Asia, native construction materials such as bamboo and grass were utilized and many thatch-roofed hospitals operated as efficiently as did those of conventional design (fig. 69).

Operational Problems

The fundamental aims of physical therapy programs remained essentially the same in oversea units as in permanent installations in the United States. In a hospital overseas, however, the modalities were often limited and treatments frequently reduced to the barest essentials. Location of hospitals (front or rear echelon) and military campaigns determined the types of cases and the workload. With chameleon rapidity, some units changed from station to general hospitals and from evacuation hospitals to holding units. Reports show that sometimes the hospital bed occupancy dropped from 800 to 0 in 2 days, or increased from 800 to 1,600 in 12 days.

Since oversea physical therapy clinics were as varied in space and arrangement as the hospitals of which they were a part, no general descriptive statements can be made. Those operating in temporary cantonment-type buildings possessed no characteristics which distinguished them from hospitals of a similar type in the Zone of Interior. On the other hand, descriptions of some of the other clinics point out the problems faced by physical therapists in a wide variety of situations. Though scattered from Ireland to India, they encountered many identical problems. The degree of ingenuity demanded of a physical therapist in setting up an oversea clinic depended largely on the type of housing to which the unit was assigned.

Some of the oversea hospitals were housed in permanent buildings which had not originally been designed for hospital use. For example, in 1944, in the Mediterranean (formerly North African) Theater of Operations, U.S. Army, a former Italian Police School which had been extensively damaged by shellfire was chosen as the site of a station hospital. The physical therapists were dismayed to find that the space allotted for their clinic was littered with debris. Much digging uncovered a beautiful red and black tile floor in excellent condition. Much scrubbing revealed beautiful wall paintings which added to the colorful and even festive appearance of the clinic.

The report of a physical therapist in a general hospital in France, early in 1945, included a description of a physical therapy clinic operated under tentage. Two ward tents pitched side by side on a concrete base provided a large treatment room and smaller rooms for the whirlpool baths and gymnasium. Four wooden arches raised the sloping tent walls

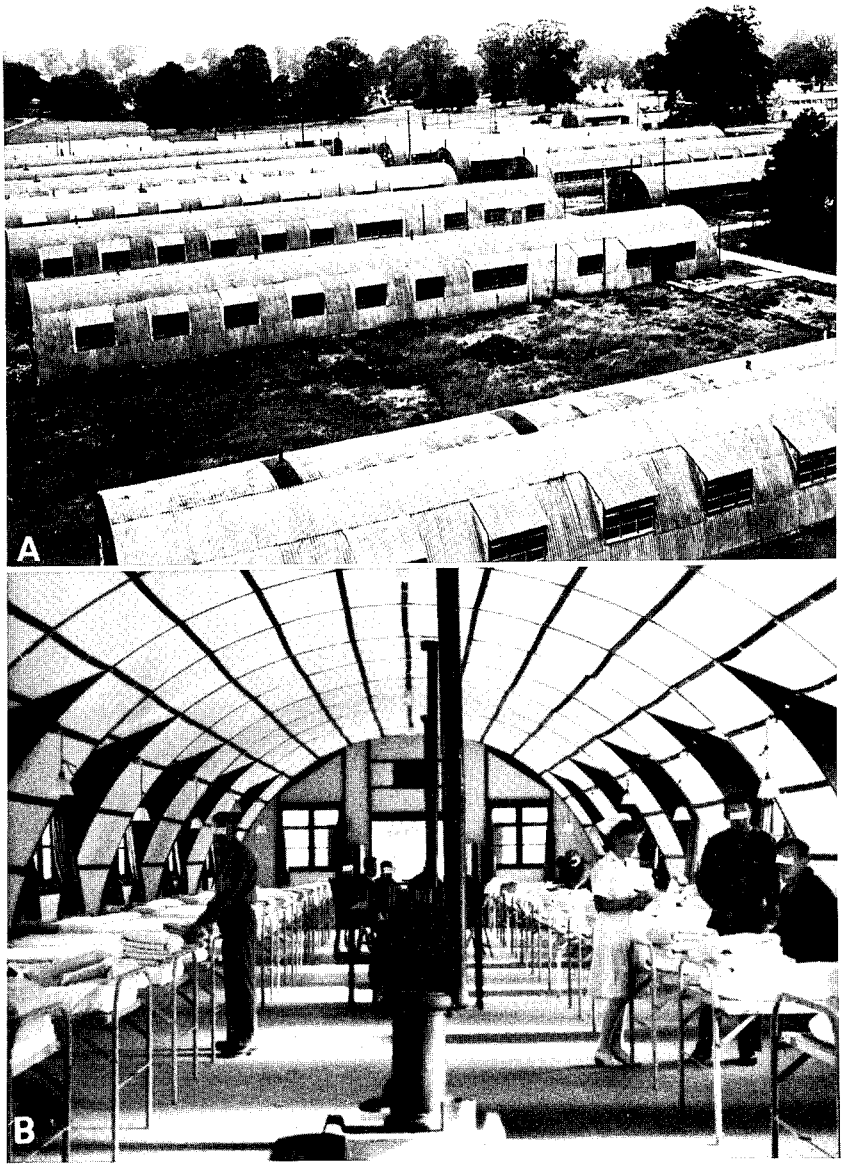


FIGURE 69—Oversea physical therapy facilities, World War II. A. Nissen hut hospital, England. B. Hospital ward in nissen hut, England.

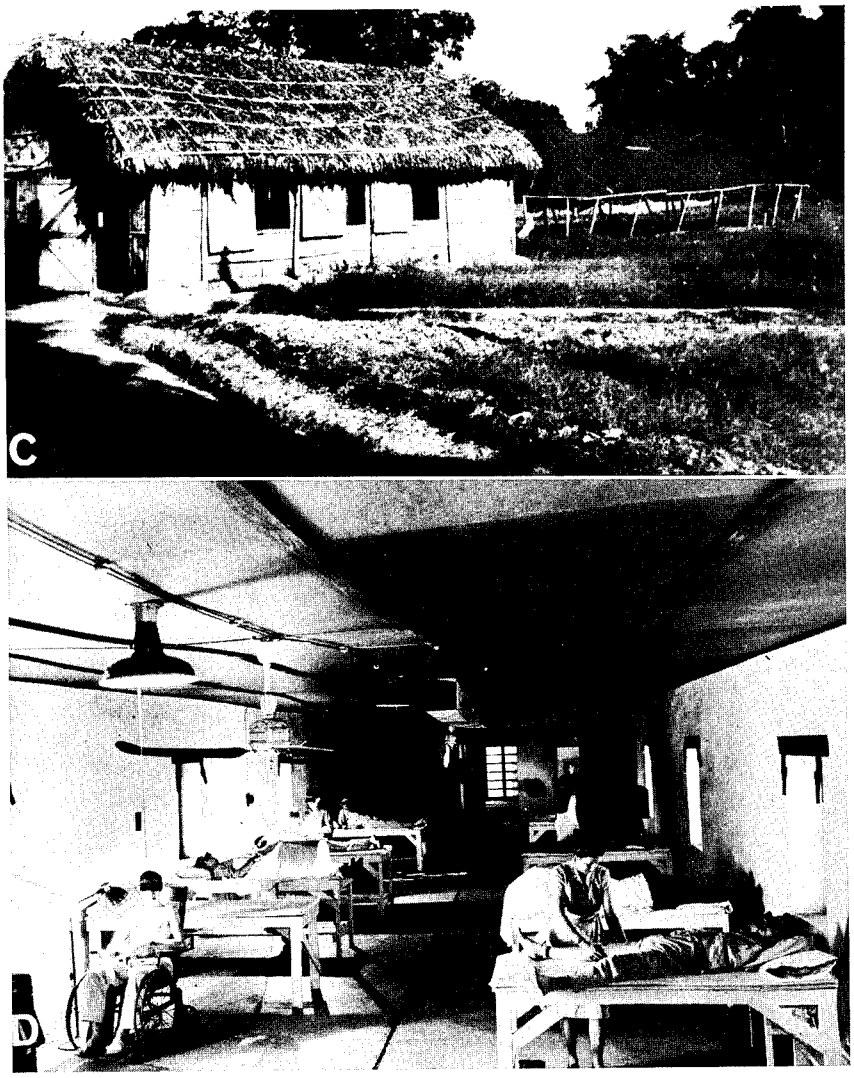


FIGURE 69—Continued. C. Physical therapy building, India. D. Physical therapy clinic, Iran.

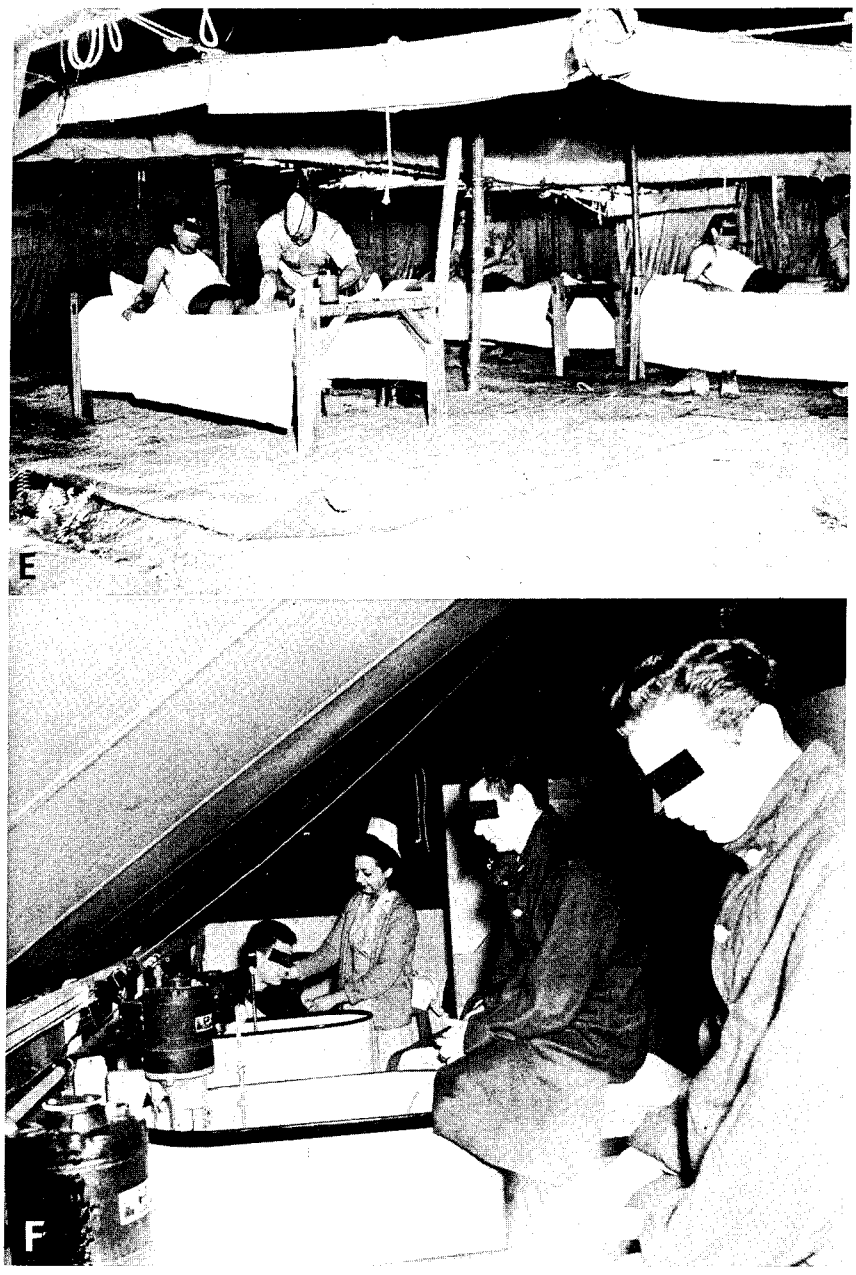


FIGURE 69—Continued. E. Physical therapy tent, India (false ceiling added to decrease heat). F. Physical therapy clinic in tent hospital, France.

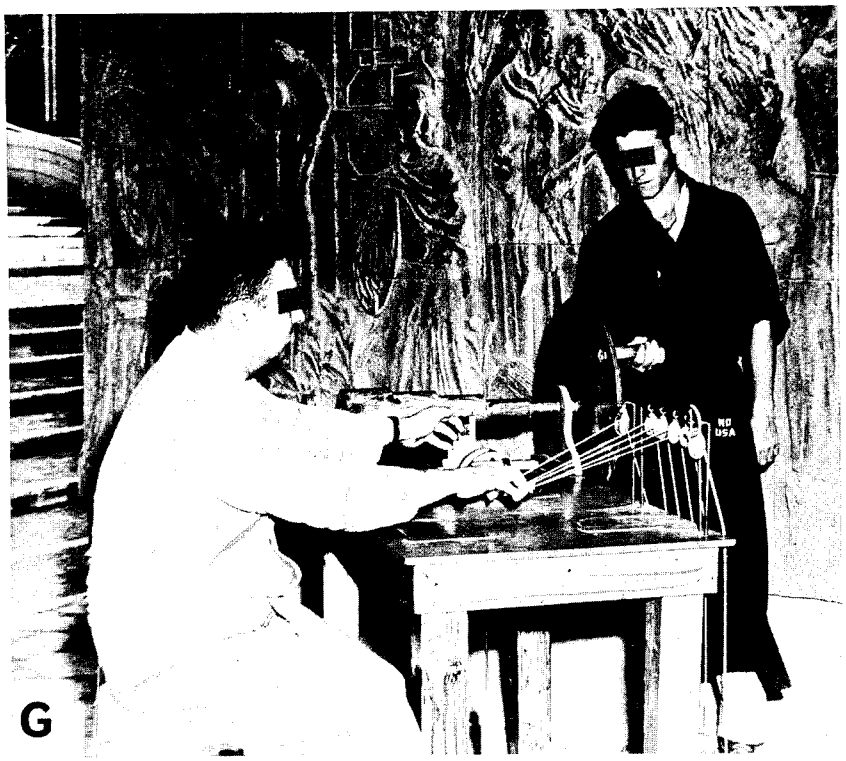


FIGURE 69—Continued. G. Physical therapy, Mediterranean Theater of Operations.

to provide adequate overhead space. The sides of the tent were winterized and heat was provided by standard Army stoves.

The physical therapist assigned to the 27th Station Hospital, New Caledonia, opened her clinic in March 1943 in a pyramidal tent, where no running water was available. As the number of patients grew, the clinic moved to a ward tent. One year later, the tent was replaced by a wooden building with modern equipment.

At the 8th General Hospital, New Caledonia, the physical therapy clinic at first was located in the main clinic building shared with the dental and eye, ear, nose, and throat clinics. Because of the lack of space, two of the three physical therapists confined their work to the wards. Bakers or lamps had to be carried to each ward where there were only two wall plugs, located at opposite ends of the ward. No extension cords were available. In addition, the beds were not of a suitable height on which to comfortably administer massage. It was 10 months after the 20th General Hospital opened in Ledo, India, before an adequate physical therapy clinic was constructed of concrete with a tin roof overlayed with leaf thatching. The staff, meanwhile, plodded through muddy paths from one ward to another to administer massage and moist heat.

While keeping warm posed a problem in some of the hospitals in the European Theater of Operations, U.S. Army, and in the Mediterranean theater, the reverse was true in some of the areas in the Pacific. A physical therapist on duty in a hospital in Saipan reported that the regulation of the temperature inside the tent which housed the physical therapy clinic posed a serious problem in that hot, humid climate. With the sun beating down all day on the black-topped tent, and with heat generated by bakers and infrared lamps, it was often impossible to remain in the tent for any length of time. This problem was solved by making a false ceiling of bed sheets which measurably decreased the temperature inside the tent.

The 7th Station Hospital was the first unit in the Mediterranean theater with physical therapy facilities. Two weeks after the landing of U.S. and British troops, on 7 November 1942, the hospital was established in Oran, Algeria, in buildings which were part of a French civil hospital area. The sections for officer and enlisted patients were in different locations in the city which necessitated more physical therapy personnel than would have been necessary for a single centralized unit.

Frequently, convoys of battle casualties were received in the hospital only a short time after the arrival of medical service personnel and equipment. In such situations, all hospital personnel,regardless of their official designation, expended every effort to prepare the hospital for the immediate reception and care of these patients. Since the services of carpenters, plumbers, and electricians were required in the hurried preparation of operating rooms, kitchens, and wards, the preparation of the physical therapy clinic was understandably delayed. Physical therapists were not idle, however, and served wherever they were needed, assisting in the preparation of dressings, the application of plaster casts, and the supervision of food trays for ward patients.

When physical therapy clinics were housed in permanent-hospital-type buildings, no major problems were encountered. When the hospitals occupied buildings not originally designed for hospital use, it was necessary to accomplish extensive alterations and repairs. In such cases, the physical therapist usually made the plans for necessary changes and executed them with the assistance of enlisted personnel assigned to the clinic. In fact, many physical therapists temporarily assumed the role of painter, plumber, carpenter, or electrician. Since equipment needed for repair and construction was always in short supply, the number of hammers, saws, pliers, nails, and paint brushes were never sufficient to meet the demand. Surprisingly, some physical therapists had the foresight to include complete tool kits in their personal luggage.

Treatment tables and plinths were immediate requirements in all clinics. If the physical therapist was fortunate enough to acquire the necessary lumber for such construction, the plinths were jealously guarded. In one hospital, the physical therapist reported that the plinths had been dismantled, packed, moved, and reassembled four times. When lumber was not available for the construction of plinths, mess

tables were sometimes pressed into service and pads were make by placing folded blankets in a mattress cover. Hospital beds with boards placed under the mattresses were also used.

In spite of the fact that furniture was difficult to obtain, physical therapy clinics were usually cheerful and attractive. Physical therapists made an effort to brighten their clinics by placing small plants and flowers around, and by decorating otherwise drab and uninteresting linen hampers, receptacles, and other pieces of furniture. By these added touches, they hoped to improve the morale and attitude of the patient.

The type and availability of electrical current was always a matter of prime consideration. In several oversea areas, it was necessary to use transformers to rectify the 220-volt local supply in order to use the standard 110-volt electrical equipment manufactured in the United States. Because of extensive damage to power plants and lines during the war, the electrical current in some areas was so undependable as to be almost useless. In these cases, electrical power was supplied by hospital generators. Often the hospital power plant could not generate electricity sufficient for all sections to use their equipment simultaneously, and a schedule had to be worked out.

Another problem commonly encountered was the lack of an adequate supply of hot water for operating the whirlpool baths. It was a rare instance when the available supply of hot water was constant and adequate. In some hospitals, water was heated on field ranges or on improvised stoves (fig. 70) and carried to the physical therapy clinic in large containers.

Water supply in many areas was inadequate. The 137th Station Hospital on Guadalcanal reported this was a constant problem. Many, many times the hospital was without water except what could be hauled in one 250-gallon tractor. In some units, water pressure was often so low that it took hours to fill the whirlpool tubs.

One physical therapist who worked in a tent clinic on Saipan wrote: "With a despairingly inadequate water supply, policing a clinic in that part of the world was indeed a puzzle—not that it was expected to sparkle or shine (only the sun shone there!), but some semblance of cleanliness was hoped for. The floor had either a covering of dust which had blown in or one of mud which had been tracked in. Large slimy snails, which crawled in at night leaving grayish white trails in every conceivable place, were a constant source of annoyance." [17]

In the preparation of the clinic and the execution of the many necessary improvisations, the physical therapist received invaluable assistance from the enlisted personnel assigned to the clinic. The cooperation, ingenuity, and inventive genius of these men were often referred to in the hospital reports. Physical therapists and enlisted personnel alike were proud of their achievements.

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[17] Report, 1st Lt. Barbara M. Robertson, MDPT [February 1946], Physical Therapy in Saipan, p. 8.



FIGURE 70—Improvised water heater, China-Burma-India. (Courtesy of National Library of Medicine.)

Equipment

The equipment in physical therapy clinics in oversea hospitals consisted of three types: standard apparatus, which was shipped from the United States; equipment procured locally; and that which was improvised. Because of changing shipment priority and availability, the supply list for oversea physical therapy clinics was revised several times during the war.

Distribution of these items was not always made in accordance with bed capacities, and frequently, both small station and large general hospitals received the same number of items. On the whole, the number of issued items was considered adequate and consistent with local conditions. A report from U.S. Forces, India-Burma Theater, states that the "results of the program validated the War Department policy of providing hospitals with but the major items of physical therapy equipment, since American ingenuity could be counted on to complete the paraphernalia required for the program." [18] The ingenious American physical therapists and enlisted personnel improvised equipment (fig. 71). They used bamboo, scrap lumber, salvage pipe, and salvage parts from aircraft and vehicles. Many of the weights for resistance exercises were made of tin cans filled with cement, rocks, or sand. Tools and specialized labor were frequently provided by the U.S. Army Ordnance Department and the U.S. Army Signal Corps.

No gymnasium equipment was shipped overseas nor were diathermy machines because the current interfered with radio reception and transmission. A few hospitals in Australia and Hawaii used locally acquired long- and short-wave diathermy apparatus. The Signal Corps recommended that these units be used only in electrically shielded rooms.

Whirlpool baths were generally available in all theaters. After inspecting equipment in the Mediterranean theater, one medical officer reported that he saw no adequate reason for transporting this bulky equipment overseas. He recommended that ordinary bath tubs, large basins, or galvanized iron cans be filled with hot water and used instead.[19]

Posture mirrors proved very difficult to acquire. At one clinic, numerous small mirrors were diligently pieced together. A physical therapist in New Caledonia, "after much finagling," procured a half-length sheet of metal with a polished reflecting surface.[20] It was placed on an easel so that it could be tipped down for gait instruction and up for reeducation exercises in facial palsy. She also devised an ankle exerciser made from jeep cushion springs supplied by the motor pool.

A most unusual heat modality was that used by the physical therapist interned at Santo Tomas Internment Camp, Manila, Philippine Islands. "In back conditions, the iron was usually more effective. The part to be treated was covered with a sheet and two layers of blanket. The process was similar to ironing, except that it was necessary to withhold some of the weight of the iron.[21]

At the 31st Station Hospital, New Caledonia, an ingenious quadriceps exerciser was made by building tracks on which a chair mounted on wheels could be pushed back and forth. Resistance was provided by

[18] Stone, James H.: History of the Army Nurses, Physical Therapists, and Hospital Dietitians in India and Burma, October 1945, p. 74. [Official record.]

[19] Essential Technical Medical Data, Mediterranean Theater of Operations, U.S. Army, for March 1945, dated 29 Apr. 1945.

[20] Lindberg, Geraldine D.: History of the Medical Department Dietitians and Physical Therapists, 29th General Hospital, Experiences of a Physical Therapist in New Caledonia and Korea, p. 3. [Official record.]

[21] P.T. Department, The Army Nurse 2: 10–11, June 1945.

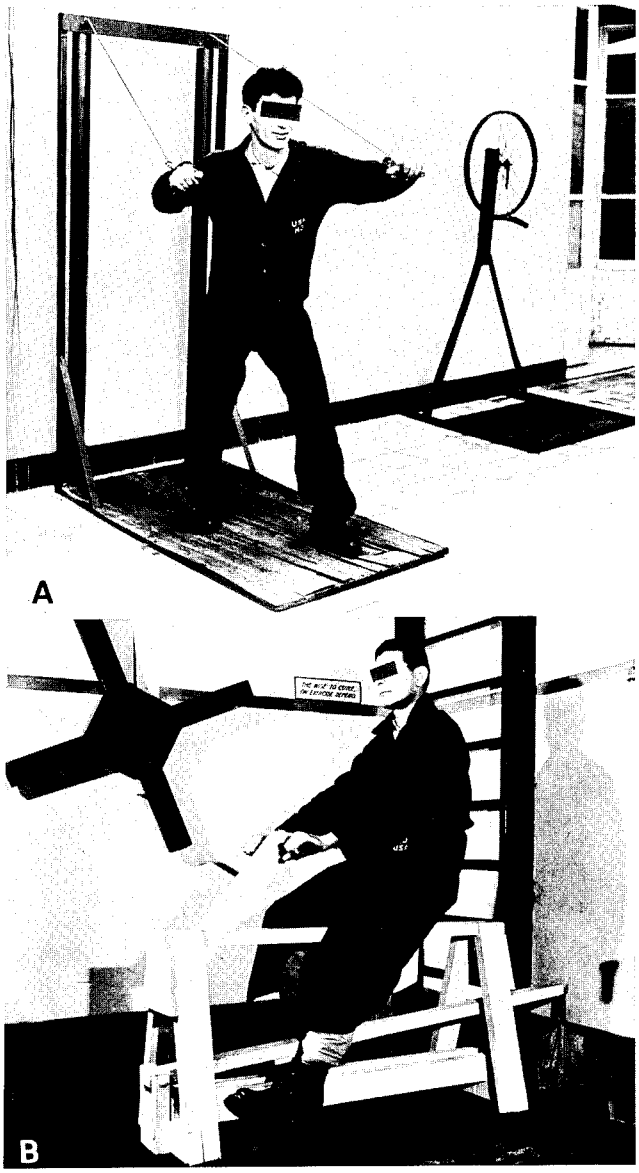


FIGURE 71—Improvised physical therapy apparatus, World War II. A. Arm and shoulder pulleys arrangement. Weights ride inside the pieces of salvaged pipes. At right, old bicycle wheel used as a shoulder wheel, Mediterranean Theater of Operations. B. Shoulder wheel and bicycle saw made of wood, Mediterranean theater.

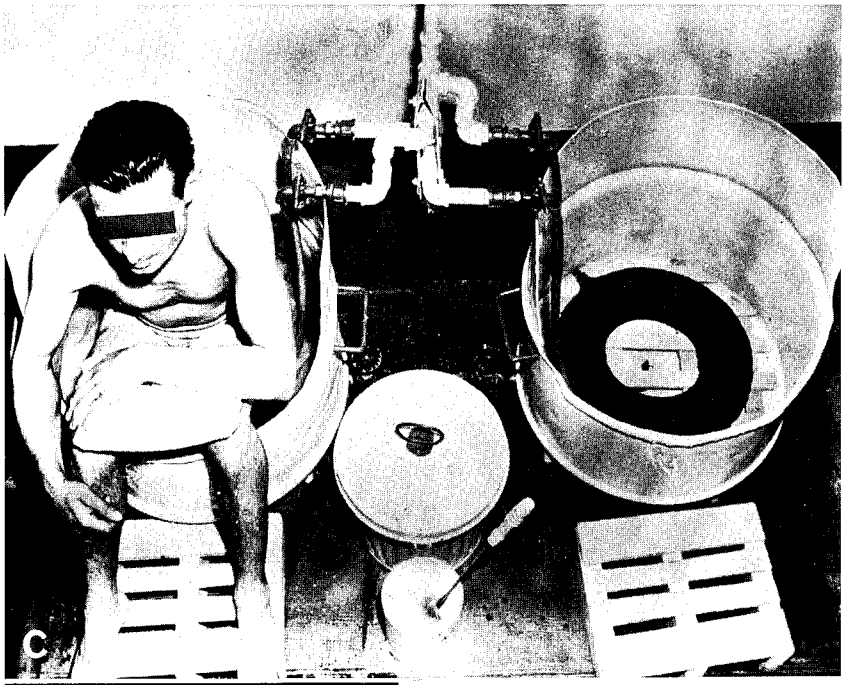




FIGURE 71—Continued. C. Sitz bath made from oil drums. (Courtesy of National Library of Medicine.) D. Whirlpool tub made from 5-gallon oil drum in which was soldered an inlet pipe at a 45° angle as a source of incoming water. A hole at the bottom served as the drain outlet.

weights attached to a pulley system. The patient sitting in the chair extended his legs by pushing back against the weights. The 21st Station Hospital supplemented their exercise apparatus with weights strung on two pairs of sturdy pulleys obtained from one of the scuttled ships in the harbor of Massaua, Eritrea.

In the early days of the Italian campaign, two physical therapists were told on 24 hours' notice to set up a clinic. No standard equipment was available. They succeeded in obtaining 2 examining tables, 6 blankets, 25 bath towels, and 6 buckets. Hot water was heated on a pot-bellied stove. Fifteen candles were melted in two tin cans and the paraffin was



FIGURE 71—Continued. E. Baker. F. Rowing machine and shoulder wheel, India.

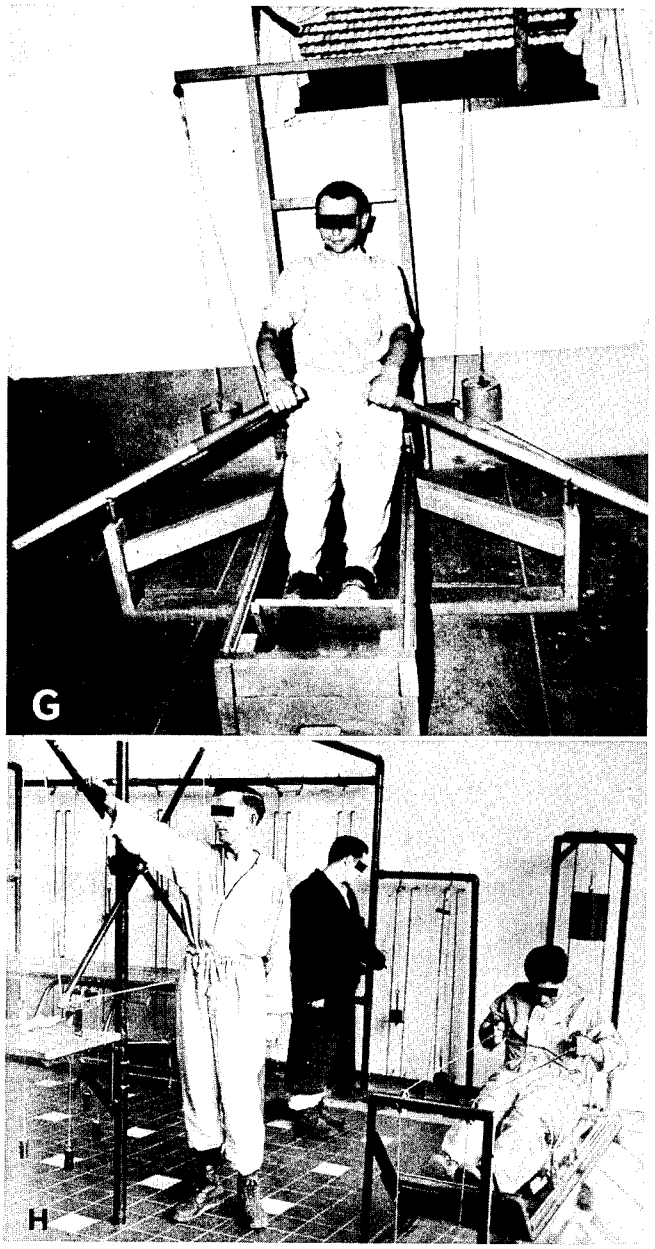


FIGURE 71—Continued. G. Rowing machine, France. (Note weights made of cans filled with cement.) H. Rowing machine, shoulder wheel, and wall pulleys, the latter two made from salvaged pipe.

applied by a piece of gauze wrapped around the end of a stick. Histologic paraffin was used in some instances. In Khorramshahr, Iran, paraffin was secured from a nearby oil refinery.

Climate

Women accustomed to the temperate climate in the Zone of Interior learned to adjust to the tropical climate. Adjustment to this environment and professional efficiency were found to be related. A survey made in the India-Burma Theater, in 1945, revealed that a tropical environment did not necessarily result in overwhelming physical and mental devastation in women.[22]

Climatic conditions definitely affected the administration of treatment. High environmental temperature and humidity had to be considered in the type, degree, and frequency of treatments. To avoid excessive fluid and electrolyte loss, precautions had to be used in administering heat, massage, and in the degree of exercise given.

A physical therapist assigned to the 31st Station Hospital, a tent hospital, reported: "Technique in treatment was changed a bit because of local conditions. We had been taught never to remove our hands from a patient during massage, but the author of that idea must never have worked in a mosquito-ridden swamp land. We learned to massage with one hand and swat with the other any mosquito threatening to lunch on either patient or operator." [23]

Workday

Often it was necessary to operate oversea clinics 9 or 10 hours a day for 7 days a week. In spite of the long days, much work such as record-keeping and muscle tests was done in the evenings. Most clinics were understaffed and patient loads were heavy. Welcomed assistants were nurses, enlisted personnel, civilian nationals, convalescent patients, and even prisoners of war. As an outgrowth of the personnel shortage, an economical system of grouping patients evolved; for example, two or three to a single heat lamp or whirlpool bath. Group exercise was a common practice.

Physical therapists in the Communications Zone treated not only U.S. military personnel, but also allied military personnel, prisoners of war, and civilians in areas without adequate medical facilities. The language barrier was a deterrent in some physical therapy programs. Since administrative and professional procedures in the various theaters and areas followed much the same pattern, only the physical therapy programs in the European theater will be described.

European Theater of Operations

Normally, hospital personnel were transported to the European theater as integral units by water transportation. This gave opportunity

[22] See footnote 18, p. 267.
[23] See footnote 20, p. 267.

for members of the hospital unit to become acquainted with one another personally as well as professionally. Later, under combat conditions, this relationship was most important in the successful development of many timesaving devices and procedures. In the European theater, as in other theaters and areas, the medical officer in charge of the physical therapy clinic was usually designated from within the surgical service and most frequently from the orthopedic section. A mutual understanding between the medical officer in charge of physical therapy and the physical therapists concerning the most effective treatment procedures under the circumstances at hand lessened demands upon the medical officer and released him from clinic activities during periods of increased military operations at which time the primary responsibility of all medical officers was the emergency care of the wounded. The physical therapists functioned as liaison officers between the medical officer in charge of physical therapy and the ward officers, some of whom had had only limited knowledge of physical therapy. As in other theaters and areas, enlisted personnel trained to assist in administering physical therapy were an invaluable asset in the treatment program.

With expanding patient loads, the need for specific physical therapy measures was repeatedly reevaluated. The application of massage and various forms of heat succumbed oftentimes to emphasis on exercise. On occasion, exercise consisted of an instruction period only, given before transfer of the patient to another hospital in the chain of evacuation. The value of group exercises was learned early in the European theater. As workloads assumed staggering proportions, classes were formed for exercise instruction of patients with similar disabilities.[24] It was soon realized that a powerful psychological stimulus for recovery was at work in patients engaged cooperatively and competitively in a treatment program for their common conditions. The experiences of physical therapists at the 5th General Hospital shortly after arriving in Ireland, in May 1942, served as a springboard from which to convert an overwhelming individual patient load into a dynamic program of group exercise.[25]

Concurrently, the need was observed for a general exercise program designed to maintain total body health to the extent possible while the specific injury was undergoing treatment. At the 5th General Hospital, where the first program of this type was developed, aspects of the British Army rehabilitation plan were adopted. Late in 1942, Miss (later 1st Lt.) Edna Blumenthal, with the encouragement and assistance of the medical staff, introduced general exercise classes for patients in all stages of recovery, some of whom progressed to complete convalescence. (Later in England, patients were transferred to other centers for final convalescence.) In the development of this program, she was assisted by British Army medical officers who contributed generously of their time,

[24] Group exercises for patients were first used in World War I. See chapter III, p. 43.

[25] Lawrence, Mary: History of Physical Therapy in the European Theater of Operations, U.S. Army, World War II, p. 42. [Official record.]

knowledge, and experience. This general exercise program was later incorporated into the total rehabilitation program. (See Appendix H, p. 607.)

At times, when both general and station hospitals assumed the functions of evacuation units, physical therapists performed tests to evaluate the extent of nerve injuries, instructed patients in positioning and exercise, and assisted in the application of casts and splints.

The support of British physical therapists extended individually and through The Chartered Society of Physiotherapy was a source of inspiration and assistance to U.S. Army physical therapists in England. Through the efforts of Miss Olive Sands, a member of that society, arrangements were made for the first meeting with Army physical therapists stationed in England. This meeting was held in the headquarters of that organization in London. Here discussions and demonstrations were focused on postural drainage and the physical therapy management of patients with asthma and postsurgical chest conditions.

Later, speaking of this meeting, Miss Sands said, "Surely the need for a world confederation became apparent at these meetings and there is little doubt that the seed which grew into the World Confederation of Physical Therapy was planted at this time." [26]

The advent of drugs such as the sulfonamides and penicillin, new surgical procedures,[27] and the desirability of early mobilization brought mounting opportunities for the use of physical therapy in the preservation and restoration of body function. With the new methods of wound closure and long bone immobilization, the value of early physical therapy was dramatically demonstrated during World War II.

Burns

The growing awareness of the value of early treatment in the restoration of function resulted in a reevaluation of the treatment of patients with severe burns.[28] Body temperature saline baths, used for removal of dressings, afforded excellent opportunities for active underwater exercises necessary to prevent joint contractures during the period prior to skin grafting. Passive and assistive movements were given to enable the patient to obtain as full a range of motion as possible under the soothing effects of the saline bath. At times, ultraviolet irradiation was given to stimulate healing. After skin grafting, in the absence of complications, assisted active and passive motion was usually begun on approximately the third or fourth postoperative day. With complete healing of the grafted areas, gentle massage with sterile lanolin and graduated exercises were initiated. Early ambulation followed a pattern similar to that for other injuries.

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[26] Letter, Miss Olive Sands, St. Anselm's Vicarage, Kensington Cross, S.E. 11 London, England, to Maj. Mary S. Lawrence, 19 May 1960.

[27] (1) Circular Letter No. 131, Office of the Chief Surgeon, Headquarters, European Theater of Operations, U.S. Army, 8 Nov. 1944. (2) Circular Letter No. 23, Office of the Chief Surgeon, Headquarters, European Theater of Operations, U.S. Army, 17 Mar. 1945.

[28] Bricker, E. M.: Burns. M. Bull. European Theat. Op. 11: 11–16, 1943.

Cold injuries

The cold, wet winter of 1944–45 exacted a staggering toll of U.S. fighting forces in their headlong rush to the Rhine, often accounting for more victims than enemy action.[29] The tissue damage inflicted by chilling, damp, or dry cold required specific treatment.[30] In the acute state of active hyperemia, maintenance of minimal tissue metabolism precluded active physical therapy. The graduated vascular exercises of Buerger were usually begun during the period of bed rest as hyperemia and edema subsided. Early movement of ankle and toes was encouraged. One group of patients treated by this method was completing 10-mile hikes 1 month after injury.[31] In severe cases where muscle and nerve damage was present, producing pes cavus and clawfoot deformities, specific exercises to prevent complete fibrosis of tissue and to strengthen intrinsic foot muscles were necessary. Instruction in walking and graduated marches assisted in the restoration of normal function.

Hand injuries

The recognition of the importance of specialized treatment for patients with hand injuries, carried out at designated centers, was a long step forward in preserving and restoring useful function of this vital member. As in other war injuries, accumulating experience pointed to the necessity for early wound closure or plastic repair and emphasized the value of exercise supervised by physical therapists from the beginning and pursued during the entire period of hospitalization.[32] Immobilization was reduced to a minimum, and in fractures of the hand, improved methods of skeletal traction were also conceived to provide some degree of continuing motion during its use. At one of the hand centers, an ingenious exerciser,[33] used in conjunction with physical therapy, incorporated resilient wires in a frame to which the digits were attached by slings in such a way that a constant stimulus for exercise was provided (fig. 72). Graduated exercise under supervision was usually begun the first few days following surgery. The whirlpool bath was extensively employed preoperatively and postoperatively, and cross-contamination of open wounds was rarely encountered. One hospital, after a number of experiments, used sodium hypochlorite in the whirlpool bath to reduce the danger of contamination. (See Appendix I, p. 609.) Other equipment in general use for hand and finger exercises included rubber balls, marbles, syringe bulbs, pieces of broomstick, Plasticine, and assorted improvised devices. The need for the patient to assume responsibility for his own exercises was always emphasized.

[29] See footnote 11, p. 251.
[30] Circular Letter No. 126, Office of the Chief Surgeon, Headquarters, European Theater of Operations, U.S. Army, 18 Oct. 1944.
[31] See footnote 11, p. 251.
[32] Medical Department, United States Army. Surgery in World War II. Hand Surgery. Washington: U.S. Government Printing Office, 1955, p. 182.
[33] Rommel, C. H.: An Improvised Hand Exerciser. M. Bull. European Theat. Op. 32: 25–26, July–August 1945.

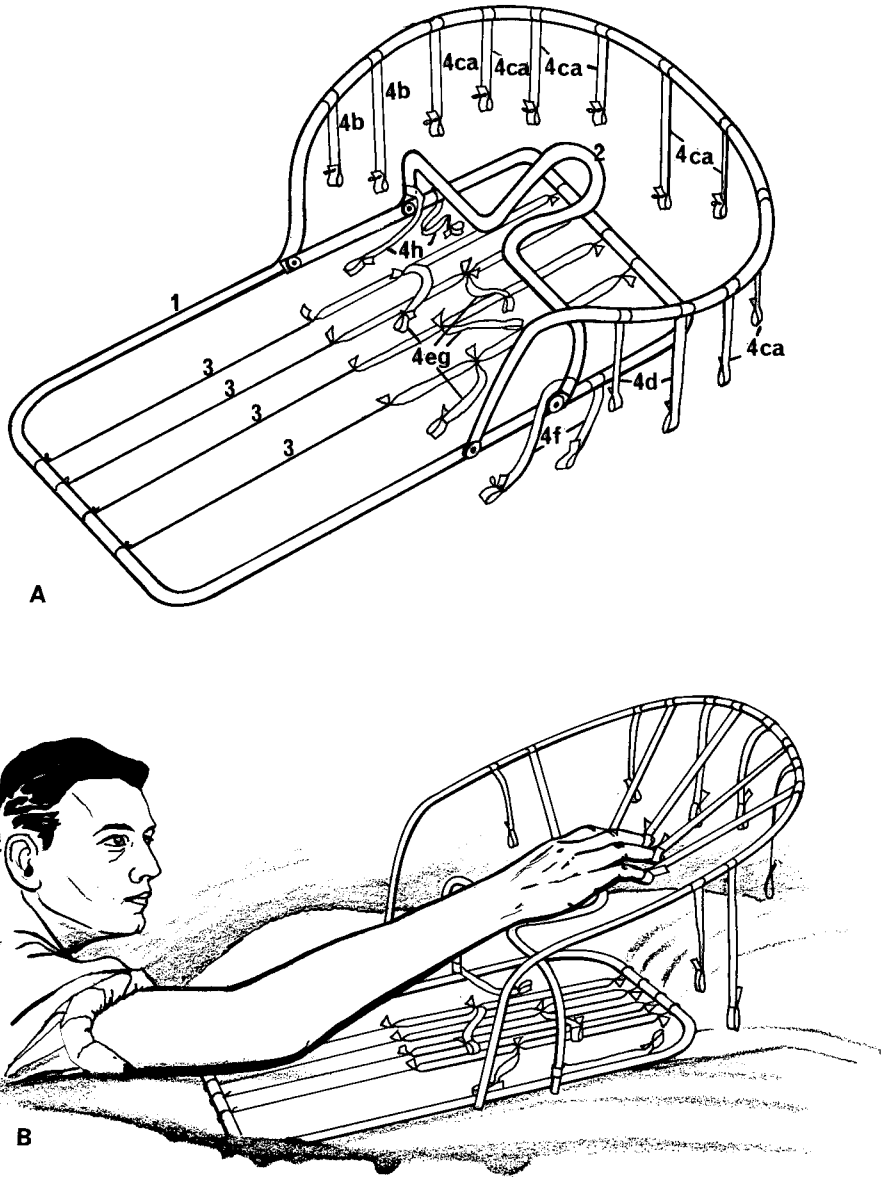


FIGURE 72—Improvised hand exerciser frame made of gas tubing (1) A. The position of hand can be varied to exercise each joint with handrest (2) as support. A rubber band on thumb and each finger produces resistance for combined hand and wrist exercises. Cotton cord (3) supports rubber bands (strips of automobile inner tubes) to maintain extension balance. The slings (4) are looped to enable patient to insert fingertips. The different slings are used for the following exercises: 4a and 4c (4ac) flexion of fingers of either hand; 4b, flexion of right thumb; 4d, flexion left thumb; 4e and 4g (4eg), extension of fingers of either hand; 4h, extension of left thumb; and 4f, extension of right thumb. B. Exerciser in use.

Nerve, brain, and spinal cord injuries

Evaluation of extent of nerve damage and treatment of peripheral nerve injuries by physical therapy measures constituted an important part of the management of these patients. The commonly used galvanic-faradic testing currents furnished information on nerve degeneration. Manual muscle, skin sensory, and resistance tests, developed in various hospitals, were also used in the evaluation of peripheral nerve injuries. The effectiveness of physical therapy was made possible not only because the patient was received relatively soon after wounding and surgery but also because practices in evaluation, treatment, and immobilization were being modified as a result of research and clinical studies.

The physical therapy management of patients with peripheral nerve injuries was similar to the program previously described for these patients in Zone of Interior hospitals. The program was often modified because of lack of personnel, equipment, time, and space. When time permitted, treatment was on an individual basis. When this was not feasible, carefully supervised and graduated reeducational exercises were performed in groups. A routine procedure, however, was to instruct the patient in the self-application of massage and to demonstrate the reeducational exercises which he was to perform at stated intervals during the day. Nonrigid elastic splinting was a common clinical practice.[34] Splints were devised to encourage active motion, and patients were instructed in their use.

By volume, the treatment of patients with brain and spinal cord injuries was considerably less than that of peripheral nerve injuries as high evacuation priorities facilitated the early return of the former group to the United States. In the chain of evacuation, when it was necessary to hold these severely wounded patients in a hospital, physical therapy was often given at an earlier date than previously used. Bedside treatment usually consisted of passive exercise to preserve full range of joint motion and reeducational exercises which were sometimes supplemented by heat and massage. If patients remained, coordination and strengthening exercises were added, and if possible, ambulation was begun.

Orthopedic injuries

Wounds of the extremities, including bones and joints, constituted "approximately two-thirds of the 381,350 wounded and injured in action in Europe." [35] Before D–day, noncombat training injuries comprised acute and chronic strains, sprains, and fractures. Following D–day, the majority of soft tissue injuries were from penetrating or lacerating wounds of the extremities, complicated many times by fracture and

[34] Seddon, H. J.: The Early Management of Peripheral Nerve Injuries. Practitioner 152: 101–107, February 1944.

[35] Medical Department, United States Army. Surgery in World War II. Orthopedic Surgery in the European Theater of Operations. Washington: U.S. Government Printing Office, 1956, p. VII.

injury to peripheral nerves, blood vessels, and soft tissue structures. With the subsequent sudden increase in the physical therapy patient load, the already structured rehabilitation program became invaluable in the care of the wounded.

When patients could go to the physical therapy clinic for treatment, whirlpool baths, if available, were frequently used for treatment of partially healed wounds of the extremities. A cleansing effect on septic wounds was noted, and joint stiffness, pain, and contractures were also relieved. In addition, patients found that the buoyancy of the water greatly facilitated the performance of exercises. Ultraviolet irradiation, if available, was also used to stimulate healing of wounds. A treatment sequence was sometimes employed in which the wound was dried by infrared irradiation following the whirlpool bath after which a stimulating dose of ultraviolet irradiation was given. When wounds were completely healed, patients were often instructed in self-application of friction massage to adherent scars. Ordinarily, in damage of muscles and tendons, and in the absence of nerve injuries, return of function was effected largely through graduated voluntary exercise.

Acute and chronic strains of back and feet accounted for a large percentage of disability of troops in combat as well as in training. Patients with acutely painful backs were frequently first treated on the orthopedic wards where some form of dry heat was applied. Later, as pain subsided, exercises were begun. Strains of the knee, as of other joints, received graduated exercises soon after injury. At the initial physical therapy appointment, patients were instructed in muscle setting exercises to be performed hourly. As the patients progressed, they were transferred to classified remedial exercise groups (fig. 73).

It was not possible to provide a complete physical therapy program for patients with major fractures due to the early evacuation of these patients. Those with long bone fractures were usually retained until after skeletal traction was completed. This permitted early use of static muscle contractions in the immobilized segment and active assistive motion of adjacent joints. Simple fractures of metatarsals and phalanges were not immobilized for prolonged periods, and many with little or no displacement were best treated by nonweight-bearing exercise.

Since amputation of an extremity precluded return to combat, evacuation of these patients to amputation centers in the United States was carried out as quickly as possible. When possible, instruction was given in muscle setting procedures and proper positioning of the stump to prevent contractures while enroute.

Patients with combined bone injury and nerve lesions required physical therapy to maintain and restore function. Patients in traction [36] received electrical stimulation of denervated muscles and exercise to the adjacent joints. Windows cut in casts permitted stimulation during the period of rigid immobilization (fig. 74).

[36] Spurling, R. G.: Early Treatment of Combined Bone and Nerve Lesions. Bull. U.S. Army M. Dept. 4: 444–446, October 1945.



FIGURE 73—Physical therapist supervising group exercise, Italy.

Thoracic injuries

Early physical therapy, emphasizing breathing and postural exercises, and ambulation, provided as spectacular an impetus in the recovery of patients with thoracic injuries as did the early treatment of injured extremities.[37] The pioneer work of the British in the treatment of patients with these injuries at the Brompton Hospital for Chest Diseases in London was interpreted to many Army physical therapists by Miss J. M. W. Reed, a member of The Chartered Society of Physiotherapy. Patients became ambulatory as soon as respiratory and cardiovascular functions permitted, often on the first postoperative day. Localized breathing and graduated exercises, usually begun as soon as the patient entered the hospital, often resulted in return of normal function in 4 to 6 weeks and eradicated the fixed thoracic cage and progressive structural deformities of the chest.

It should be apparent that many conditions other than those discussed here were treated in hospitals in the European theater. An attempt, however, had been made to focus brief attention on the more urgent needs and to point out the vital role of the physical therapist on the hospital team in the treatment of combat injuries.

Rehabilitation program

The general exercise program at the 5th General Hospital later

[37] Dykins, D.: Thoracic Injuries and Physical Therapy. The Army Nurse 2: 12, May 1945.

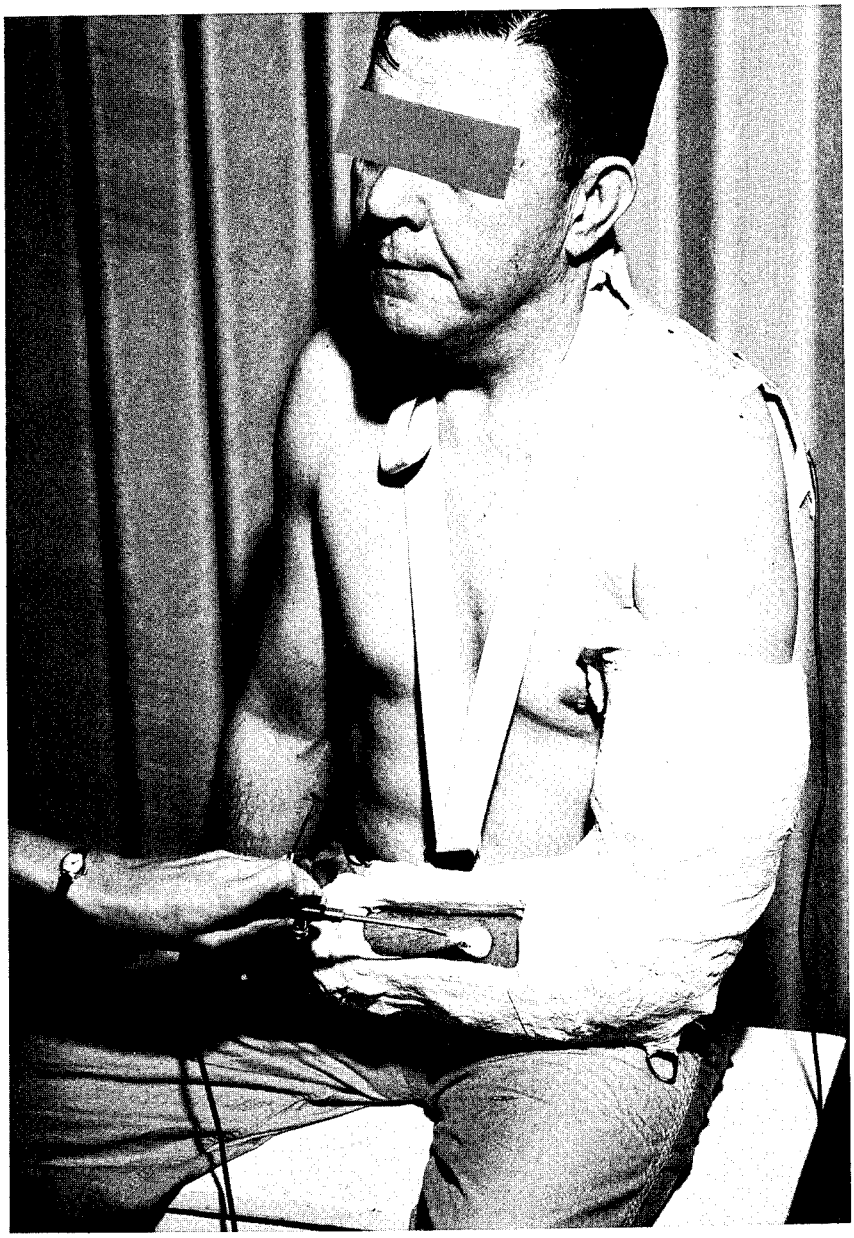


FIGURE 74—Electrical stimulation while immobilized in cast. (U.S. Army photograph.)

became part of the overall European theater rehabilitation program. Under the impact of combat, this program was evolved with the primary mission of returning the injured soldier to duty in the shortest possible time.[38] To fulfill this mission, emphasis was placed on maintaining him during his hospital stay in the best possible condition of physical fitness while preserving his interest in the war effort and stimulating in him a desire to return to his outfit. Using the pilot program developed at the 5th General Hospital as a guide, similar programs were developed in other general hospitals, though none were as well recorded.

With the increase in battle casualties and the shortage of physical therapists, the rehabilitation program was delegated to the convalescent centers. There can be no doubt, however, that the success of the program developed at the 5th General Hospital played a most important role in The Surgeon General's decision to establish what later came to be known as physical reconditioning.

AMPUTEE PROGRAM IN THE PHILIPPINE ISLANDS

The Philippine Amputation and Prosthetic Unit (9940th Technical Service Unit, Surgeon General's Office) was appointed in February 1946, by direction of the Secretary of War, with the mission to establish an amputation center and prosthetic shop in the Philippine Islands. The unit consisted of 4 Army officers, 16 enlisted men, and 2 Medical Department civilian occupational therapists.[39] Four Philippine Army nurses joined the group for on-the-job training in physical therapy procedures. Supplies and equipment were sent with the unit. A Philippine unit which had been trained in U.S. amputation centers assisted and ultimately took over the center.

Before the two physical therapy clinics, one for exercise and one for gait instruction, were completed the patients were treated at the 155th Station Hospital and the 1st Philippine General Hospital in Manila. The physical therapist was kept busy treating patients and providing training for the Philippine nurses. On Saturday mornings, the nurses received detailed instructions in bandaging, exercise, gait instruction, and clinic administration.

At the end of the 6-month period, 192 patients had been treated in the physical therapy clinic. These patients demonstrated a wide variety of upper and lower extremity amputations. Most amputation stumps were poorly shaped and many required surgical revision. Occasionally, a revision would be refused, forcing the prosthetist into evolving the best adaptation possible with the equipment on hand.

The prostheses were made of aluminum. Despite the damp tropical

[38] Circular Letter No. 146, Office of the Chief Surgeon, Headquarters, European Theater of Operations, U.S. Army, 27 Sept. 1943.

[39] Capt. Edward S. Brown, MC, surgeon; Capt. John J. Keys, CAC, prosthesis and brace maker; 1st Lt. Carol Stange, physical therapist; Lt. Roger Noden, CAV, amputee; Miss Mary K. Berteling and Miss Elizabeth Nachod, occupational therapists.

climate, the patients preferred to wear the wool stump socks. The physical therapy treatment provided these patients was essentially the same as that conducted in any amputee specialized treatment center in the Zone of Interior. In prosthetic training, walking on rough terrain was emphasized since few communities boasted of paved walks.

A small percentage of the patients arrived at the center with homemade prostheses. One man with an ankle disarticulation fitted his stump with a hollowed out piece of bamboo over which he wore a high-top shoe. Another was using a padded beer can. One bilateral below-knee amputee had put pads on his stumps and walked on his knees. The patients were well motivated and most appreciative. In October 1946, the center was turned over to the Philippine Army and the U.S. Army contingent departed.

PROFESSIONAL CONFERENCES

The value of Army professional conferences for physical therapists was clearly demonstrated during World War II. The first conference was conducted at Percy Jones General Hospital in May 1945. In attendance were 10 medical officers specializing in physical medicine and orthopedic surgery and 19 chief physical therapists from Army general hospitals conducting physical therapy training programs and specialized treatment programs for amputees and patients with peripheral nerve injuries. While this conference was planned primarily to discuss the physical therapy management of these patients, training and personnel problems also received attention. Percy Jones General Hospital was selected as the site of this first conference because of the abundance of clinical material available for demonstration. The discussion focused on the evaluation of current treatment procedures and the new electrodiagnostic procedures being tested at this hospital.

Upon the conclusion of this conference, the group proceeded to Gardiner General Hospital to observe and discuss the therapeutic value of the weight resistance exercise program developed at that hospital by Captain DeLorme.

After the new procedures for treatment of patients with peripheral nerve injuries had been tested for several months and were considered acceptable, selected medical officers and physical therapists from the neurosurgical centers were invited to Percy Jones General Hospital for orientation courses in the procedures. Three 2-week courses were given in September and October 1945. Following these, the new procedures were instituted in each neurosurgical center.

In September 1945, at the suggestion of Col. Leonard T. Peterson, MC, orthopedic consultant, Surgeon General's Office, representative medical officers and physical therapists from Army amputation centers conferred at the Army Medical Center (later Walter Reed Army Medical Center), Washington, D.C. Their mission was to analyze the treatment program for lower extremity amputees in respect to exercise

and walking instruction and to formulate a standardized program embracing the new concepts which were demonstrated and discussed. Once the program was formalized and accepted, those in attendance were instructed to return to their respective hospitals to initiate the revised program insofar as it was possible to do so without a specific directive.

1st Lt. Paige L. Weaver, a physical therapist on duty at Walter Reed General Hospital, was subsequently designated by the Surgeon General's Office to visit all general hospitals specializing in the treatment of lower extremity amputees and to evaluate the functional results of the revised treatment program to ascertain if further revision of the program was indicated. Later, this revised program for lower extremity amputees was published by the War Department [40] and previous directives relating to this group of patients were rescinded. This new directive filled an acute need in Army general hospitals and was enthusiastically received by officers and patients alike. It was agreed that the interchange of professional concepts was most valuable and contributed immeasurably to expediting the introduction of improved treatment procedures.

FILMS AND PUBLICATIONS

In keeping with the War Department's policy regarding the maximum use and development of visual instructional aids, films were produced which depicted the physical therapy program for various groups of patients with combat injuries. With the approval of The Surgeon General, this program was started late in 1943. An officer assigned to the Army Medical Museum (now Armed Forces Institute of Pathology), Washington, D.C., directed the photography at selected Army general hospitals designated as specialized treatment centers. The Physical Therapy Branch, Surgeon General's Office, was responsible for research, preparation of the script, and final editing of the film. Capt. (later Maj.) Mary S. Lawrence of the Physical Therapy Branch was assigned to the project as technical adviser.

It was envisioned that these films had a three-fold purpose: To produce an historical record of the professional advancement made in the management of patients with combat injuries, to instruct physical therapy personnel and orient medical officers on the treatment programs, and to orient the patient as to his role in his rehabilitation and stimulate interest in his recovery. At this time, there existed no similar instructional films which had been prepared by civilian agencies. These films were enthusiastically received both in the Army and in civilian groups. Several copies of each film were made and forwarded to service command surgeons for distribution to Army hospitals. Because of the keen interest shown by civilian professional groups, the War Department approved a policy by which such organizations were able to borrow the films on a nonprofit basis. As a result of this policy, these films were widely used.

The films covered the use of physical therapy in the treatment of

[40] War Department Technical Manual (TM) 8-293, June 1946.



FIGURE 75—"Oscar" received by The Surgeon General for the film "Toward Independence," 22 June 1949. Left to right: Dr. Edward M. Gunn, Army Institute of Pathology; Col. Emma E. Vogel, Chief, Women's Medical Specialist Corps; Maj. Gen. Raymond W. Bliss, The Surgeon General; and Maj. Gen. Spencer B. Akin, Chief Signal Officer. (U.S. Army photograph.)

amputees and in peripheral nerve injuries, techniques and practices in therapeutic exercise and specific therapeutic exercises for orthopedic conditions, thoracic injuries, and tendon transplants.

The Physical Therapy Branch also played a major role in the production of two films, "Swinging Into Step" and "Toward Independence," which were widely used both in Army and civilian institutions. While not primarily developed for instructional purposes, the treatment program was clearly unfolded in narrative form. "Swinging Into Step" portrayed an amputee wounded on the battlefield, his early treatment in an evacuation hospital overseas, his return to the mainland by hospital ship, the attendant morale and physical problems, and his eventual rehabilitation and complete adjustment to this condition. "Toward Independence" was the portrayal of a factory employee who, later as a combat soldier, incurred a spinal cord injury on the battlefield and depicted his rehabilitation in detail and his eventual return to his former occupation. "Toward Independence" received the annual award of the Academy of Motion Picture Arts and Sciences as being the

best documentary film of the year (fig. 75). These films are an invaluable pictorial adjunct to the history of the professional services of Army physical therapists in World War II.

To assure standardization of physical therapy techniques and procedures in massage and in the treatment of amputees, two War Department bulletins and a technical manual were prepared by the Physical Therapy Branch.[41] Special directives prepared in the Surgeon General's Office for the guidance of Army medical personnel in the treatment of patients with poliomyelitis, amputations, and spinal cord injuries[42] were coordinated with the Branch to insure incorporation of current physical therapy doctrine and treatment procedures.

SUMMARY

A comparison of the physical therapy programs conducted during World Wars I and II clearly points out a definite change in emphasis. In World War I, the emphasis was on treatment administered to injured extremities, while in World War II, attention was shifted to treatment of the patient as a whole in addition to his injured extremity and his participation in his recovery. This change in concept, developed over a period of years, reached its maximum development during World War II when its effectiveness was so dramatically demonstrated.

[41] (1) War Department Technical Bulletin (TB MED) 122, December 1944. (2) War Department Technical Bulletin (TB MED) 173, August 1945. (3) See footnote 40, p. 283.

[42] (1) War Department Technical Bulletin (TB MED) 10, 11 Feb. 1944. (2) See footnote 6, p. 247. (3) War Department Technical Bulletin (TB MED) 193, 31 Aug. 1945. (4) Army Service Forces Circular No. 440, 10 Dec. 1945.

CHAPTER IX

Professional Services of Occupational Therapists, World War II

Major Wilma L. West, AMSC, USAR

GENERAL CONSIDERATIONS

Occupational therapy programs were developed in Army general, regional, station, and convalescent hospitals in the Zone of Interior during World War II and functioned under three different organizational patterns. The first pattern was that in which occupational therapy was placed either under the Surgical Service (Orthopedic Section) or the Neuropsychiatric Service. This arrangement depended upon which service generated the majority of the patient load to be treated in occupational therapy. Regardless of the placement of occupational therapy, all patients referred by any service received treatment.

The second type of organizational pattern under which occupational therapy functioned from late 1943 to 1946 was that wherein a chief of reconditioning was the administrative authority for its triad of sections—physical reconditioning, educational reconditioning, and occupational therapy. Although medical officers were assigned as chiefs of reconditioning services,[1] the occupational therapists worked directly with and were professionally responsible to medical officers of other services who referred patients to them.[2] Administratively, the chief of reconditioning was concerned with problems of staffing, workloads, and procurement of supplies and equipment. In one instance at Vaughan General Hospital, Hines, Ill., the Reconditioning Service operated as a section under the Chief of the Surgical Service and occupational therapy was placed under the Chief of the Orthopedic Section. In some hospitals, where the chief of the newly created Reconditioning Service had previously been responsible for the medical direction of physical therapy, this section continued under his professional supervision, for example, Lovell General Hospital, Ayer, Mass.[3]

The third pattern evolved in April 1946 with the establishment of the Physical Medicine Consultants Division, Surgeon General's Office, and subsequent organization of this service in Army hospitals.[4] Directed by a physiatrist, the physical medicine service comprised three professional

[1] This pattern of assignment continued until late 1945 when, in some instances, Medical Administrative Corps officers assumed this responsibility.
[2] Technical Manual (TM) 8-291, December 1944.
[3] Personal Communication, Sidney Licht, M.D., New Haven, Conn. Formerly Major, MC, AUS.
[4] War Department Circular No. 359, 28 Nov. 1946.

sections: Physical therapy, occupational therapy, and physical reconditioning.

ZONE OF INTERIOR

General Hospitals

The majority of Army hospitals established in the Zone of Interior during World War II were general hospitals in that they admitted and treated patients with a broad range of diseases and disabilities. In a few cases, exceptions to this rule were made, as in the designation of Mason General Hospital, Brentwood, Long Island, N.Y., and Darnall General Hospital, Danville, Ky., as centers organized solely for the treatment of psychiatric patients and of Old Farms Convalescent Hospital, Avon, Conn., as a center for the blind. The largest pattern of organization of general hospitals was characterized by the assignment of one or more specialties (neurosurgical, orthopedic, or psychiatric) while still retaining the general designation of each through the breadth of diagnostic conditions referred.

The occupational therapy section and the number of occupational therapy subsections established in each Army general hospital were determined by the nature of the caseload of the particular hospital in which they were organized. With the knowledge of a hospital's designation of specialty services, the occupational therapy program in any Army general hospital during the war period can be inferred from this material.

Regional and Station Hospitals

Severe personnel shortages precluded assignment of occupational therapists to regional and station hospitals until October 1945 and February 1946, respectively.[5] For this reason, there were no officially recognized or professionally staffed occupational therapy sections in these hospitals. However, this did not mean that some programs called occupational therapy did not develop. A number of these were well deserving of the name and of great value in the rehabilitation of the patient.

An indication of the types of occupational therapy carried out at regional and station hospitals can be seen in the following excerpts from accounts of two of these programs. The first account concerns the program established at the Harmony Church Annex, Fort Benning Regional Hospital, Ga.[6]

> The plan of the whole program was to relieve the psychological malady of "hospitalitis" and to prepare the men physically and mentally for return to their own units in the quickest possible time.
>
> * * * * * * *
>
> In addition to regular calisthenic periods, physical exercise in the nature of

[5] (1) Army Service Forces Circular No. 380, 9 Oct. 1945. (2) Army Service Forces Circular No. 38, 14 Feb. 1946.

[6] The History of Military Training Within the Reconditioning Program, Army Service Forces Regional Hospital, Fort Benning, Ga., June 1945, p. 2.

occupational therapy was encouraged by the special atmosphere surrounding this Hospital Annex. Among the projects constructed and worked on by trainees were a chicken house and a garden which contributed not only to the health of the men participating in the construction and working in these activities, but to the menus at the Annex mess hall. In addition, a carpenter shop was operated by the trainees and equipment for the operation of the Annex, as well as visual aids to be used in the instructional program, were made in this shop by the trainees.

Another occupational therapy program was organized at a station hospital despite the initial lack of support of the commanding officer.[7] To begin this program, the supervising psychiatrist levied a head tax of $5 on each member of his staff. This money was used for the purchase of supplies which were then sold to patients at cost to maintain a sort of revolving fund. However, as the program progressed, its work drew the attention of the commanding officer and soon received both his support and financial aid from the hospital fund.

Convalescent Hospitals

The rehabilitation programs of convalescent hospitals were designed to return men to active duty quickly and to reduce the patient load in general hospitals. Occupational therapy programs in convalescent hospitals often differed from those found in general hospitals, primarily because of the differences in the degree of illness or incapacity found among patients. Patients who were sent to convalescent hospitals were classified as follows: [8]

a. Ambulatory convalescent medical patients not requiring general hospital care, except rheumatic fever, asthma, arthritis, tropical disease, and hepatitis cases with jaundice, which should remain in the general hospital.

b. Patients with psychoneurosis not requiring general hospital care or intensive individual treatment who * * * in the opinion of the attending medical officer will be restored to a *general duty status* through treatment offered at the convalescent hospital * * *.

c. Ambulatory convalescent surgical patients not requiring the definitive care of a general hospital.

Based on the recommendations in the circular which established the foregoing classifications, patients were divided into convalescent regiments in accordance with the three admittance groups already listed. This semi-military arrangement was an organizational tool of therapeutic value in conditioning the patient for his return to active-duty status with a Regular Army unit.

Methods and techniques of occupational therapy varied from hospital to hospital and were further influenced by the nature of the patient's illness or disability. However, most programs had a number of common factors. First, it was established that all treatment was to be of a functional nature: These men were no longer confined to bed or the ward and were not in need of diversional craft activity. In many cases, this

[7] Oral description to the author by Lt. Col. Robert J. Bernucci, MC.
[8] Army Service Forces Circular No. 445, 14 Dec. 1945.

functional therapy was a continuation of treatment originally begun in other hospitals. Second, the direction of all occupational therapy was to rest with the medical officer who was charged with the responsibility of seeing that each patient received the specific treatment his case required.

Not all patients in any category were referred to occupational therapy, nor were those who were referred always retained in the program for their full stay in the convalescent hospital. For patients with limitations in range of motion, treatment was continued as long as further improvement was likely. For neuropsychiatric patients, occupational therapy was often a needed link in the chain of transition to the full program of the convalescent hospital.

Specialized Treatment Programs

Amputees

In working with the amputee,[9] it was necessary to bear in mind that both physical and psychic trauma were present. In many cases, the loss of an extremity did not produce as great a handicap to the individual as did his reaction to his loss. For this reason, retraining began soon after removal of the extremity and continued until the patient was ready for discharge. It was important to help the patient realize that the concern of all who were treating him was as great for his rehabilitation and speedy adjustment to a prosthesis as for the successful result of the operation itself.

There is neither space nor need to discuss the various types of prostheses available for patients. Generally speaking, it was found that any prosthesis was more efficient if kept simple. With the more complicated mechanisms, more time was required for adjustment and it was often difficult to keep the prosthesis in good repair. Though many changes in design and fabrication of both upper and lower extremity appliances were made throughout the war period, prostheses for the lower extremities were more satisfactory than those for the upper extremities. With the exception of disarticulation of the hip, a leg amputee was generally able to walk again provided he had opportunity for retraining and sufficient practice. In amputation of an arm above the elbow, however, no prosthesis was found which could adequately compensate for the loss of natural movement of the elbow, pronation and supination of the forearm, or the intricate capabilities of the hand and fingers.

Occupational therapy for lower extremity amputees.—Occupational therapy, usually of a diversional nature in the early stages of treatment of the lower extremity amputee, began as soon as the patient was free from fever following the operation. In accordance with physical and psychological recovery, both bed and wheelchair activities were

[9] Willard, Helen S., and Spackman, Clare S. (editors): Occupational Therapy. 1st edition. Philadelphia: J. B. Lippincott Co., 1947.

steadily graded in difficulty so as to provide some feeling of accomplishment for the patient. This served to stimulate interest and provide the incentive necessary in the more advanced stages of training. However, it was important that, during this early stage, the patient never be given tasks he could not accomplish.

In later stages of treatment of the leg amputee, occupational therapy had two major functions. One of these was supplementing physical therapy in prosthetic training and use. This was accomplished by operation of such equipment as four-treadle floor looms, the bicycle jigsaw, and the foot-operated printing press (fig. 76). Operation of these types of equipment required use of the prosthesis but did not add the problems of balance and weight bearing which were more intensively undertaken only after the patient had become accustomed to both the fit and function of his new appliance. The second function of occupational therapy in later phases of training for the lower extremity amputee was prevocational training. As soon as the patient had learned to use his prosthesis with a minimum of dexterity, effort was made to acquaint him with the various types of work he would ultimately be able to do or to encourage him to consider retraining for his old job. The purpose of this phase of occupational therapy was to provide the patient with information about vocational possibilities at the earliest possible stage.

Occupational therapy for upper extremity amputees.—Occupational therapy for the arm amputee was not restricted to those activities which could be done with a single hand. With the use of some types of vise or clamp, the range of activities available to these patients could be greatly increased.

The upper extremity amputee was encouraged to write, and care was taken to inform the below-elbow amputee that he would be able to write with his prosthesis and that a shift of handedness would not be necessary. Usually, the Palmer method of forming letters by motion of the arm rather than with the fingers was taught. In the patient whose dominant arm had been amputated above the elbow, it was necessary to encourage development of writing skill in the opposite hand. Inasmuch as prostheses for the upper extremity amputee were at this time not constructed to perform all necessary functions, the amputee was forced to accomplish many of his activities with the remaining hand.

Retraining of arm amputees followed one of three general approaches, largely depending on the site of amputation. First, if feasible, as in amputation at the middle or lower third of the forearm, the patient was encouraged to use the prosthesis as he would the normal limb. Secondly, as in amputation above the elbow, it was usually necessary to train the individual to use his prosthesis as an aid to the remaining hand. Finally, for high upper-arm amputations, for shoulder disarticulations and in cases of limited function in adjacent joints, emphasis was placed on increasing skill in the remaining hand. In

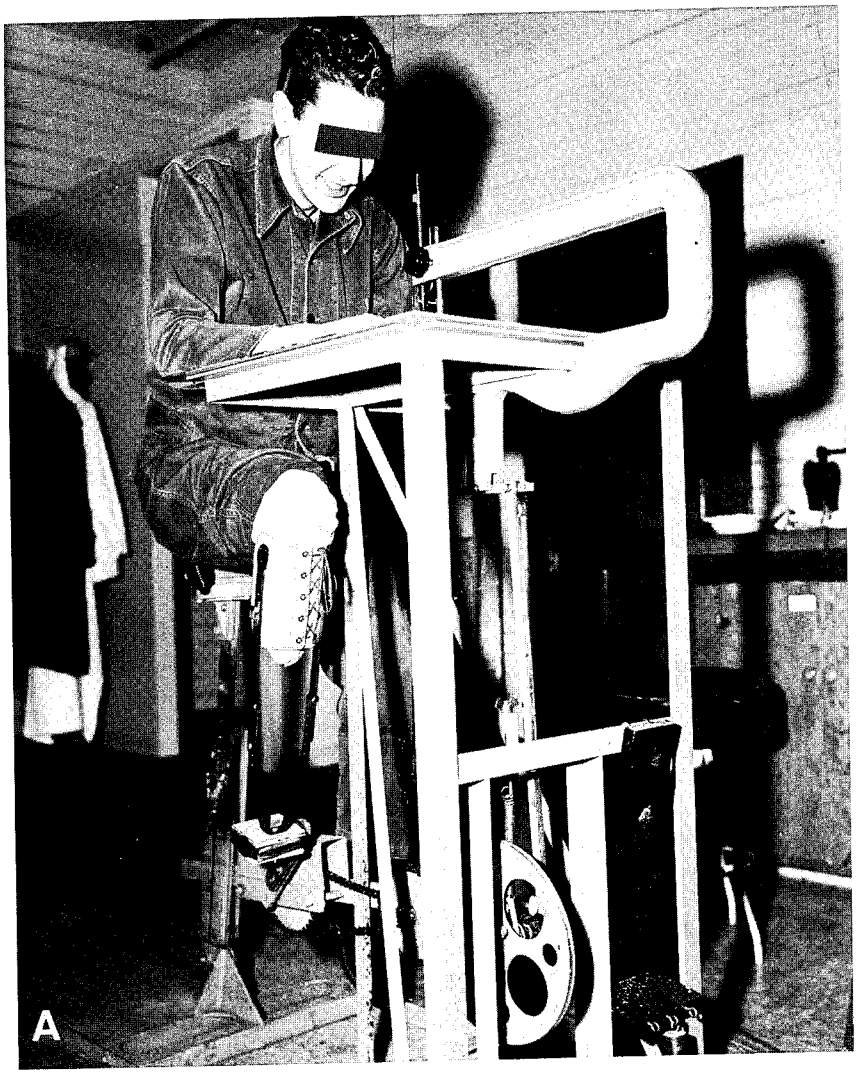


FIGURE 76—Preprosthetic training, lower extremity amputee. A. Use of bicycle saw to increase range and strength of right knee and hip. Extension cuff attaches to bicycle pedal.

all cases, the success of the training procedures was largely determined by the attitude of the patient and the occupational therapist had a vital role in seeing that this attitude was a healthy one.

It was found that the utility hook was the only functional terminal device on the upper extremity prosthesis. Its advantages lay in the

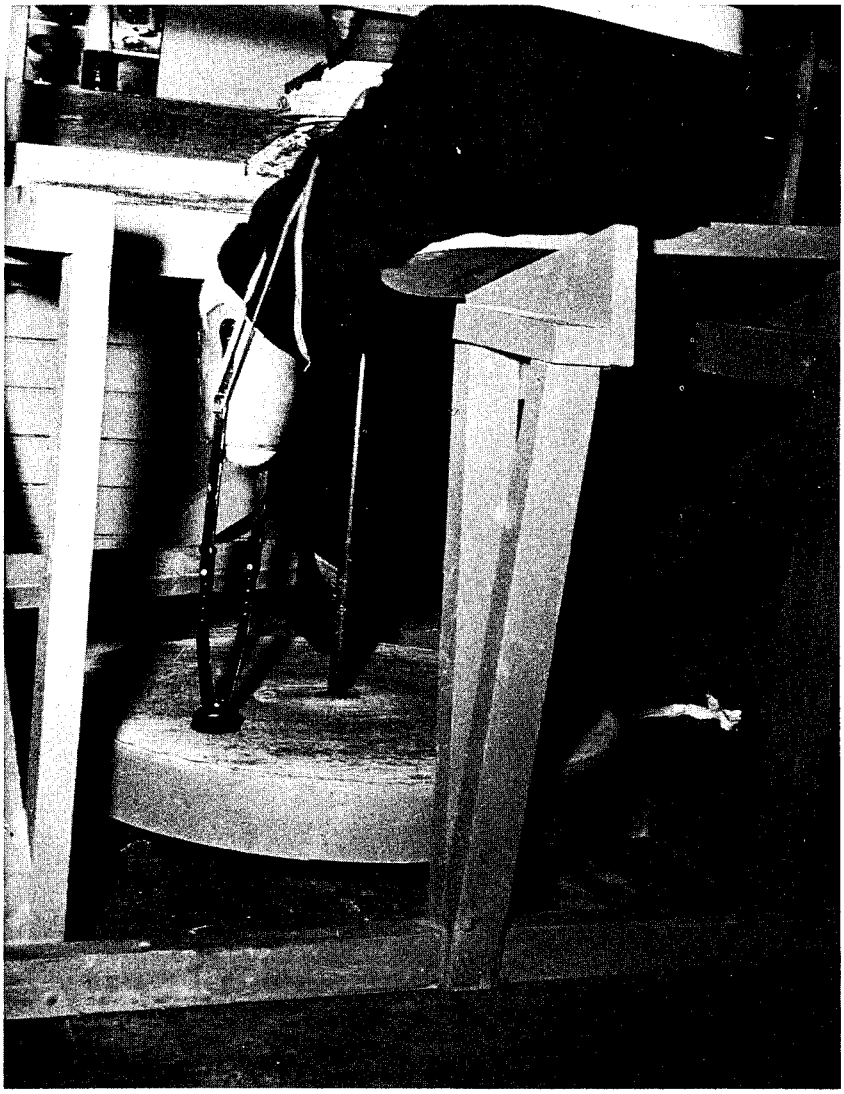


FIGURE 76—Continued. B. Use of potter's wheel to increase strength of left leg. Extension cuff with rubber tip to improve purchase on flywheel.

ability to perform with it many tasks that could not be completed with the cosmetic hand. When a patient had been without an arm for a long time, it was often found necessary to prove the value of the prosthesis. This was especially true when great dexterity of one hand

had been developed. A series of activities which demonstrated the added value of the prosthesis proved helpful for this purpose.

After the patient had been fitted with a prosthesis, training in its use began immediately and continued until he was adjusted to it. Intensive training at this early stage provided the surest method of determining what adjustments needed to be made in the fit of the prosthesis. Care was taken to allow time for the skin of the patient to adjust to the necessary friction caused by the bucket which enveloped the stump and the straps which held the prosthesis in place and operated its moving parts.

The occupational therapy retraining program for upper extremity amputees generally consisted of two parts (fig. 77). One part was concentrated on activities which incorporated the use of various tools and materials in order to provide practice needed to restore ability and confidence required for subsequent vocational training. The other part of retraining provided duplication of all routine activities of the day. These included personal hygiene and care, eating, office work, and recreation. An attempt was made to provide areas adjacent to occupational therapy facilities for active indoor and outdoor sports and for driver's training.

Various types of achievement records were helpful in the development of effective occupational therapy programs. One that was most useful contained a short list of items related to the position of the arm and the size and weight of the object to be manipulated in that position. This list was helpful in testing the fit and adjustment of the prosthesis and indicated, because of inability to use the prosthesis in certain positions, where it might be necessary to compensate for activities the patient was unable to perform.

A different type of record not only listed the activities used routinely in daily living, but provided a checklist for rating accomplishments. This had the advantage of providing initiative for self-help on the part of the patient and gave him some idea of the range of activities he could do by himself. A typical list of such activities included bathing, shaving, eating, drinking, dressing, writing, typing, and so forth.

Aural rehabilitation

Three Army general hospitals—Deshon General Hospital, Butler, Pa., [10] Hoff General Hospital, Santa Barbara, Calif., and Borden General Hospital, Chickasha, Okla.—were named specialty centers for treatment of the deaf, and, by 1946, approximately 9,500 patients had received the benefits of the Army's aural rehabilitation program.

The occupational therapy program for the deafened consisted of three

[10] Walter Reed General Hospital was originally designated a specialized center for treatment of the deaf, but in November 1943, Deshon General Hospital was designated in its place. (Medical Department, United States Army. Surgery in World War II. Ophthalmology and Otolaryngology. Washington: U.S. Government Printing Office, 1957, p. 449.)

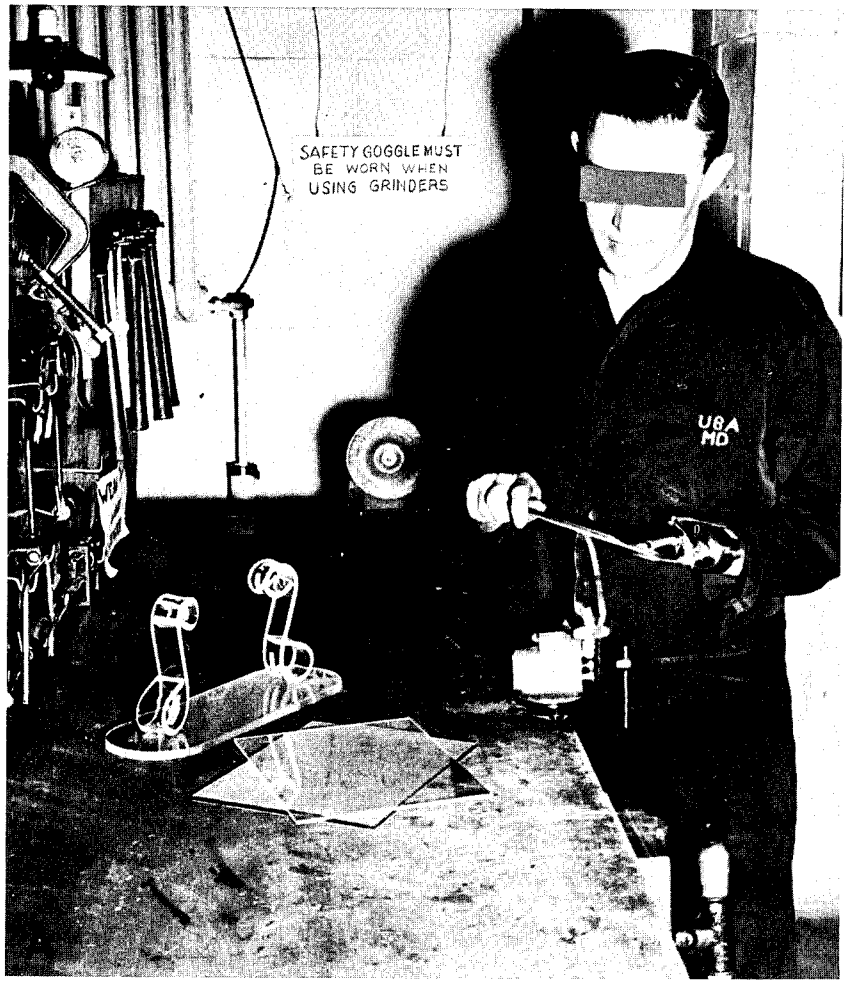


FIGURE 77—Retraining for the upper extremity amputee. A. Working with tools to increase ability to operate prosthesis.

major phases.[11] These phases included the rechanneling and retraining of undesirable or abnormal social and psychological traits, the adjustment of the patient to various noises and distractions, and assistance in developing proficiency in lipreading, the use of hearing aids, or both. Though it might seem to be suggested, not all patients suffered from psychological or social disturbances as a result of hearing loss. When such was the case, however, prescription for the patient included treatment desired and special precautions to be noted.

In order to determine his interest and capabilities, each patient

[11] Brown, N. F.: Occupational Therapy in Aural Rehabilitation. Am. J. Occup. Therapy 1: 293–295, October 1947.

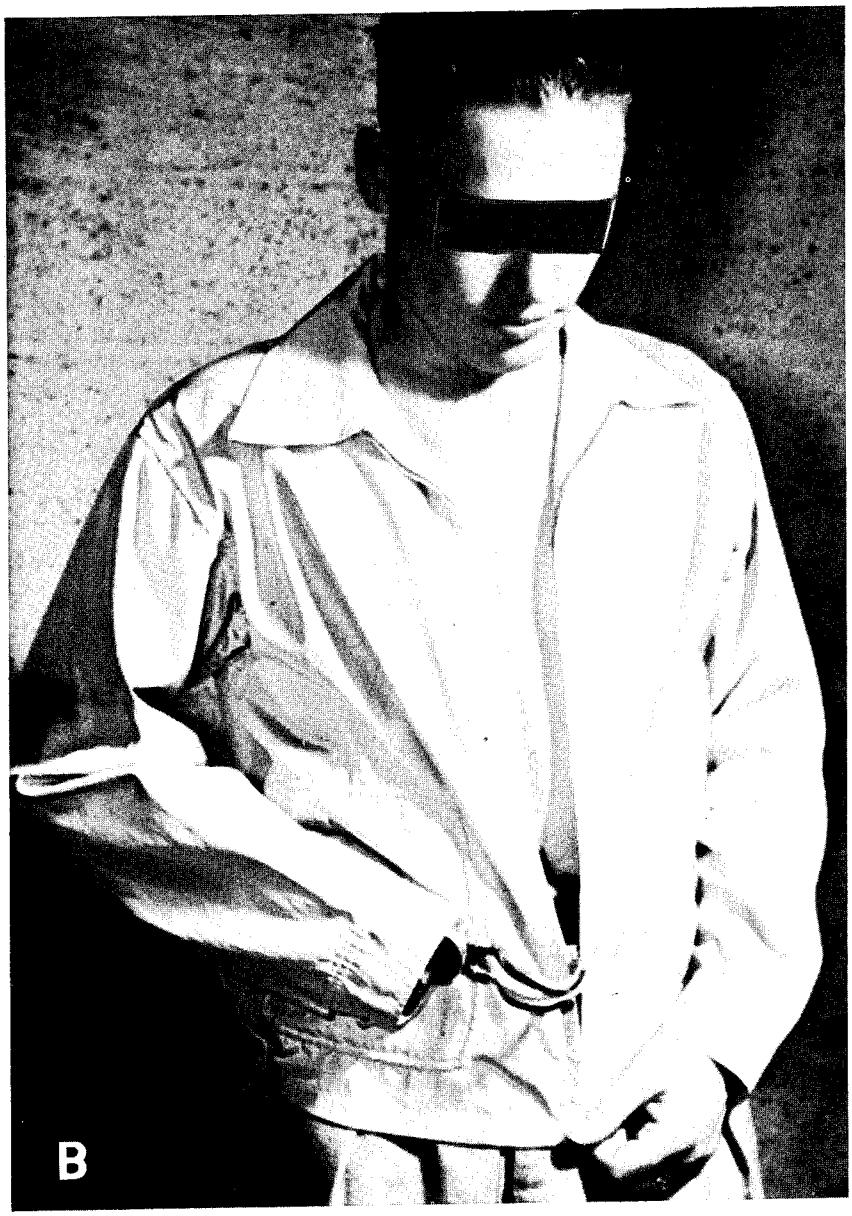


FIGURE 77—Continued. B. Practicing dressing activities.



FIGURE 77—Continued. C. Practicing grasp and release of multishaped pieces while playing checkers. (U.S. Army photograph.)

was personally interviewed before treatment. With his medical and personal history at hand, the occupational therapist determined the activity the patient was to undertake.

Prime attention was paid to character changes which developed in the patient. In order to develop the firm personal relationship necessary for treatment of specific antisocial or depressed patients, one occupational therapist worked with a patient exclusively. Furthermore, the patient was allowed to work alone until he was prepared to join in group activities.

A second aim of therapy was to increase the patient's power of concentration. Since hearing losses corrected by mechanical aids usually involved some distortions of sound, the patient had to learn to block out extraneous sounds from his conscious perception. In order to accomplish this, activity was graded according to distracting noise. For example, the patient would usually begin occupational therapy by participating in some quiet type of activity such as leatherwork or carving; outdoor work such as gardening was also used during the early stages of activities. As the patient gained an ability to concentrate without fatigue, he was gradually advanced to more distracting activities such as metalwork or woodworking with power tools. Patients with hearing aids were discouraged from turning their aids off when the noise level became distracting.

Vocal communication and lipreading were encouraged, and written notes were used only when absolutely necessary, as for a newly admitted patient. Effort was made to create a normal environment for development of everyday communication skills.

General medical and surgical conditions

General medical and surgical cases made up a relatively small percentage of the total number of patients referred to occupational therapy in Army hospitals during the war years. This was because the majority of illnesses and disabilities were such as to place patients in specialty categories. However, the occupational therapy programs of most Army hospitals included some patients with cardiac pathology, arthritis, diabetes mellitus, thyroidism, kidney disturbances, communicable diseases, dermatologic conditions, hematologic disturbances, and gastrointestinal disorders.

In large measure, the occupational therapy program for these patients was psychological and supportive. Among its most important aims were aiding adjustment to hospitalization during necessary medical treatment, including promotion of relaxation and making bed rest acceptable; aiding in resocialization, as in the case of certain dermatologic conditions; and providing avocational interests to aid convalescence. Where indicated, therapeutic media were selected to provide the specific means of controlling and grading activity as prescribed by the physician in accordance with individual patient needs (fig. 78). Here, objectives included maintaining or increasing range of motion (arthritic patients), promoting relaxation (patients in acute stages of heart disease), or increasing physical tolerance (cardiac patients in convalescent stage).

Treatment for cardiac patients generally began on the ward and progressed according to improvement in the patient's condition. Occupational therapy doctrine was carefully outlined, as follows: [12]

> Treatment. The principle of occupational therapy for cardiac disorders is graded activity.
> (1) Activity in bed involving light finger motions only.
> (2) Activity in bed involving forearm and upper arm motions.
> (3) Ambulatory activity, preferably off the ward.
> Special precautions:
> (1) Controlled activity must be planned to combat the restlessness caused by anxiety and boredom.
> (2) Correct posture during activity should be maintained.

Occupational therapy was frequently specifically prescribed for arthritic patients. Typical objectives of treatment included increasing muscle strength, extending range of joint motion, and stretching or preventing adhesions.

For other medical and surgical patients, occupational therapy was developed as prescribed by the medical officers in charge. In general,

[12] See footnote 2, p. 287.



FIGURE 78—Activities requiring minimal exertion for general medical and surgical patients. (Top) Clay modeling. (Bottom) Radio repairing.

it first attempted to make the patient's stay in the hospital more acceptable through various forms of supportive therapy on the wards or in the clinics. When there could be a medical improvement brought about by supervised activity, a functional program was developed in accordance with the patient's needs.

Hand injuries

Inasmuch as the utilization and value of occupational therapy in the treatment of hand injuries are documented so extensively in "Hand Surgery," a volume in the professional series of the official history of the Medical Department of the U.S. Army in World War II,[13] the reader is referred to that source of information for coverage of this subject.

Head injuries

Three major groupings of patients were common among soldiers who incurred brain injuries in the war. The first group consisted of patients with motor and sensory disturbances but no essential impairment of mental function. The rehabilitation program for these patients consisted primarily of physical therapy, vocational guidance, and the retraining necessary to condition them to their remaining defects. Occupational therapy was prescribed for increased muscle control and power, especially of the intrinsic muscles of the hand, and frequently included speech and writing lessons.

Disturbances of general physical and mental capacities were characteristic of a second major grouping of the brain-damaged patients. They were abnormally sensitive and irritable, easily fatigued, and usually demonstrated impairment of higher mental functions such as attention, interest, and capacity for abstraction. Although educational reconditioning, physical therapy, and occupational therapy were utilized in an attempt to aid in improving both physical and mental capacities, treatment of patients in this group was seldom successful.

In the third group, more or less circumscribed aphasic defects were prominent. Between 700 and 1,000 aphasic patients were admitted to Army hospitals during World War II, and in accordance with policy, they remained under Army hospital jurisdiction until it was evident that they had received maximum benefit from therapy. Criteria for determination of retention included:

1. The rate of improvement and the likelihood of further substantial improvement as a result of direct training.
2. The amount of intellectual impairment.
3. The patient's previous educational attainment.
4. The patient's pre-Army vocation.

[13] Medical Department, United States Army. Surgery in World War II. Hand Surgery. Washington: U.S. Government Printing Office, 1955.

5. The type of dependency and disposition available: self, relatives, Veterans' Administration, or transfer to another Army hospital.[14]

Underlying principles for treatment of the patient with aphasia were also outlined, as follows:

1. Language training, including reading and writing as well as speech, should be coordinated with general sensory and motor retraining because language training is but one aspect of a total rehabilitation program. Very often the aphasic patient has undergone modifications of personality as a sequel to brain injury, and these modifications must be considered in determining therapeutic approaches. Emphasis in therapy should be placed on the assets and the maximum use made of the unimpaired or relatively unimpaired sensory and motor avenues.
2. It is important to assist the patient as early as possible in developing a basic functional vocabulary that will meet his everyday environmental requirements, as well as his vocational and social needs.
3. It is frequently valuable to permit the direction of organized therapy to depart from and follow the patient's spontaneous development of language.
4. Language training should be based on the past experiences of the patient. It is desirable where possible for the content of the training sessions to include material pertinent to the patient's hobbies, occupational and school interests, and cultural background.
5. The aphasic's condition is not static. Inconsistency in performance is characteristic. At no time should improvement be taken for granted and patients must be given repeated opportunity to practice what they have learned and encouraged to utilize this material in real situations. Efforts must always be made to build up the patient's confidence in himself and each therapeutic session should end with a feeling of accomplishment on the part of the patient. At all costs, *discouragement should be avoided.*

The actual therapeutic techniques were based on the results of the Halstead Test (functional orientation) and the Head Chesher Test. Treatment for disorientation as to time, space, size, distance, objects, and the patient's own body as indicated by the Halstead Test consisted of daily drill in various activities demanding the proper orientation. Typing was found to be of value in teaching eye-hand coordination and in the improvement of spelling.

Group work in occupational therapy supplemented training accomplished in speech programs, and, in many cases, the programs were coordinated so that each could reinforce the learning accomplished in the other. All skills that were re-learned after the injury had to be practiced regularly to establish patterns of use and communication. Since good adjustment was a necessity in treating the patient with aphasia, effort was make to select tasks of interest to him. Also, as approximately 50 percent of those patients had hemiplegia, specific treatment was given in functional occupational therapy for these conditions as well.

Neuropsychiatric conditions

Psychiatric occupational therapy services were organized in general,

[14] See footnote 9, p. 290.

convalescent, regional, and station hospitals. In each, a separate program was developed to meet the needs of the psychiatric patient.

Both closed- and open-ward programs were conducted in most Army general hospitals which had been designated as specialty centers for the treatment of psychiatric patients. Ward assignment was determined by the degree of illness evident in the individual patient.

Closed-ward programs.—A review of the annual reports of the hospitals having psychiatric facilities indicated that nearly all of them maintained some type of occupational therapy program for closed-ward patients. It was not unusual to find the closed-ward occupational therapy program given priority over other occupational therapy programs in terms of personnel, facilities, supplies, and equipment.

The most frequent diagnoses among closed-ward patients were schizophrenia, manic depressive psychosis, and acute psychoneuroses. In smaller numbers were paranoiacs, psychopathic personalities, mental defectives, psychosomatic disorders, and hysterical paralyses.

In some instances, occupational therapy was individually prescribed by the psychiatrist. Since psychiatry was still more descriptive than dynamic, these prescriptions usually stated little more than a diagnosis or major symptomatology and, if indicated, precautions relating to suicidal or homicidal tendencies. For the most part, the occupational therapist was given only a name and a clinical label or impression.

In accordance with the doctrine in technical manuals on occupational therapy and psychiatry, some of the treatment principles used were: [15]

1. For the schizophrenic patient:
   a. Group activities to stimulate identification and interaction (publishing a hospital newspaper).
   b. Creative art for nonverbal expression (painting or music).
   c. "Dirty" activities of the untidy and the "smearers" (clay modeling and finger painting).
2. For the manic patient:
   a. Activities requiring gross physical motions (carpentry).
   b. Work situations permitting freedom of movement without close contact (gardening).
3. For the depressed patient:
   a. Simple, readily achieved, time-limited tasks (based on previous hobby interests).
   b. Menial (janitorial) work for guilt atonement.
4. For the paranoid patient:
   a. Individual work assignments involving responsibility (clerical).
   b. Jobs permitting a high standard of performance (selected in accordance with individual interests and abilities).
5. For the psychoneurotic patient—activities selected to counteract symptoms:
   a. Physically demanding for the tense and restless.

[15] Solomon, Harry C., and Yakovlev, Paul I. (editors): Manual of Military Neuropsychiatry. Philadelphia: W. B. Saunders Co., 1945, pp. 606–607.

b. Requiring skill and concentration for the introverted and anxious.

c. Doing something for others (family or hospital) for the discouraged and depressed.

6. For the psychopathic patient—strictly supervised and sternly disciplined activities (industrial assignments).

7. For the mental defective patient—short-term tasks within their abilities to accomplish (with constant supervision, protection from ridicule, tolerance of error, and liberal praise for achievement).

8. For the patients with psychosomatic disorders—absorbing, detailed tasks to overcome concern with complaints and motivate patient toward normal interests and recovery.

9. For the patients with neurological problems—activities incorporating principles of physical treatment with maximum psychological motivation.

Since these were programs for seriously disturbed individuals, it was necessary to have fairly close supervision of all work. However, even when this supervision was provided there was considerable freedom in the use of all available facilities by all patients.

Efforts were made to correlate the observations and experiences of the therapists with the total program of the patient. This most frequently took the form of weekly reports to the medical officer, but another occasionally used method was that of the occupational therapist's participation in regular staff conferences (fig. 79).

Open-ward programs.—Since open-ward patients were far more numerous than closed-ward patients, there were a greater number of them referred to occupational therapy; in some instances, this ratio was as large as 3 to 1. For those hospitals reporting statistics, attendance averaged 243 patients per month in 1945.

The four basic types of military neuroses and the doctrine used in occupational therapy for treatment of these patients were:[16]

1. *Neuroses occurring before exposure to military life.* Patients such as these were often disciplinary problems and, in most cases, since prognosis was poor, they were eventually discharged from the service.

In treating these patients, it was most common to make use of the industrial therapy program. It was felt that any project of a constructive nature, particularly if of benefit to the hospital, would be advisable.

2. *Neuroses caused by restrictions of military life.* In these patients, prognosis was good if adjustment could be made. These patients were rarely disciplinary problems and were frequently returned to duty.

Symptoms in this group often included tenseness, loss of appetite, inability to sleep, and depression. Occupational therapists usually concentrated on shopwork activities, which would provide a physical release

[16] Stakel, F.: Occupational Therapy for Neuropsychiatric Patients in an Army General Hospital. Occup. Therapy 23: 225–229, October 1944.



FIGURE 79—Staff conference, neuropsychiatric occupational therapy section, Battey General Hospital, Rome, Ga.

of energy to lessen tension and anxiety as well as to induce sleep and rebuild appetites.

3. *Neuroses caused by foreign service.* With the precipitating factors of homesickness and poor living conditions, these patients, like the first group, had poor prognoses and were usually discharged from the service.

Although not normally antisocial in behavior, these patients needed socialization and constructive activity and thus were often worked into the industrial therapy program.

4. *True war neuroses caused by actual combat.* These patients were largely men who were well adjusted in civilian life and usually had a good prognosis for recovery.

Occupational therapy frequently had good results with this group. Projects such as fly tying with a high-interest level and requiring only a short-work period were often effective. The patient was urged to talk of his experiences if he felt inclined to do so and often depicted his battle experience or war dreams in various art forms. In cases where the patient was able to express himself in such a manner, occupational therapy was decidedly beneficial.

Comparing the open- and closed-ward programs, three major, differences may be noted. First, many open-ward patients were assigned

to various hospital services and departments in order to provide both constructive activity and contact with normal individuals. Second, there was normally a much larger range of activities available to the patient in an open ward; these often included facilities for photography, printing, gardening, and the use of power tools. Finally, one additional type of activity—industrial therapy—was extensively used in the treatment of open-ward patients. The classical version of this type of program involved the assignment of neuropsychiatric patients to selected departments and services concerned with the maintenance and operation of the hospital (fig. 80). A variation of industrial therapy, often called commercial or work therapy, involved various experimental programs employing patients on subcontract work projects for war industries. Generally, however, the latter was not extensively used for neuropsychiatric patients.[17]

Specialty programs.—Two Army general hospitals in the Zone of Interior were devoted entirely to the treatment of psychiatric patients. Mason General Hospital housed more than 3,000 patients at its peakload and Darnall General Hospital provided for approximately 1,000.

At Mason General Hospital, older restrictive theories of treatment were at times reversed. One major advance was in the demonstration that neuropsychiatric patients did not have to be restricted in the use of tools appropriate to the task they were performing. So long as adequate supervision was provided and tools were periodically checked, it was discovered that no limitation was necessary. This free use of tools created a more relaxed environment and many of the evils of a restricted stiuation were avoided.

The occupational therapists also made an effort to concentrate on the use of self in treatment. Every attempt was made to assign the patient to the occupational therapist whose personality was best suited to working with him. Here, a conscious emphasis was placed on contact with a well person. Due to the large patient census at Mason General Hospital, the occupational therapist also played an important part in providing information about individual patients at staff conferences.

Finally, the chief occupational therapist, Miss Dagny Hoff, took two steps in administrative reorganization which resulted in recognition of occupational therapy as more of a therapeutic agent than a program concerned only with keeping patients busy. The first of these was removal of the industrial therapy program from her department on grounds that, although the use of this activity was obvious, its therapy was dubious. Secondly, occupational therapy was transferred from the jurisdiction of reconditioning to that of the chief of neuropsychiatry to permit its more definitive use in treatment of the acutely ill psychiatric patient.[18]

[17] For a more detailed discussion of industrial therapy as used with other diagnostic conditions and for its further differentiation from commercial work therapy, see sections in this chapter entitled "Industrial Therapy" and "Work Therapy."

[18] Personal correspondence with the author.



FIGURE 80—Industrial therapy providing socialization and constructive activity which benefits both the hospital and the patients. (Top) Mixing concrete. (Bottom) Setting a natural stone walk. (U.S. Army photographs.)

Orthopedic conditions

Patients with various types of orthopedic conditions formed one of the larger groups in Zone of Interior hospitals during World War II. Fractures of the extremities constituted the major group of orthopedic conditions referred to occupational therapy and equaled about one-half the total number in the only other larger group, neuropsychiatric. It was not, however, uncommon to have multiple disabilities in one patient, the most frequent combination with fracture being peripheral nerve involvement. Burns were another complication and, although far smaller in number, constituted a serious orthopedic treatment problem for occupational therapists in several Army hospitals. Internal derangements of the knee and dislocations and instabilities of the shoulder were also common, as were orthopedic conditions related to back and foot injuries. Many of the disabilities in these latter categories resulted from training accidents caused by sprains, poor physical condition, or lack of application of good body mechanics.

By April 1945, 35 general hospitals had been designated as orthopedic specialty centers [19] and various others had a limited number of patients in this category. Each specialty center devised an extensive occupational therapy program especially for treatment of orthopedic injuries. As was customary, this program was both functional and diversional.

Since diversional occupational therapy varied little in its application to the treatment of different types of disabilities, the activities used for orthopedic patients were of the usual craft and hobby variety. Much of this program was carried out by volunteer members of the Arts and Skills Corps of the American National Red Cross, under the supervision of the chief occupational therapist.

The functional programs were specialized and extensive. At Vaughan General Hospital, occupational therapy was under the direct supervision of the chief of the orthopedic section. This type of organization allowed for close coordination of all aspects of treatment. The program at this hospital was described in the annual report for 1945, as follows:

> The scope of the program is three-fold. It includes an orthopedic treatment program, diversional program, and a prevocational program. The purpose of Occupational Therapy in the field of orthopedics is to give medically prescribed treatment and exercise to an injured part through some purposeful activity. * * * Patients come by prescription of the Ward Officer, and the therapists supervise and guide activity programs selected to meet the patient's physical and psychological needs. Each patient is given a scientifically graded activity program which is gradually increased until he has regained normal or near normal function of the injured part (fig. 81).

Vaughan General Hospital was credited with having a well-developed occupational therapy program and one of the most extensive in any Army hospital during the war years. In 1945, 981,750 treatments

[19] Smith, Clarence McKittrick: The Medical Department: Hospitalization and Evacuation, Zone of Interior. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1956. pp. 304–313.



FIGURE 81—Graded activity program for orthopedic patient with shoulder disability. A. While patient is in cast and confined to the ward, occupational therapy is prescribed for maintenance of strength and range of motion in right hand. B. Cast removed for treatment period in clinic. To eliminate pull of gravity and to protect weakened shoulder musculature, right extremity is supported by sling suspension device.

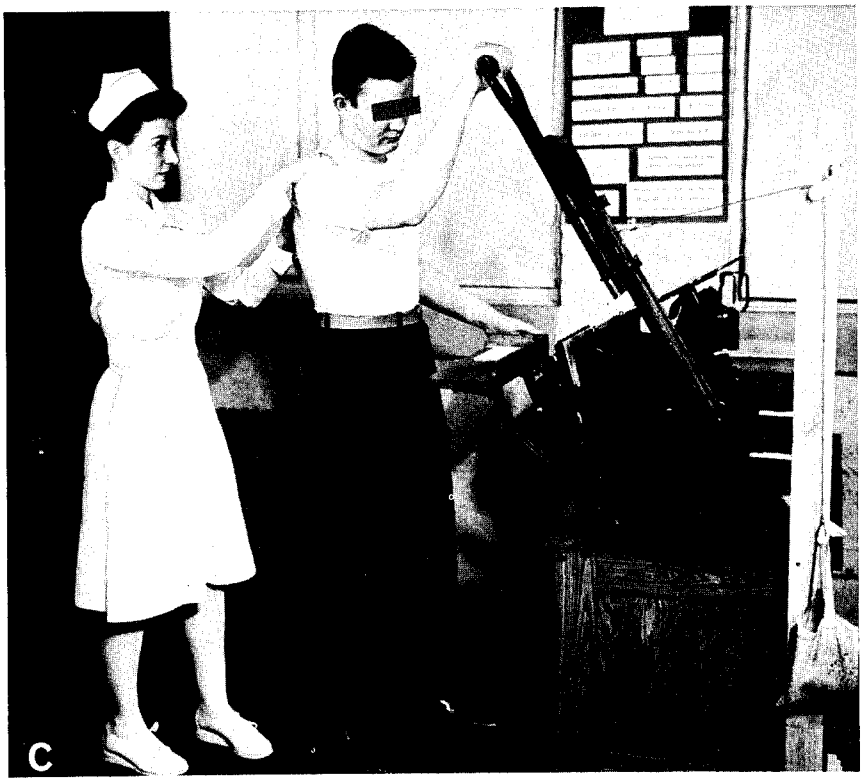


FIGURE 81—Continued. C. Final stage of graded program. Patient is exercising extremity against gravity and with added resistance of weights attached to lever of printing press.

were reported.[20] This program was also enhanced by the development of special equipment for use in orthopedic cases. Among the originally designed or adapted pieces of equipment used at that hospital during World War II are mentioned in the 1945 report, as follows:

1. Extension block on coping saw for assistive motion.
2. Specially devised handles on table looms to force wrist motion.
3. Extension handles on looms to increase flexion of shoulders.
4. Large-grip sand blocks to increase spread of the palmar fascia following burn contractures.
5. Extension on lever of foot-operated printing press to increase range of hip and knee motion and strengthen quadriceps.

[20] It should here be noted, however, that there was little uniformity in statistical reporting systems used by occupational therapists in Army hospitals. While some reported only numbers of patients referred, others counted each visit as a treatment and still others computed treatments in terms of various time units. Thus, a patient having occupational therapy for 2 hours daily might in one instance be recorded as having 1 treatment; in another, as receiving 4 treatments of 30 minutes each. It is not known which system was in operation at Vaughan General Hospital for the period covered by the quoted figure.

Regardless of the diagnoses of patients with orthopedic conditions, the occupational therapist's treatment problem concerned neuromuscular or musculoskeletal disabilities and, for such conditions, the then current treatment doctrine [21] specified observance of the following basic principles: graded force for joint limitation and graded resistance for muscle weakness. Based on an analysis of both patient interests and the therapeutic exercise potential of available media, activities were selected to provide for each individual's psychological and physical needs. Wherever possible, bilateral activities were used. These had the advantage of employing both extremities, on an alternating basis, in identical motions, thus enabling the patient to imitate, with the affected member, the action of the uninjured member and to profit by a normal pattern of work and rest periods for the affected arm or leg as the case might be.

Often, in the early stages of treatment, it was necessary to build up tool handles for hands with limited grasp and to use such assistive devices as suspension slings to eliminate the pull of gravity in arm and shoulder disabilities. Later, as range of joint motion or degree of muscle power increased, tool handles were decreased in size, supporting slings removed, and various techniques utilized for requiring motion not only against gravity but with resistance added. At first, such resistance was that provided by the tools and materials used; subsequently, springs and weights were added to equipment such as looms, bicycle saws, and printing presses to increase the patient's strength as indicated. For increase in joint motion, use of various attachments to handles and pedals required effort beyond the existing range (fig. 82), as did changing the position of the patient in relation to the position of the work—high, low, or off center—as indicated for specific joint motions. The repetitive nature of the exercise also permitted the upgrading of activities in accordance with increasing function.

Peripheral nerve injuries

Up to September 1944, 26 Army general hospitals had been designated neurosurgical centers; however, a reorganization at that time centered the programs in 19 of these.[22] Each developed its own occupational therapy program for the treatment of peripheral nerve injuries.

The cases referred to occupational therapy were of four major types: involvements of the median, radial, ulnar, and peroneal nerves. Patients with ulnar nerve injuries were seen most frequently and a combination of injury to the median and ulnar nerves was not unusual.

Of all the peripheral nerve injuries, 75 percent involved the upper extremity. The occupational therapist was primarily concerned with

[21] See footnote 2, p. 287.

[22] Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume I. Washington: U.S. Government Printing Office, 1958.

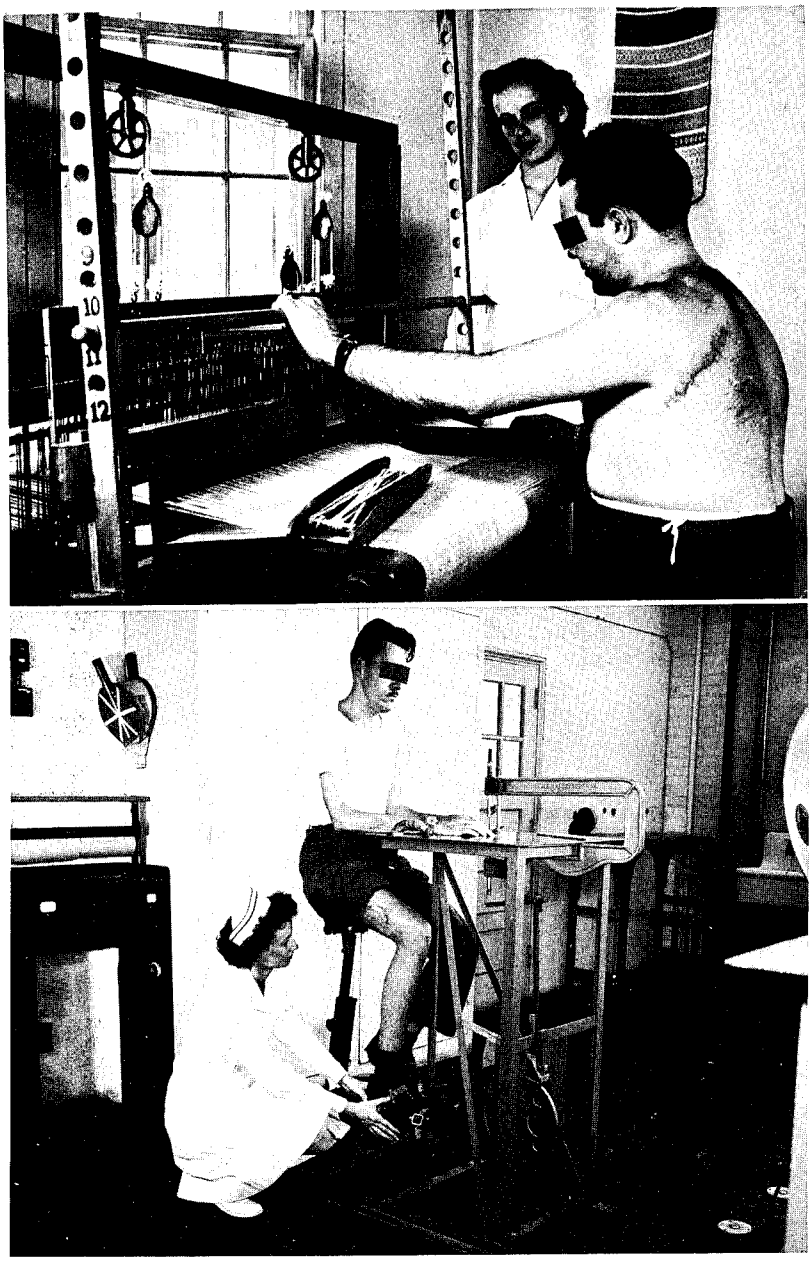


FIGURE 82—Following surgery, occupational therapy is prescribed to increase range of motion in affected part. (Top) Patient works to increase flexor range and strengthen left humeral flexors. Adapted handle is raised to increase arc of motion as patient's progress indicates. (Bottom) The bicycle saw seat shaft and pedal arc can be adjusted to increase or decrease range of motion in hip and knee joints.

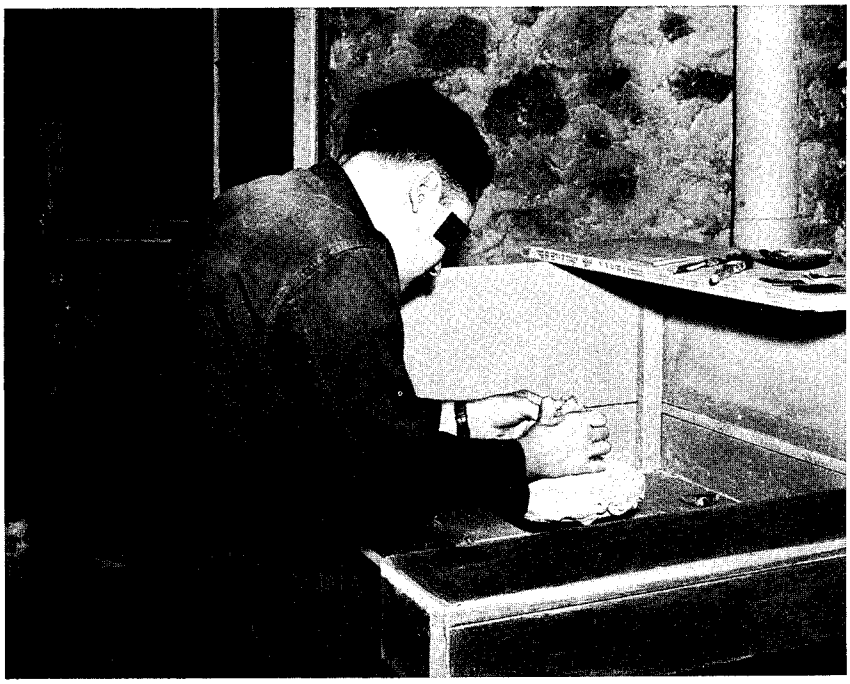


FIGURE 83—Peripheral nerve injury. Patient works with clay to increase coordination and strength in thumb and fingers. (U.S. Army photograph.)

those relating to the median and ulnar nerves because of their extreme importance in hand function.

Occupational therapy was generally brought into the treatment program upon the return of voluntary motion to the affected part. Its specific contribution was in the second and third stages of nerve injury management.[23] In these stages, it was important to utilize as much active motion as possible in order to improve and maintain joint mobility and stimulate peripheral circulation to reduce local tissue edema.

Patients were carefully supervised through a series of activities which were graded according to amount of resistance, motion required, and length of treatment period (fig. 83). Leatherwork, weaving, woodworking, and plastics were activities that were most suitable to adaptation for treatment of these patients. In all of these activities precautions were taken to insure that the patient did not overexercise, that the resistance provided in the activity was appropriately graded, and that anesthetic areas were protected. For example, when working with plastic materials, care had to be taken that the patient with

[23] Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume II. Washington: U.S. Government Printing Office, 1959.

anesthetic areas did not burn himself while forming a piece of hot plastic in a mold. Since this activity was new, patients became overzealous in making lamps, bookends, and picture frames that involved the heating and molding of plastic.

Patients with peripheral nerve injuries usually required long periods of hospitalization while regeneration was occurring. Since War Department policy required the retention of patients in the hospital until maximum treatment benefit had been obtained, a major problem in management of these patients was to maintain their interest in achieving maximal function. However—

> The 90-day work furlough solved this problem. Patients who exercised injured extremities grudgingly 3 or 4 hours daily in a hospital gladly exercised them 8 or 10 hours daily in a factory, while at the same time, they aided the war effort, improved their own financial status, and had the added advantage of living with their own families, which additionally improved their morale.[24]

Plastic surgery

By April 1945, nine general hospitals were designated as specialty centers for the treatment of injuries requiring plastic surgery.[25] Each of these hospitals developed an extensive reconditioning program in which occupational therapy played an important part.

The extent of the occupational therapy program developed for patients undergoing plastic surgery at O'Reilly General Hospital, Springfield, Mo., can be seen in the fact that some 370 patients were referred for this treatment in one 6-month period. That the program for these patients was favorably received is indicated by these comments:

> This dichotomous activity, consisting of functional therapy on the one hand, and diversional activity on the other, has played an important role in the reconditioning program. It would be no exaggeration to say that the integration of occupational therapy in the therapeutic regimen of patients suffering from orthopedic, neurosurgical and plastic disabilities, has accomplished much to restore the normal function of injured tissues.[26]

The purpose of the occupational therapy program was as already indicated, twofold. First, diversional therapy was provided for ward patients. Second, but simultaneously, a functional program was designed to restore, insofar as possible, normal motion in the affected areas. Since the extremities were often immobilized for an extended period before and after surgery, muscles were weakened and both strength and range of motion were prime objectives of the graded therapeutic activity program. As might perhaps be expected, the plastic surgery cases most commonly referred to occupational therapy were those involving the upper extremities (fig. 84).

In 1945, the occupational therapy program for plastic surgery pa-

[24] (1) See footnote 22, p. 310. (2) See section on work furlough in this chapter.
[25] See footnote 19, p. 307.
[26] Annual Report, O'Reilly General Hospital, 1944, p. 8.

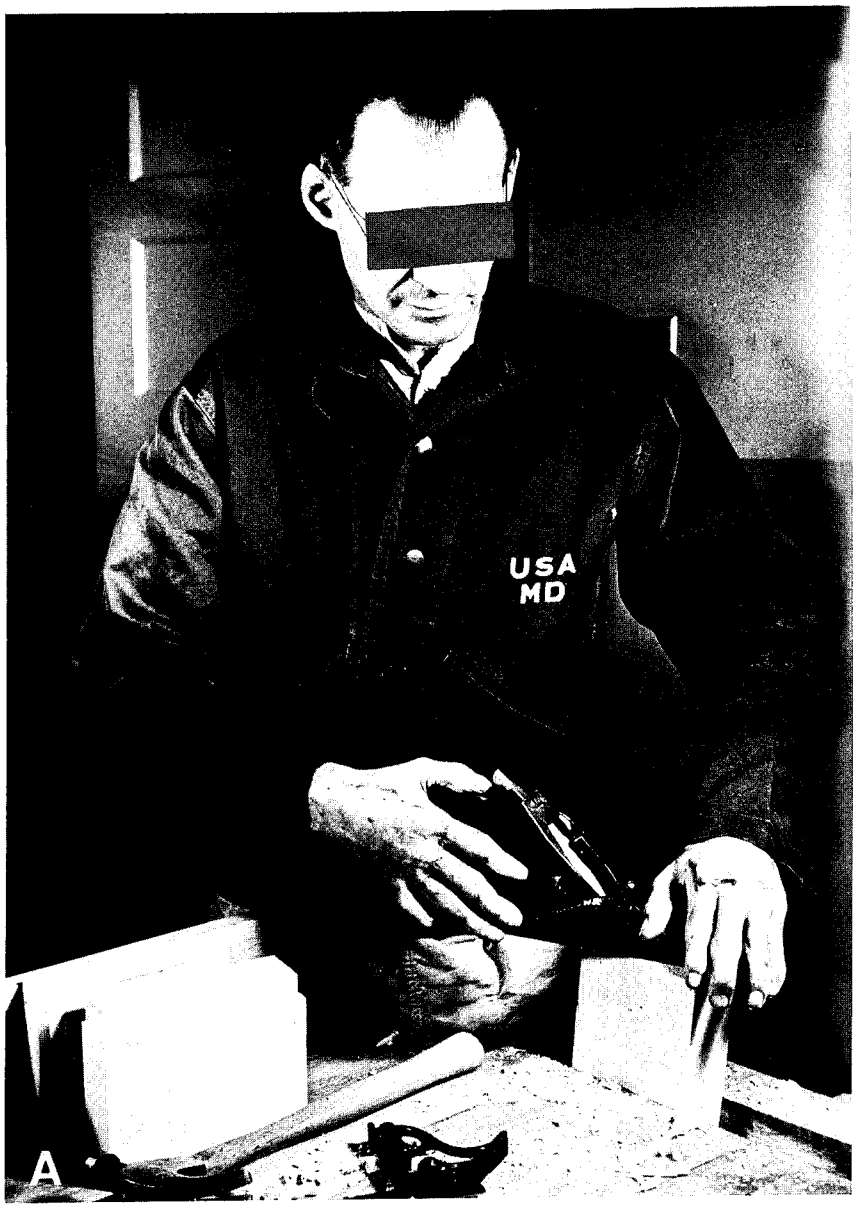


FIGURE 84—Occupational therapy following plastic surgery. A. Woodworking. Bilateral activity needed to regain flexion in hands and fingers following application of skin grafts to dorsal surfaces.

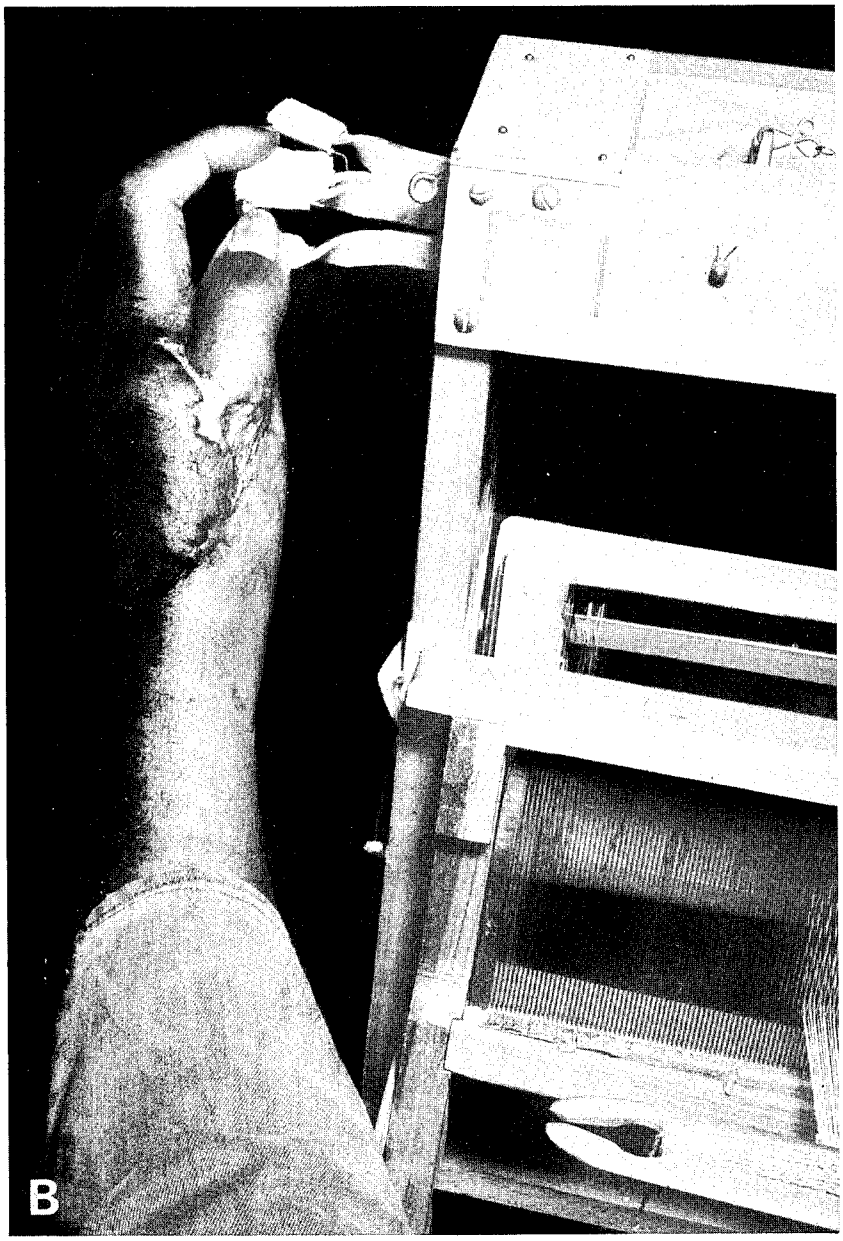


FIGURE 84—Continued. B. Weaving is used to regain motion and strength in hands and fingers.



FIGURE 84—Continued. C. Clay modeling. Before further surgery on the thumb, patient maintains motion and strength in unaffected joints.



FIGURE 84—Continued. D. Lapidary. Partial amputation of thumb and fingers necessitates activity to increase motion, strength, dexterity, and coordination in the remaining digital portions.

tients at Newton D. Baker General Hospital, Martinsburg, W. Va., was described as follows:

> Two full-time therapists are assigned to this service [the functional physical program]. All pertinent ward rounds are attended by one therapist. Patients upon referral to occupational therapy are given an initial interview when a joint or muscle test is made and a regular appointment time is given. Treatment is on an individual basis and periodic muscle and joint tests are made. The functional equipment included approximately 200 specially constructed wood tool handles, a treadle lathe, a treadle jigsaw, three bicycle saws with attachments, an adapted loom with special handles and weight attachments, three hand lever printing presses with special handles and weight attachments.[27]

With facilities such as those existing at Newton D. Baker General Hospital, a diversified program centered around the individual patient could be developed. As progress was made, the complexity or difficulty of the task could be increased. Here, as in other Army hospitals, a real attempt was also made to facilitate communication between occupational therapists and medical staff, in order that a total program could be designed to meet the individual needs of each patient.

Poliomyelitis

Army and Navy General Hospital, Hot Springs, Ark., was designated as the Army center for treatment of poliomyelitis. The average wartime census of poliomyelitis patients at this hospital was in excess of 80. These patients were generally assigned to occupational therapy as part of the reconditioning process. The therapeutic program sought to improve muscle coordination and develop strength through interest motivating and graded activities selected in accordance with individual patient needs.[28] Frequently, it was necessary to start these patients in supportive (sling-type) apparatus as muscle strength was inadequate to permit function against gravity (fig. 85).

Use was also made of industrial therapy. In selecting an assignment, the patient's interests and physical condition were the determining factors. In a case study reported by Army and Navy General Hospital, the objectives of industrial therapy listed were:

1. To hasten maximum recovery.
2. To combat hospitalization fatigue.
3. To develop initiative.
4. To gain confidence in self and ability.
5. To overcome weakness of left leg, back, and arms by exercise.

This program was often used in countering a reluctance to participate in more conventional therapeutic activities, but its success was dependent upon appropriate selection of the assignment and adequate job supervision as well as upon an accepting attitude of the patient.

[27] History of Occupational Therapy Department at Newton D. Baker General Hospital, 1945, p. 3.

[28] Treatment doctrine was outlined in Circular Letter No. 175, Office of The Surgeon General, 20 October 1943.

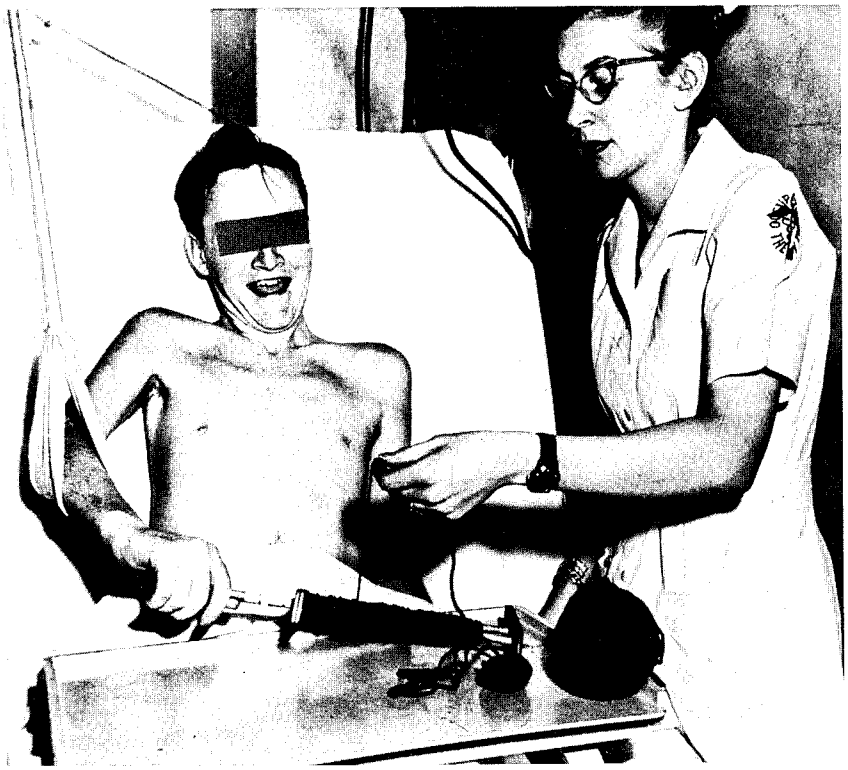


FIGURE 85—Patient with poliomyelitis works to regain coordination and strength.

Rehabilitation for the newly blinded

"It was the determination of President Roosevelt * * * that no blinded servicemen of World War II would be returned to their homes without adequate training to meet the problems * * * imposed upon them by their blindness." [29] This statement indicates the general approach of the U.S. Army during World War II to the solution of the problem of war-caused blindness of its personnel. It was also an indication of the extensive program which was to be carried out.

During the war, two hospitals were designated as specialty centers for treatment of the newly blinded: Valley Forge General Hospital, Phoenixville, Pa., and Dibble General Hospital, Menlo Park, Calif. In both of these, extensive occupational therapy programs were organized. Although the total number of patients treated was comparatively small, it represented a large percentage of those newly blinded who arrived at these centers. In these hospitals, occupational therapy, medically prescribed, was given as both a bedside and a workshop program. Both

[29] History of Old Farms Convalescent Hospital, Avon, Conn., 1947, p. 1.

Valley Forge and Dibble General Hospitals secured adequate facilities and staff following the usual initial shortages.

The overall objective of the rehabilitation of the blind was stated, as follows: [30]

> Rehabilitation of the blind entails an educational and therapeutic service employing recognized approved techniques and methods to enable and encourage each individual to develop an emotional and practical adjustment to his handicap so that he returns to society willing and able as possible to live and thrive in it as a contributing citizen of the community.

Bedside activities of the usual scope and variety were offered. The purpose of these activities was twofold. Often started immediately upon arrival of the patient at the hospital, the first purpose was to provide some activity which would aid in passing time during the initial period of restricted activity. The second, and more important purpose, was aiding the patient to develop or improve his manual dexterity through activities requiring the use of fingers and hands. A further value was realized in convincing the patient of his ability to continue to perform various tasks for which he might previously have considered sight a necessity. This tended to have a favorable effect on patient morale.

The workshop program offered many of the same skills utilized in the bedside program but also provided a wider variety of activities (plastics, woodworking, radio repairing) because of the more elaborate facilities available in the shop areas.

For some of the blind patients, their stay was primarily a transitory period between initial hospitalization and subsequent assignment to the Old Farms Convalescent Hospital for final rehabilitation.[31] At the convalescent hospital, they were taught those skills needed to carry on a normal life and simultaneously acquired the confidence with which to do so. An elaborate orientation and re-education program was developed to speed the adjustment of the patient to his new role in society. The average stay at the hospital was 3 to 4 months.

Upon arrival, each patient was assigned a counselor and given a series of psychological tests. Following these tests and an orientation period, patients were assigned to other areas. These assignments were made at a staff conference attended by heads of departments and the majority of patients were referred at that time to occupational therapy.

In planning activities for the blind patient, occupational therapists concentrated on those which would develop sense of touch, tactual perception, spatial relations, finger dexterity, and ability to follow and retain verbal directions. The usual range of activities was employed although several were particularly adaptable for use by the blind.

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[30] Annual Report, Valley Forge General Hospital, 1944, pp. 11–12.

[31] (1) Medical Department, United States Army. Surgery in World War II. Ophthalmology and Otolaryngology. Washington: U.S. Government Printing Office, 1957, pp. 188–209. (2) The assignment of civilian occupational therapists to Old Farms Convalescent Hospital is not indicated in the above reference. Official records of the American Occupational Therapy Association indicate three occupational therapists assigned in 1945 and five in 1946 and 1947. (Occupational Therapy Yearbooks 1945, 1946, and 1947.)

Leatherwork utilized different types of lacing for various stages of dexterity; weaving progressed from gross to fine thread as well as in the motions required by the size of looms and from simple to complex in pattern which was braille type (made by map tacks on a strip of cardboard); metalwork included the forming of bowls on sandbags, carving of half-round silver bracelets using jigs as a guide, filing and bending twisted wire, and when very fine work was indicated, the construction of coil wire jewelry.

Occupational therapy was extended, where necessary, to training in activities of daily living, including eating, dressing, shaving, handling money, and using dial telephones and the braille watch. Performance factors observed in occupational therapy were often helpful in vocational appraisal, and further training in occupational therapy was used in developing additional skill in areas where vocational plans had already been made.

Spinal cord injuries

Twenty general hospitals were designated specialty centers for the care and treatment of spinal cord injuries among World War II patients.[32] The purpose of the rehabilitation program, as stated in May 1945, was as follows:

> Rehabilitation can and must establish a wheelchair life for the majority and walking with the aid of braces or crutches for many. Self-support at a sedentary occupation is the ultimate objective.
>
> * * * * * * *
>
> The observed progress of a fellow casualty is a powerful stimulus to continued cooperation in a long and arduous program of rehabilitation. Group care facilitates the recognition of common difficulties and methods of adaptation from patient to patient. Group care encourages group instruction, collective occupational therapy, and the institution of training * * * for self-support in sedentary jobs.[33]

Special emphasis was placed on adequate care and treatment for these patients.[34]

> No type of patient is more in need of a coordinated reconditioning program than the paraplegic. * * * The physical factors inherent in the proper care of these patients demand special facilities, equipment, and trained personnel. * * * The reconditioning of paraplegics resolves itself into a coordination of all the various professional and auxiliary services that the hospital has available.
>
> * * * * * * *
>
> Paraplegic patients are primarily surgical service responsibility, requiring daily and constant medical, surgical, and nursing care, special exercise for the maintenance of residual muscle power, and ambulation. They are furthermore subject to "setbacks" and complications during their long period of convalescence. Little time is available daily for active physical, educational, or prevocational activities until they become ambulatory or wheelchair patients, and therefore during the bed treatment stage, bed exercise, individual counseling and guidance, and occupational therapy represent all of the reconditioning applicable, and then only on the prescription of the ward surgeon.

[32] See footnote 23, p. 312.
[33] War Department Technical Bulletin (TB MED) 162, May 1945.
[34] Army Service Forces Circular No. 440, 10 Dec. 1945.

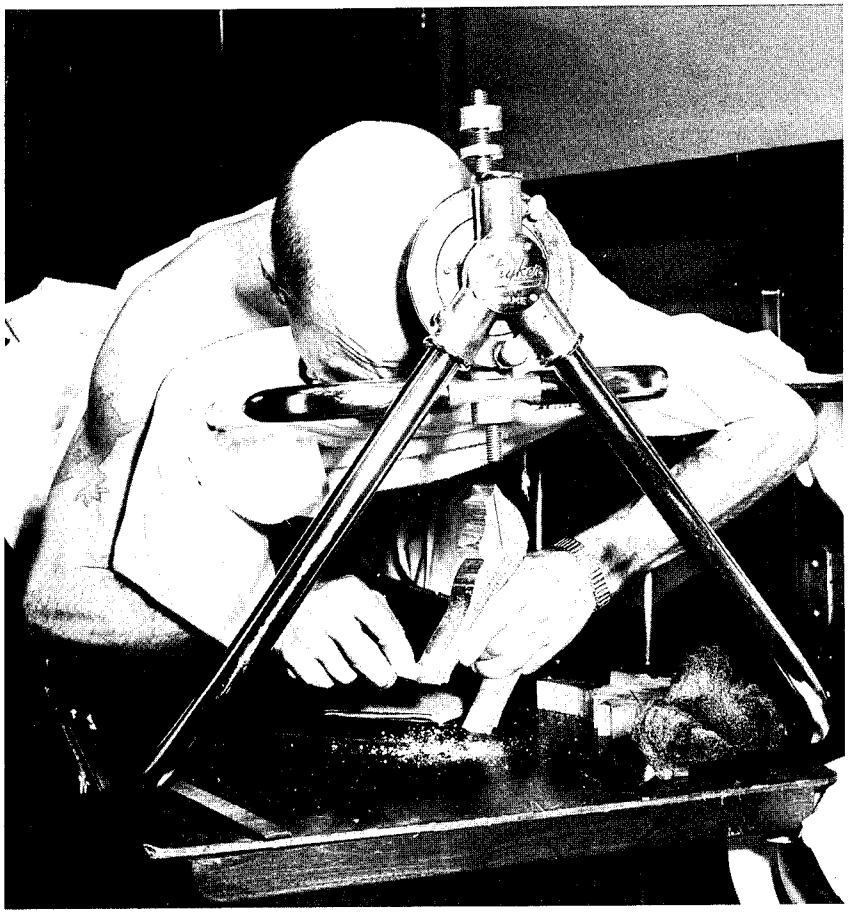


FIGURE 86—Patient on Stryker frame works with plastic project to maintain functional use of upper extremities.

Occupational therapy for the bed patient had several aims. Among these were restoration of self-confidence, development of regular work habits, creation of a sense of independence, the development of hobby interests, maintenance of muscle tone and strength, and functional use of the upper extremities (fig. 86). In developing a program for these patients, psychological and morale factors were of paramount importance. These patients had been more severely traumatized than any other group. Completely independent before their injury, they were now almost totally dependent on others.

Activities ran the gamut of creative and manual skills and were often provided by members of the Red Cross Arts and Skills Corps under the general supervision of occupational therapy. Projects easily completed were best received at the start of the program, but as interest

increased, projects graded in complexity of task, motion, and strength requirements were provided.

The aims of occupational therapy for ambulatory patients were expanded to include the opportunity to explore vocational possibilities and the encouragement of avocational interests. For these patients, greater emphasis was placed on increasing independence and on the range of activities available.

It was necessary to observe several precautions in working with the paraplegic patient. These included avoidance of discouragement, fatigue, discomfort, and increase of symptoms. As the patient improved, care was taken to avoid the development of false hopes concerning full recovery.

Thoracic disorders

The official Medical Department policy on occupational therapy for thoracic disorders was as follows: [35]

> Treatment. The principle of occupational therapy for thoracic disorders is graded activity.
>
> (1) Activity without increase of respiration. *Example:* Manual activity that does not involve shoulder motion, such as fly tying.
>
> (2) Activity with increase of respiration. *Example:* Arm and leg activity that necessitates wide range of motion, such as the bicycle saw.
>
> (3) Activity to increase muscle power and range of joint motion in secondarily involved areas. *Example:* Use of shoulder girdle against resistance, as in gardening.
>
> Special precautions. (1) Particular attention should be paid to temperature, fatigue, drainage, and presence of substances irritable to the respiratory tract.
>
> (2) Where joint limitations and muscle weakness occur, precautions as indicated [for these conditions] will apply.

As indicated by the foregoing doctrine, the first stage of treatment was often on the wards. Although diversional in nature, activities at this stage served as the first step for developing a therapeutic program. Close supervision, including control of materials, was needed in order to be certain that the patient did not exceed his recommended workload. Progress from one stage of activity to the next was dependent on the individual case and varied from one condition to another.

At Moore General Hospital, Swannanoa, N.C., one of the Army's largest thoracic centers, the occupational therapy program for tuberculous patients was carried out without assistance from volunteer workers. This policy was instituted to allow for daily followups in activity that was found useful, and also, it was necessary to maintain isolation and other medical precautions on wards housing patients in active stages of the disease. These included the wearing of gown and mask while working and the requirement of chest X-rays at 3-month intervals.

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[35] See footnote 2, p. 287.

Graded activity was closely regulated and strict efforts were made to see that no patient worked for longer periods than indicated by his classification. In order to maintain interest among long-term patients, occupational therapists were rotated quarterly and more complicated programs (such as watch repairing) were instituted.

Miss Jessie Lambert, chief occupational therapist, Moore General Hospital, throughout the war years summarized the program for ambulatory patients, as follows: [36]

> The principles of occupational therapy as applied to the ambulatory patients centered around the continuance of graded activity in order to control fatigue, raise work tolerance, and provide greater opportunity for vocational exploration in the shops.

During the final stage of convalescence, a constant liaison was maintained between occupational therapy, the medical services, and other areas of the reconditioning program (fig. 87), in order to develop the regime best suited to the patient.

Tropical diseases

At the beginning of World War II, treatment of tropical diseases constituted a relatively unknown area of medicine in the United States. In order to conduct extensive research in all phases of this specialty, Moore General Hospital was designated as the Army's tropical disease center.

> Apathy, boredom, and anxiety were commonly found among the patients with tropical diseases. A comprehensive program of occupational therapy seemed indicated to combat these undesirable traits which develop during long periods of hospitalization. Constructive use of leisure time has long been considered a practical means of diverting a patient's mind from thoughts of illness and helps to prevent the growth of neurotic patterns. An extensive program was therefore devised for bed and ambulatory patients.[37]

Activities such as craftwork, printing, typing, radio repairing, and photography were used, as were industrial therapy assignments in many different hospital areas.

The patients most frequently referred to occupational therapy were those recuperating from malaria, filariasis, schistosomiasis, amebic dysentery, polyneuritis, tropical ulcers, lichen planus, and eczematoid dermatitis. Specific occupational therapy programs were devised for patients with each type of disease.

The malaria patient generally suffered no enduring physical disability. For this reason, no restrictions were placed on his participation in the occupational therapy program. Such patients were usually given industrial therapy assignments and encouraged to maintain good work habits and good body condition.

[36] Lambert, J. E.: Occupational Therapy in a Tuberculosis Program. Occup. Therapy 25: 178–179, October 1946.

[37] Bettinger, P.: Occupational Therapy in Tropical Medicine at Moore General Hospital, Swannanoa, N.C. Occup. Therapy 25: 174–175, October 1946.



FIGURE 87—Convalescent patient gaining experience in automotive mechanics, one of the vocationally oriented courses in the reconditioning program.

Occupational therapy for filariasis was designed primarily to provide a release of tensions created by anxiety over the nature of the disease. Following acute stages, the patient was usually able to participate in more active occupational therapy programs.

For schistosomiasis and amebic dysentery, occupational therapy was directed primarily toward the improvement of morale. Because of the fatigue and weakness usually affecting these patients, a graded activity program was provided. In a number of cases, special effort had to be made to interest patients in such a program.

Occupational therapy for polyneuritis was designed to accommodate two of the three successive stages of the disease. During the first stage, activities utilized were those which would assist in maintenance of muscle tone and strength. In the second or low-level stage where partial or complete paralysis might occur, only passive exercise of the extremities by the physical therapist was indicated. Finally, as voluntary contraction of muscles returned, occupational therapy was resumed in the form of activities progressively graded to improve coordination and develop strength. Since recovery was slow and fatigue common upon overexertion, close supervision of the activity of these patients was necessary at all times.

The treatment of lichen planus, eczematoid dermatitis, and tropical ulcers necessitated the avoidance of activities which involved the use of materials irritating to the skin. As these diseases often led to depression and antisocial behavior, special emphasis was placed on activity providing social contacts.

In her article on the Moore General Hospital program, Miss (later Maj.) Pauline Bettinger concluded:

> Upon analysis of the occupational therapy program for patients with tropical diseases, it will be noted that emphasis was not entirely on the diversional aspect. For this type of disability, the effect of construction activity had a measurable therapeutic value upon the morale of the patient. General physical condition of the patient was also noticeably improved through controlled activity in the acute stage and graded activity for the convalescent. Resocialization through group work and individual accomplishment improved mental attitudes. Finally, specific physical functional benefits were observed in conditions such as polyneuritis and schistosomiasis.

Industrial Therapy

Inconsistent use of the term "industrial therapy" has led to some confusion concerning its meaning. As used here, the term refers to work assignments made to various hospital departments and services for therapeutic purposes. Often confused with this was work therapy, which involved the employment of hospital patients on subcontract work projects for defense industries. Further, there was the 90-day work-furlough plan which allowed patients to live in their own homes for a 3-month period while employed by industrial concerns having Government contracts for the production of war material.

During World War II, industrial therapy, usually under the general supervision of an occupational therapist, was used as a prescribed treatment for medical, surgical, and neuropsychiatric patients.

The actual administration of the industrial therapy program involved four steps. First, the available hospital jobs were carefully evaluated by the occupational therapist in relation to mental and physical demands on the patient. Second, the pertinent data concerning the patient and his needs were compiled on a prescription form. Third, accurate assignment and attendance records were maintained on each patient. Finally, periodic progress reports submitted by work supervisors were evaluated by the occupational therapist and action taken for reassignment or counseling, if indicated.

In the treatment of neuropsychiatric patients, the aims of industrial therapy were fivefold—

1. Reduction of psychosomatic symptoms.

2. Development of ego strength and a feeling of self-sufficiency.

3. Encouragement of a feeling of usefulness and provision of the means from prevocational exploration.

4. Regaining of skill in performing work tasks and building security in a work situation.

5. Provision of a semisheltered opportunity for the improvement of social skills.

Industrial therapy programs for patients with physical injuries were maintained at a number of Army general hospitals. For this program, the job analyses determined what tasks would provide the best opportunities for the desired therapeutic effect. Job analyses done at Newton D. Baker General Hospital located the following opportunities for bed and wheelchair patients.[38]

Jobs for bed patients	
Public Relations Office:	Preparing radio scripts.
Post Treasurer:	Portable bookkeeping work.
Personal Affairs:	Clerical (copying records and typing).
Detachment of Patients:	Preparing envelopes for pay checks.
	Alphabetizing award lists.
Jobs for wheelchair patients	
Red Cross:	Poster work.
Library:	Charging out books, inventory, book repair.
Public Address System:	Announcer.
Post Theater:	Selling and collecting tickets.
Personnel Office:	Typing, filing, and other clerical routines.
Post Treasurer:	Bookkeeping and accounting.
Post Office:	Forwarding, directory, files, and clerical work.
Medical Supply:	Repairing surgical instruments.
Finance and Fiscal:	Typing war bonds.

[38] Knickerbocker, Barbara M.: Industrial Therapy Notebook, 18 Nov. 1945, pp. 31–33.

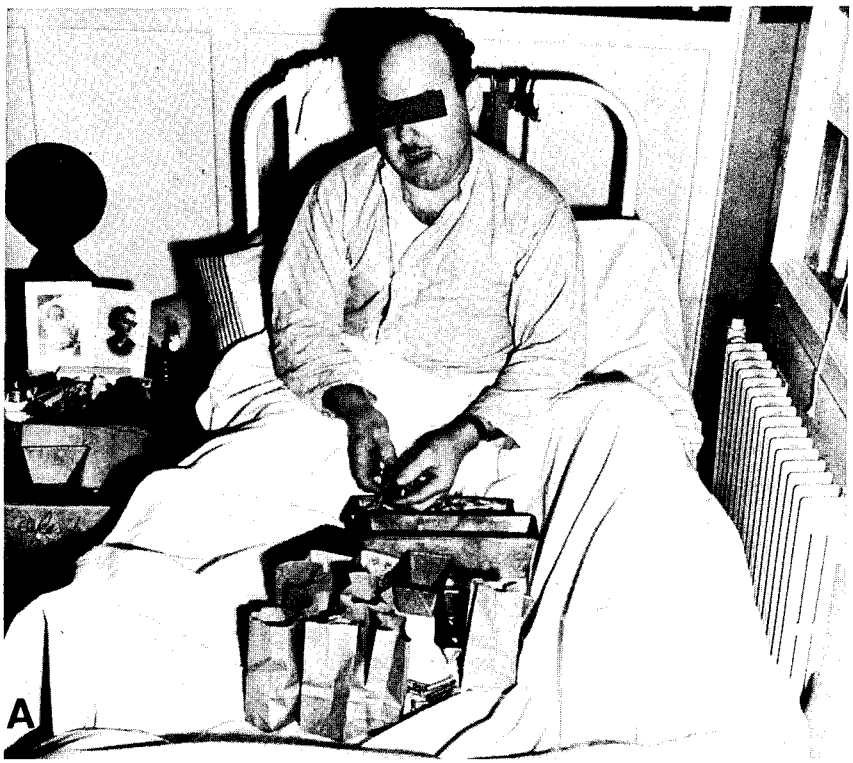


FIGURE 88—Work therapy program, Birmingham General Hospital, Van Nuys, Calif. A. Bed patient works on parts assembly.

Additional jobs were analyzed with reference to their therapeutic value for specific injuries and assignments made accordingly. The potential work opportunities were virtually unlimited and, in addition to the specific examples just enumerated, included a broad range of possibilities in the professional, maintenance, supply, and entertainment services of the installation. Efforts were made to encourage responsibility by liberalizing pass procedures and by requiring work uniforms rather than the normal hospital attire. Both policies tended to improve the mental attitude of the patient.

Work Therapy

Work therapy programs were carried on in at least six Army general hospitals during World War II. The work involved such tasks as assembling, packaging, inspection of parts, payroll management, recordkeeping, use of hand machine tools, sorting, folding, wrapping, and labeling. The program was used by both bed and ambulatory patients (fig. 88) and for both mental illness and physical injuries. Some of the

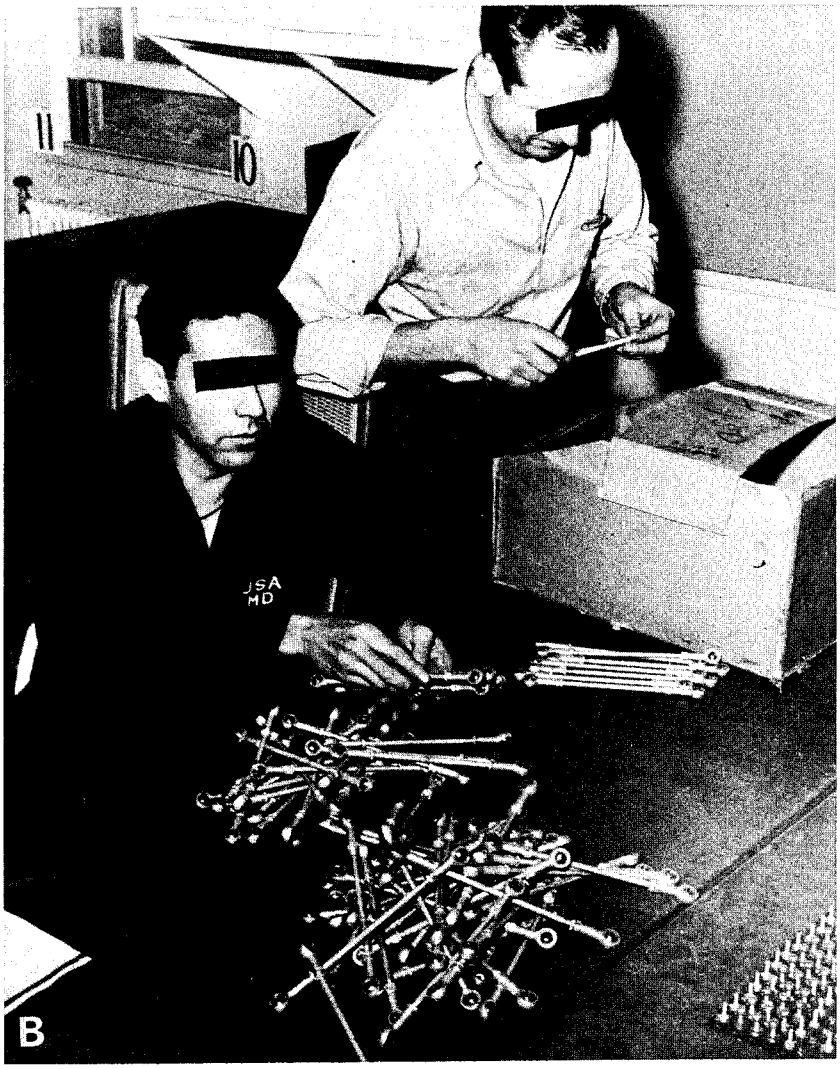


FIGURE 88—Continued. B. Wheelchair patient assists in checking parts for shipment.

companies which participated in this program were the Radio Corporation of America, Northrop Aircraft Corporation, Bell and Howell, Bendix Aviation, and Lamson and Sessions.

An indication of the relative merits of work therapy may be seen in the following extracts from evaluation of the programs.

Billings General Hospital, Fort Benjamin Harrison, Ind.: [39]

[39] Report on Industrial Therapy, Billings General Hospital, World War II.

All in all, the industrial program proved valuable as a diversional activity for many bed patients and some ambulatory patients as well as therapeutic for others.

Crile General Hospital, Cleveland, Ohio: [40]

* * * a valuable adjunct to Reconditioning, * * * providing: *a.* Purposeful physical activity under the supervision of an occupational therapist. *b.* * * * reorientation of the mental patient to responsibility and group participation. *c.* Constructive use of leisure time, making patients more amenable to hospital treatment.

Percy Jones General Hospital, Battle Creek, Mich. (paraplegic patients only): [41]

From a medical standpoint the program was successful to the extent that it provided an activity for muscles not immobilized in this type of case. From a social standpoint the program was successful in proving to these patients that they were not useless and had a definite earning power. This factor was conducive to increased morale.

Work therapy programs were also carried out at Vaughan General Hospital and Gardiner General Hospital, Chicago, Ill. With careful job assignments and medically oriented administration, these programs provided therapeutic mental and physical effects. The later development of these explorations in factory-in-hospital programs, prevocational training, and preparation for employment of the handicapped within civilian industry would seem to confirm their value.

Ninety-Day Work Furlough

The 90-day work furlough was in use at Cushing General Hospital, Framingham, Mass., Crile General Hospital, Cleveland, Ohio, and Schick General Hospital, Clinton, Iowa. The purpose and rationale of the plan are described in description of the program at Cushing General Hospital: [42]

A work furlough is technically a convalescent furlough of 90 days' duration arranged so that the patient will gain the greatest possible benefit from exercising and using his injured extremity.

A work furlough creates a number of advantages for the patient in addition to a high degree of personal freedom. * * * It is to be granted only to those patients who, through their cooperation in the mobilization of their joints and in exercising their extremities, * * * have proven themselves worthy and reliable individuals.

A patient with a peripheral nerve or orthopedic injury was eligible for a work furlough provided his physical condition allowed him to perform necessary tasks and his treatment required a long period of convalescence. Work furloughs were also granted to individuals who had sustained nerve injuries which did not require surgery or which would not require it for 3 months.

Processing patients for a work furlough was an important part of the plan. Help in securing work was given by the U.S. Employment Service.

[40] Report on Industrial Therapy, Crile General Hospital, World War II.
[41] Report on Industrial Therapy, Percy Jones General Hospital, World War II, 17 Oct. 1945.
[42] Report on 90-Day Work Furlough, Cushing General Hospital, World War II.

The patient was rated as to his physical capacity for performing specific tasks, and it was necessary for him to secure a job before being given a work furlough. The industry for which the patient worked had to be handling war contracts for the armed services, and the employer was requested to certify that the nature of the job to which the patient was assigned would enable him to exercise his injured extremity. This plan was extended only if the condition of the patient indicated the advisability of such an assignment.

The advantages of the work furlough program as given in the Cushing General Hospital report are as follows:

> Recovery from peripheral nerve injuries, spontaneous or following operative treatment is a slow process. There is no rationale in having these patients sitting about a hospital occupying much needed beds and becoming "barrack happy" during the 6 to 18 months until they * * * have attained the maximum hospital benefits which are required * * *.
>
> There is no substitute for a well-paid job as an incentive for exercising an injured extremity. * * * The same patient is more than willing to work and to exercise his arm or leg 10 hours a day if paid 8 hours straight time and time and one-half for 2 hours overtime daily.

Furthermore, the patient was able to live with his family and become adjusted to his physical condition in a sheltered and supportive environment. At the plant, he competed with noninjured individuals and was shown that his injury would not seriously handicap him in the process of earning a living. Aside from the physical aspect of the therapy, there thus was also a psychological benefit which had a value of its own.

COMMUNICATIONS ZONE

Personnel shortages and Medical Department policy necessarily precluded the assignment of occupational therapists to hospitals in the Communications Zone. Thus, although some hospitals secured the services of qualified occupational therapists living nearby who were available for work, there were no occupational therapy departments specifically established by the Surgeon General's Office in the Communications Zone during the war years. There were a number of instances, however, where excellent programs of occupational therapy were developed.

A distinction should be made here between occupational therapy and the more common activity programs found in the Communications Zone. Occupational therapy was conceived as a therapeutic program conducted under medical supervision by specially trained personnel and designed to provide, through the utilization of specific tasks of a productive nature, the desired physical or psychological activity needed in each instance. Activity programs, though valuable in their own right, provided primarily diversional activity in order to allow the patient to better adjust to his period of hospitalization. Because of the lack of properly trained personnel, there was little attempt to develop a therapeutic aspect in these programs.

The philosophy of the activity program might well be summed up by an excerpt: [43] "The object of the program is to achieve the desired rehabilitation by keeping both officers and men as pleasantly occupied as possible and thus make them feel that they are an integral part of the program."

Probably the best picture of both occupational therapy and activity programs conducted in Communications Zone hospitals can be provided through the presentation of several examples.

In the Neuropsychiatric Section, 9th General Hospital, Southwest Pacific Area, a type of occupational therapy was carried out by enlisted personnel trained by the chief of neuropsychiatry. Since these were neuropsychiatric patients, the main emphasis was on involvement and participation in normal activity.

At the 22d Station Hospital, Pacific Ocean Areas, in lieu of appointing an occupational therapy officer, direction of the program was assumed by the commanding officer. Craft instruction was provided by a Red Cross recreational worker and a noncommissioned officer with experience in carpentry.[44] An extensive shop program was developed and some patients were assigned hospital tasks. Although the latter had all the outward appearance of industrial therapy, the actual assignment of patients to hospital jobs was not primarily designed for therapeutic value. The occupational therapy facilities operated by the 22d Station Hospital had been developed by a registered occupational therapist while the 204th General Hospital occupied the location.[45]

At the 4th General Hospital, Southwest Pacific Area, an activity program for neuropsychiatric patients was conducted by an Army nurse.[46] It was, or so it appears from the annual reports, primarily a craft program. Some consideration was given to the needs of the individual patient, although shortage of personnel made even this difficult.

At the 51st General Hospital, Southwest Pacific Area, occupational therapy was described, as follows: [47]

> The craft work conducted by the Convalescent Training Program was primarily diversional rather than functional. A completely equipped craft shop provided facilities for art and hobby work of all kinds. Tools and materials for wood, leather, and metal work were available and were used regularly by convalescents and other patients as well. Many attractive and useful items were made for their own use or to send home. Projects ranged from solid metal B–29 models to leather wallets. The creative talent of the patient was given full play and a qualified instructor gave him such guidance and instruction as was needed. In addition to this activity, the Convalescent Training Program provided a crafts instructor for the Occupational Therapy Department of the Neuropsychiatric Section. This department was functional in nature and was more extensively equipped than the CTP craft shop and was under the supervision of a nurse trained in occupational therapy.

[43] History of Convalescent Reconditioning at the 9th General Hospital, Neuropsychiatric Section, 10 July 1945.
[44] Report of Occupational Therapy Facilities, 22d Station Hospital, 15 Feb. 1945.
[45] Essential Technical Medical Data, Central Pacific Base Command, U.S. Army, for February 1945, dated 3 Mar. 1945, p. 3.
[46] Annual Report, Fourth General Hospital, 7 Jan. 1944.
[47] History of Convalescent Reconditioning at the 51st General Hospital, 10 July 1945, pp. 7–8.

In many hospitals, not even specially trained nurses, enlisted men or Red Cross personnel were available to conduct activity programs. In these cases, it devolved upon the individual medical officer to utilize such personnel and material resources as he could recruit to treat his patients (fig. 89). The following extract is from an account of how and why one medical officer attempted to make occupational therapy available to neuropsychiatric patients in the Southwest Pacific Area.[48]

> What happens to the people of a country like the United States when they get called to fight in an Army that has been hamstrung, held-down, under-trained, poorly supplied, and ill-equipped because the people of the United States lacked the foresight and the backbone to see what was coming and back up the President when he tried to do something about it? Well, they get drafted awfully fast, they don't get much training, and they go overseas fast as hell because if they didn't there wouldn't be anybody at all to handle the military situations. * * * That's why trained machinists, concert pianists, great authors, skilled chemists, university professors, and thousands of other specialists end up in the infantry carrying a gun instead of in a job suited to their qualifications.
>
> * * * * * * *
>
> And here's what happened. A good many of those men cracked up—they got so they couldn't stand the sound of an air raid siren, and they crawled under the bed screaming when the ack-ack started, and they got so tremulous they couldn't write. They became so irritable you couldn't live with them; they got recurrent, persistent headaches, dizzy spells, low back pain, functional nausea and vomiting, anxiety neuroses, full-blown conversion hysteria, and every other symptom and sign of an insoluble, unconscious, unbearable mental conflict that you can think of.
>
> * * * * * * *
>
> In 1942, when the Surgeon General's Office compiled their statistics—the rate for mental disability * * * led the list among all medical causes for discharge from the Army—I think the figure was 40 percent or over. That's too high, and the Generals said something must be done. So they sent Lt. Col. S. Alan Challman to the SWPA as Consultant in Neuropsychiatry to the Chief Surgeon, Hq. USASOS, APO 501.
>
> * * * * * * *
>
> * * * the Colonel decided that men with mental disabilities could be better treated, better diagnosed, and more of them sent back to duty of one sort or another if they were sent to specialized, neuropsychiatric hospitals, where the professional staff from the C.O. on down consisted of men with psychiatric experience. * * * He also decided that it would be a good idea if the patients in these hospitals had a little something to do, to keep from lying in bed all day and thinking about their symptoms, and to give them a chance to do something useful. * * * So he arranged for those hospitals to have a little extra equipment—some picks and shovels, rakes and hoes, and some seeds—so they could plant a garden and get some fresh vegetables to eat; and some hammers, saws, and planes so they could build a few trinkets, or maybe even some furniture the hospital could use. In November 1943, he told me that he wanted me to plan and direct such an Occupational Therapy program in one of the Neuropsychiatric Hospitals he was then in the process of organizing.
>
> So I did, and I've learned an awful lot in the process * * *. I learned that it was hard to convince the average psychiatrist that Occupational Therapy was anything more than basket weaving. And I learned that it was hard to get the patients interested. They liked to play baseball, but they didn't think much

[48] Extract, personal letter, Capt. Charles E. Test, MC, 126th Station Hospital, 7 Oct. 1944. (Recipient unknown.)

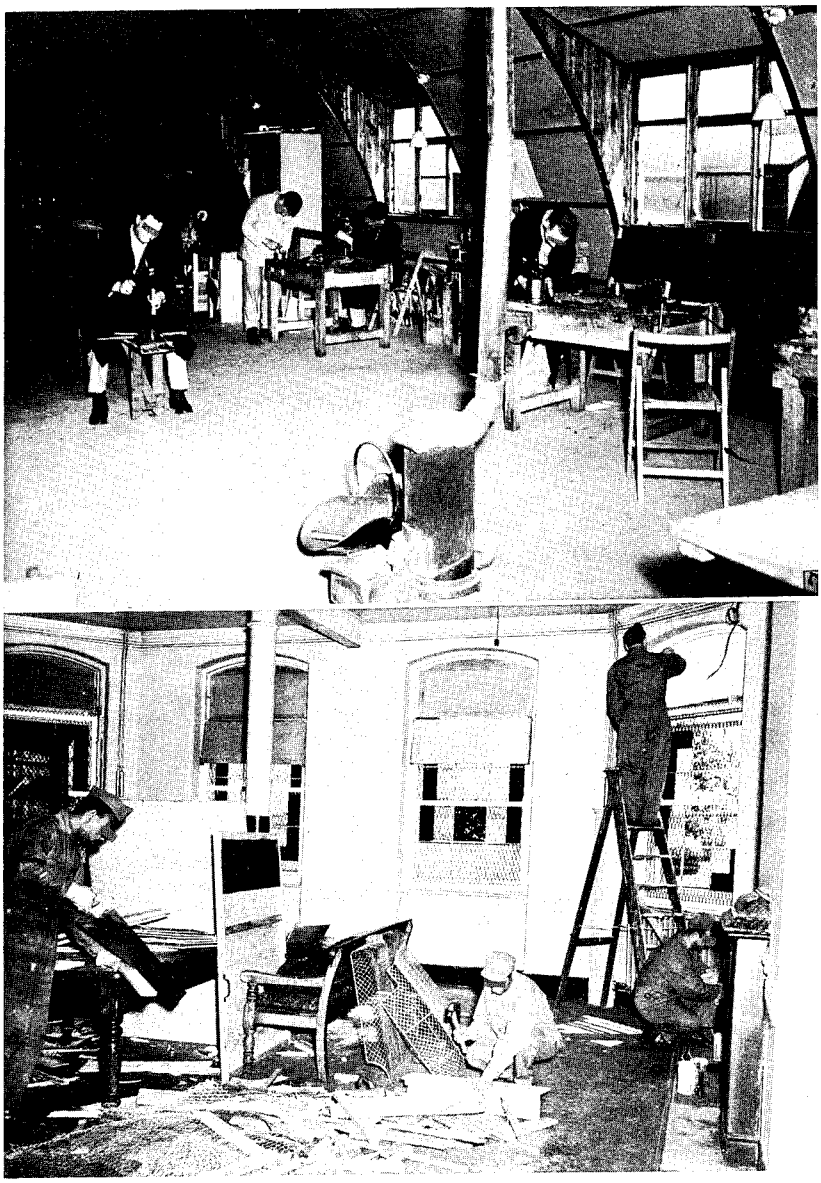


FIGURE 89—Activity programs for convalescent patients, Communications Zone. (Top) Craft program in nissen hut, 2d General Hospital, Oxon, England. (Bottom) Neuropsychiatric patients repair day room, Station Hospital, Devon, England.

of digging in the garden, and at first they didn't think much of doing any work in the carpenter shop, until they learned that the only way they could avoid having to keep all their toilet articles on the ground was to go down to the shop and build themselves a bedside table.

I began to get some results too. One or two patients who had been given up for lost by the ward officer made apparently complete recoveries when they found something * * * suited to their abilities * * * and in the process managed to forget their troubles for a little while. As Karl Menninger puts it, they learned how to *play*.

Why do they like it, and how does it work? How does rebuilding a truck, running a sawmill, making a bedside table, draughting a plan for our proposed 100 student classroom and library building, planting a garden, playing baseball, constructing a 99 x 20 foot building for a machine shop—help to rehabilitate a soldier who is a nervous wreck and who couldn't do any kind of work in his outfit?

Well, it isn't work to them—it's play. I keep it on that basis. They work on their own time, voluntarily, and when they get tired, or want to go out and play baseball all afternoon, they can. All the pressure and strain of ordinary military duty are eliminated. And they can do the kind of work they like best. I think they get a sense of security, of safety, of protection, from working at the same old stuff they did in civil life. Secondly, they accomplish something—they construct something—something practical and useful * * *. They can work off some of their neurotic tension through productive activity.

* * * I think that probably the biggest reason why such a rehabilitation program works is that most of our soldier mental patients aren't as sick as we used to think they were. Their illness is due more to situational factors than to unconscious emotional conflicts. They don't need deep or drastic psychotherapy—all they need is a chance to relax, a little understanding of their problems, something to get interested in, a goal they can reach, and a chance to start over again—a fresh start in a new job, either in or out of the Army.

Occupational therapists were available in very limited numbers in two areas of the Communications Zone. In the Africa-Middle East Theater of Operations, the program at the 38th General Hospital was described as follows: [49]

* * * The Occupational Therapy Department works closely with the reconditioning officer and patients are referred there by the ward officers. Occupational Therapy is directed by a professional occupational therapist and the activities offered include leather, metal, glass, and wood work, as well as arts and crafts of all kinds.

In the territory of Hawaii, a number of registered occupational therapists were available for employment. Tripler General, North Sector General, and the 26th Station Hospitals had programs conducted by qualified occupational therapists.[50] The program at Tripler General Hospital included surgical, orthopedic, and neuropsychiatric services (fig. 90 A). At the 147th General Hospital, programs for general medical patients were included. At North Sector General Hospital, only neuropsy-

[49] Letter, Margaret Conant, Acting Supervisor of Occupational Therapy, to Miss Mary Rose Ryan, Assistant to National Director, Military and Naval Welfare Service, American Red Cross, Washington, D.C., 5 July 1945, p. 3.

[50] (1) Report of Occupational Therapy Facilities, Tripler General Hospital, 14 Feb. 1945. (2) Report of Occupational Therapy Facilities, 147th General Hospital, 13 Feb. 1945. (3) Report on Occupational Therapy Activities, North Sector General Hospital, 15 Feb. 1945. (4) Annual Report, 26th Station Hospital, 1946, pp. 48–49.



FIGURE 90—Occupational therapy, Communications Zone. A. Woodworking shop, Tripler General Hospital, Oahu, Hawaii, 1944.

chiatric and orthopedic patients were treated. At the 26th Station Hospital, treatment programs were conducted for patients from all of the different hospital services.

Initiated in 1946, one of the most successful programs utilizing occupational therapists in a Communications Zone was the Philippine Amputation and Prosthetic Unit (9940th Technical Service Unit, Surgeon General's Office), whose purpose was to train Filipinos in construction of prosthetics and treatment of amputees. Two Medical Department occupational therapists, Miss (later Capt.) Mary K. Berteling and Miss (later Maj.) Elizabeth M. Nachod, were assigned to the unit (fig. 90 B). A description of the facilities and program follows: [51]

> The unit was located in the Mandaluyong hospital center five or six miles outside of Manila adjacent to the 1st Philippine Army General Hospital where most of the amputee patients were hospitalized. * * * The buildings were constructed of corrugated metal and were nine in number. * * * the smaller buildings [housed] the supply rooms, occupational, and physical therapy.
>
> * * * * * * *
>
> The first patient to be fitted with an arm was a former captain in the Philippine Army * * *. Because of the country and the habits of the people of that country were entirely new to the therapists * * * there would have to be some changes made in the types of achievements to be attained by the patient

[51] Nachod, E.: Occupational Therapy With Filipino Amputees. Am. J. Occup. Therapy 1: 92–95, April 1947.



FIGURE 90—Continued. B. Occupational therapists, Philippine Amputation and Prosthetic Unit, 1946. Left to right: Elizabeth M. Nachod, Filipino patient, and Mary K. Berteling.

from the types of achievements used in the States, so that they would fit into the mode of living of the Filipino. The captain * * * was able to make a few helpful suggestions as to what might be superfluous and what might be added.

* * * * * * *

There was, of course, a language difficulty between patient and therapist. * * * Photographs were an excellent medium for explaining the purpose of the program to these patients * * *.

* * * * * * *

The program was carried on in much the same way as it was in the States. Patients reported to the shop whether or not they had been fitted with a prosthesis. Pre-prosthetic treatment was emphasized but was found to be less valuable to the Filipino patient * * * due to the fact that most of them had received their injuries [years ago] * * *. To summarize treatment of the Filipino pre-prosthetic patient, it can be said that the benefits were principally diversional with a gratifying psychological response from many of them.

* * * Manual labor using woodworking tools, garden tools, lifting heavy objects, etc., was stressed for most patients * * *. Craft activities were continued after the patient received his prosthesis as an aid to increase the patient's skill.

After the program for the arm amputees was running smoothly, one for the leg amputees was started. The purpose of occupational therapy for these patients was to give them an additional activity such as operating the bicycle jib saw, treadle sander or loom, to help increase skill in the use of the prosthesis.

During the time the two occupational therapists were assigned to the unit, they trained two Filipinos in the occupational therapy amputation program.

That a need existed for occupational therapy and activity programs in the Communications Zone is well illustrated by reports from the hand centers in the European Theater of Operations, U.S. Army.[52] Conclusions drawn on the specialized care of hand injuries included:

Physical and occupational therapy, which are of paramount importance in the treatment and rehabilitation of injured hands, should be on or near the wards set aside for a hand center.

* * * * * * *

Hand centers should be as near the front as circumstances will permit and evacuation of the wounded to them should be accomplished within 2 to 3 days after wounding.

[52] Seventeen hospitals were designated for the specialized treatment of hand injuries in the European Theater of Operations. Of these, 10 were in the United Kingdom and 7 were on the Continent. (See footnote 13, p. 300.)

Part III

THE ADMINISTRATION OF THE CORPS

CHAPTER X

The Early Years of the Corps, April 1947 to June 1950

Colonel Emma E. Vogel, USA (Ret.),
Lieutenant Colonel Edna Lura, USA (Ret.), and
Major Helen B. Gearin, USA (Ret.)

The Women's Medical Specialist Corps as established by Public Law 36, 80th Congress, consisted of three sections: dietitian, physical therapist, and occupational therapist. The authorized strength of the corps was determined to be in the ratio of nine-tenths of a member for every 1,000 members of the total authorized strength of the Regular Army, but not less than a minimum strength of 409 officers distributed by grade as follows: 24 in the permanent grade of major (8 for each section) and 385 in the permanent grades of captain to second lieutenant, inclusive. The distribution of officers comprising the corps was to be in accordance with the following ratio: Dietitian Section, 39 percent; Physical Therapist Section, 33 percent; and Occupational Therapist Section, 28 percent.[1]

The Secretary of War was empowered to appoint a chief of the corps with the rank of colonel while so serving and three assistant chiefs who would serve as chiefs of the sections of the corps in the grade of lieutenant colonel for the duration of their appointments.[2] These officers would serve at his pleasure for a term not to exceed 4 years and could not be reappointed. The officers who were recommended by The Surgeon General for these appointments were selected from among officers commissioned in the permanent grade of major in the Dietitian and Physical Therapist Sections and in the permanent grade of major or captain in the Occupational Therapist Section. The law also established, for the first time, a Women's Medical Specialist Corps Section in the Officers' Reserve Corps.

INTEGRATION PERIOD I

One of the first steps in implementation of Public Law 80–36 was integration into the Regular Army of interested, qualified individuals currently serving in the Medical Department. In anticipation of the passage of the law, preparation had long been in progress. In May 1946, selected dietitians, physical therapists, and occupational therapists

[1] Army Regulations No. 40–25, 22 Jan. 1948.
[2] (1) Public Law 36, 80th Congress, 1st Session, approved 16 Apr. 1947. (2) Public Law 155, 85th Congress, 1st Session, approved 21 Aug. 1957, gave The Surgeon General the authority to appoint the three assistant chiefs of the corps. The authority to appoint the chief of the corps remained with the Secretary of the Army.

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were assigned to the Personnel Research Board, Adjutant General's Office, to develop professional competency tests to be used with other tests formulated by The Adjutant General. By the time the law was passed, on 16 April 1947, preparation was completed. Screening boards to interview and evaluate the applicants were established in nine general hospitals in the United States and in certain hospitals in each of the oversea commands.

In June 1947, the Military Personnel Procurement Division, Adjutant General's Office, arranged a 3-day conference in the Pentagon, Washington, D.C., to orient the key members of these screening boards to the procedures to be used in the integration process. At this conference,[3] Brig. Gen. (later Maj. Gen.) George E. Armstrong, Deputy Surgeon General, gave a talk in which he stated that—

> Public Law 36 established the Army Nurse Corps and Women's Medical Specialist Corps in the Regular Army and provides Regular Army commissioned status * * * in these respective Corps, which had long been the desire of the Medical Department.
>
> * * * the establishment, by public law, of these two new Corps in the Regular Army marks our first complete step in the reorganization and revitalization of the Medical Department.

He also emphasized that the mission of the Regular Army Medical Department was not only to provide care for the sick and injured of the peacetime Army, but more important, to maintain a highly qualified cadre which, in the event of a national emergency, could quickly expand.

The general provisions governing eligibility for integration into the Women's Medical Specialist Corps were as follows: [4]

1. Applicant must be a female citizen of the United States who had attained the age of 21 years, but not attained the age of 45 years on the date of appointment. (The upper-age limitation was waived by the Secretary of War upon the recommendation of The Surgeon General in order to accomplish the appointment of key dietitians and physical therapists whose knowledge and experience were considered essential in the establishment of this new corps.)
2. Applicant must be in an unmarried status with no dependents under the age of 14 years.
3. Applicant must be physically qualified at the time of appointment in accordance with Army requirements.
4. Applicant must have served honorably as a dietitian, physical therapist, or occupational therapist with the Army subsequent to 7 December 1941.
5. Dietitians and physical therapists could not be appointed in a grade higher than that held while on active duty in the Army of the United States or higher than that grade to which they might be promoted prior to acceptance of Regular Army commissions.

All appointments in the Regular Army Women's Medical Special-

[3] Information Folder, Army Nurse Corps and Women's Medical Specialist Corps, Regular Army Integration Program under the provision of Public Law 36, 80th Congress, 1947.
[4] War Department Circular No. 113, 3 May 1947.

ist Corps were to be accomplished 1 year after the passage of Public Law 80–36. The integration program progressed slowly. Consequently, on 25 July 1947, The Adjutant General announced the extension of the deadline date to 30 November for the submission of application.[5] The first applications did not reach the Surgeon General's Office until August 1947 and the first appointments were not made until October 1947.

The number of applications for appointment was disappointing. Approximately 3,200 dietitians and physical therapists had been commissioned in the Army of the United States during World War II and approximately 900 occupational therapists had served as civilian employees—an estimated potential of 4,100, from which 486 applications were received (table 14). The poor response was believed to be caused by several reasons: (1) Lack of interest in a Regular Army career, (2) misunderstanding the responsibilities and obligations which acceptance of a Regular Army commission entailed, and (3) the

TABLE 14—*Recapitulation of appointments, Women's Medical Specialist Corps, 16 April 1947 to 16 April 1948*[1]

Applications for appointment	Dietitian	Physical Therapist	Occupational Therapist	Total
Number of applications received	170	181	135	486
Number of applications disqualified	72	94	75	241
Reasons for disqualification:				
Physically disqualified	20	21	24	65
Failed Technical Proficiency Test	3	3	2	8
Overage for appointment	5	4	2	11
Overage in grade	10	37	0	47
Married	5	4	2	11
Withdrew application	11	11	21	43
Applications abandoned	1	2	3	6
Rejected by Central Medical Department Board	16	12	18	46
Noncitizen	1	0	1	2
Deceased	0	0	1	1
Number of appointments tendered	98	87	60	245
Number of appointments deleted	10	13	23	46
Declined	10	11	22	43
Physically disqualified	0	2	1	3
Total commissioned	88	74	37	199
Grades in which appointed:				
Major	1	1	0	2
Captain	32	28	3	63
1st Lieutenant	49	27	14	90
2d Lieutenant	6	18	20	44
Total	88	74	37	199

[1] Compiled from records maintained by Col. Emma E. Vogel, while Chief, Women's Medical Specialist Corps.

[6] A completed application consisted of: (1) Report of physical examination; (2) Biographical Information Blank designed to reveal applicant's emotional stability and personal characteristics; (3) Report of Officers Review Board indicating applicant's potentialities as an officer; (4) Officer Evaluation Report submitted by officers under whom applicant had served; and (5) Technical Proficiency Test designed to test applicant's professional competence.

high salaries available at that time in civil life. Of the 245 appointments tendered, only 199 were accepted by the applicants.

SERIAL NUMBERS

A new block of serial numbers was assigned to the Women's Medical Specialist Corps by The Adjutant General. The Dietitian Section was assigned R 10,000 to R 19,999 for the Regular Army and R 20,000 upward for Reserve commissions; the Physical Therapist Section was assigned M 10,000 to M 19,999 for the Regular Army and M 20,000 upward for Reserve commissions; the Occupational Therapist Section was assigned J 1 to J 99,999 for Regular Army and J 100,000 upward for Reserve commissions. Officers previously commissioned as dietitians and physical therapists had been assigned serial numbers beginning with R 1 and M 1, respectively. Officers in these groups who accepted commissions in the Women's Medical Specialist Corps Section of the Officers' Reserve Corps retained the serial numbers they had been assigned in the Army of the United States.[6] Maj. (later Col.) Emma E. Vogel and Maj. (later Lt. Col.) Helen C. Burns [7] had the distinction of being the first officers commissioned under the laws that gave relative rank and Regular Army status. As officers in the Army of the United States, they had been assigned serial numbers M1 and R1, respectively; subsequently, in the Regular Army, these numbers were changed to M 10,000, respectively.

INSIGNIA

Many hours were spent in research and conference before a final decision was reached as to the distinguishing insignia for the Women's Medical Specialist Corps. Mr. Arthur Dubois, Heraldic Section, Research and Development Branch, Military Planning Division, Quartermaster General's Office, recommended discarding the traditional caduceus of the Medical Department in favor of a mythological figure similar to that authorized for the Women's Army Corps. Extensive research failed to disclose any symbol which would be appropriate for all three sections of the corps. When it was decided to use the caduceus, there was further discussion as to the letters to be superimposed. The letter "S" was suggested by Colonel Vogel. It could not be used, however, because it was still allocated to the Sanitary Corps even though this corps was no longer in existence. The insignia, black letters "W" and "S" superimposed on a silver caduceus was finally agreed upon (fig. 91), and on 22 December 1947, The Quartermaster General turned the design for this insignia over to the manufacturers for production.

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[6] Staff Directive, Adjutant General's Office, 14 Apr. 1948, subject: Designation of Army Serial Numbers for Army Nurse Corps and Women's Medical Specialist Corps.

[7] Later Maj. Helen B. Gearin.



FIGURE 91—Insignia of Women's Medical Specialist Corps.



FIGURE 92—Col. Emma E. Vogel, first chief of the Women's Medical Specialist Corps, receives her promotion. Left to right: Maj. Gen. Norman T. Kirk, Colonel Vogel, and Maj. Gen. Raymond W. Bliss.

ORGANIZATION

Surgeon General's Office

On 5 December 1947, Major Vogel was appointed the first chief of the Women's Medical Specialist Corps and promoted to the grade of colonel. Because this office and those of the three assistant chiefs of the corps are statutory offices, the holders are executive officers of the United States required by the Constitution to be bound by oath or affirmation of office.[8]

Maj. Gen. Raymond W. Bliss, The Surgeon General, recognized this as an historic occasion and invited Maj. Gen. Norman T. Kirk, former Surgeon General, to assist him at the ceremony in which Colonel Vogel took the oath of office and received the silver eagles symbolic of her new grade (fig. 92).

The first appointment of an assistant chief of the corps was made on 20 February 1948 when Maj. Helen C. Burns took office as Chief of the Dietitian Section (fig. 93) and was promoted to the statutory grade of lieutenant colonel. She resigned on 30 June 1948 because of marriage. The second chief of the Dietitian Section, Maj. Eleanor L. Mitchell, and the first chiefs of the Physical and Occupational Therapist Sections, Maj. Edna Lura and Capt. Ruth A. Robinson, who were also assistant chiefs of the corps, took their oaths of office and were promoted to the statutory grade of lieutenant colonel on 26 August 1948 (fig. 94).

[8] SPJGA 1943/6745, 6 May 1943; JAGA 1951/5202, 24 Aug. 1951; JAGA 1953/1462, 16 Feb. 1953; Volume 3, Digest of Opinions, The Judge Advocates General of the Armed Forces, p. 586, Oaths and Affirmations 1.

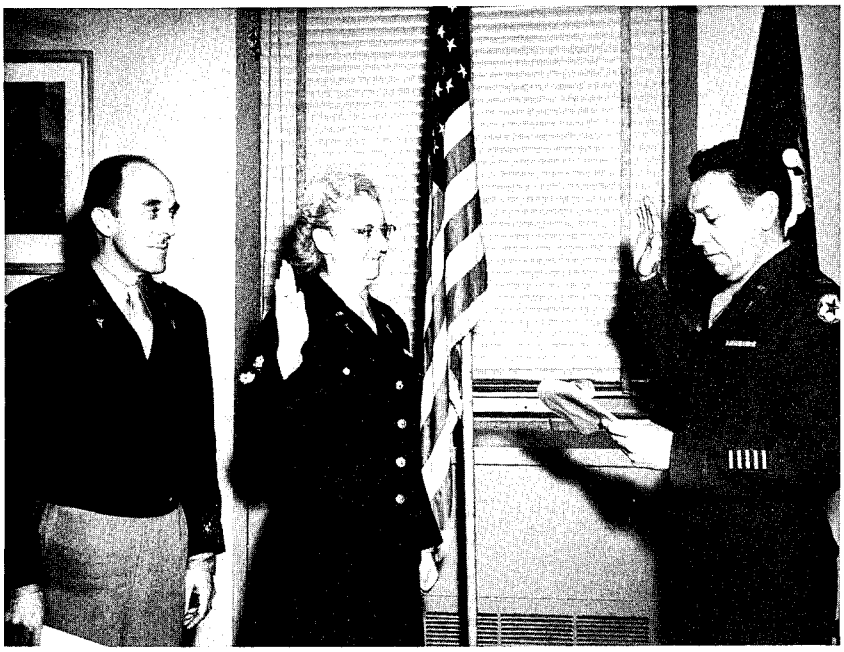


FIGURE 93—Lt. Col. Helen C. Burns is sworn in as Chief of the Dietitian Section, Women's Medical Specialist Corps, 24 February 1948. Left to right: Brig. Gen. George E. Armstrong, Deputy Surgeon General, Colonel Burns, and Col. Howard W. Doan, MC, Executive Officer, Surgeon General's Office.

The duties of the Chief of the Women's Medical Specialist Corps were:[9]

1. Act as consultant to The Surgeon General on all administrative and general policy matters concerning the corps.
2. Based on the recommendations of the respective chiefs of the sections of the corps—
   a. Recommend personnel policies and programs pertaining to procurement, training, promotion, and separation.
   b. Recommend to The Surgeon General the commissioning of qualified officers for the corps.
   c. Coordinate training programs for the sections comprising the corps.
   d. Make recommendations on tables of organization and distribution of officers of the corps.
3. Maintain liaison with governmental agencies concerned.
4. Make inspections as required.

The duties of the three officers appointed as assistant chiefs of the corps and chiefs of the sections were as follows in reference to their own professions.

[9] (1) See footnote 1, p. 341. (2) Army Regulations No. 40–7, 15 Dec. 1954. (3) Army Regulations No. 40–7, 29 Oct. 1958.



FIGURE 94—The three assistant chiefs of the Women's Medical Specialist Corps receive their promotions from The Surgeon General, 27 August 1948. Left to right: Lt. Col. Edna Lura, Lt. Col. Ruth A. Robinson, Lt. Col. Eleanor L. Mitchell, and Maj. Gen. Raymond W. Bliss. (U.S. Army photograph.)

1. Act as consultant to The Surgeon General on technical matters.
2. Formulate and recommend training programs.
3. Review news releases and articles prior to publication.
4. Recommend on tables of organization and distribution of section personnel.
5. Recommend on the formulation of personnel policies and assignments.
6. Recommend to the appropriate consultant division on matters pertaining to professional standards and procedures.
7. Maintain liaison with allied professional organizations.
8. Make technical inspections as indicated.

On 23 December 1947, The Surgeon General appointed a board of officers to make recommendations on the organization of the Women's Medical Specialist Corps Division. Two schools of thought existed. One believed that the chief of the corps should have only administrative responsibility, while the other thought she should maintain her relationship with her professional specialty in addition to her administrative responsibility. The first was finally agreed upon, and the Women's Medical Specialist Corps Division was established on 29 September 1948,[10] almost 10 months after the appointment of the corps chief.

[10] Office Order No. 70, Office of The Surgeon General, U.S. Army, 29 Sept. 1948.

During the interim, Colonel Vogel had the difficult task of attempting to meet her responsibilities in face of a wide divergence of opinion as to the organization of her office. She believed that the chiefs of sections should be physically located in her office to foster corpswide identification and esprit de corps among them and thereby the members of their sections. This proposal, however, was not approved by the Chief, Personnel Division, Surgeon General's Office.

Chart 6 shows the organization of the Women's Medical Specialist Corps Division and the corps officers assigned to the Surgeon General's Office during the period from December 1947 to June 1950. It does not, however, reflect the actual assignments of the chiefs of the sections within the organization of the Surgeon General's Office.

The Chief, Physical Therapist Section and the Chief, Occupational Therapist Section were designated chiefs of their respective branches in the Physical Medicine Consultants Division. The Chief, Dietitian Section, who was Chief, Dietetics Consultant Division, until 20 September 1948 when that division was abolished, was designated Chief, Food Service Section, Domestic Operations Branch, Medical Plans and Operations Division.[11]

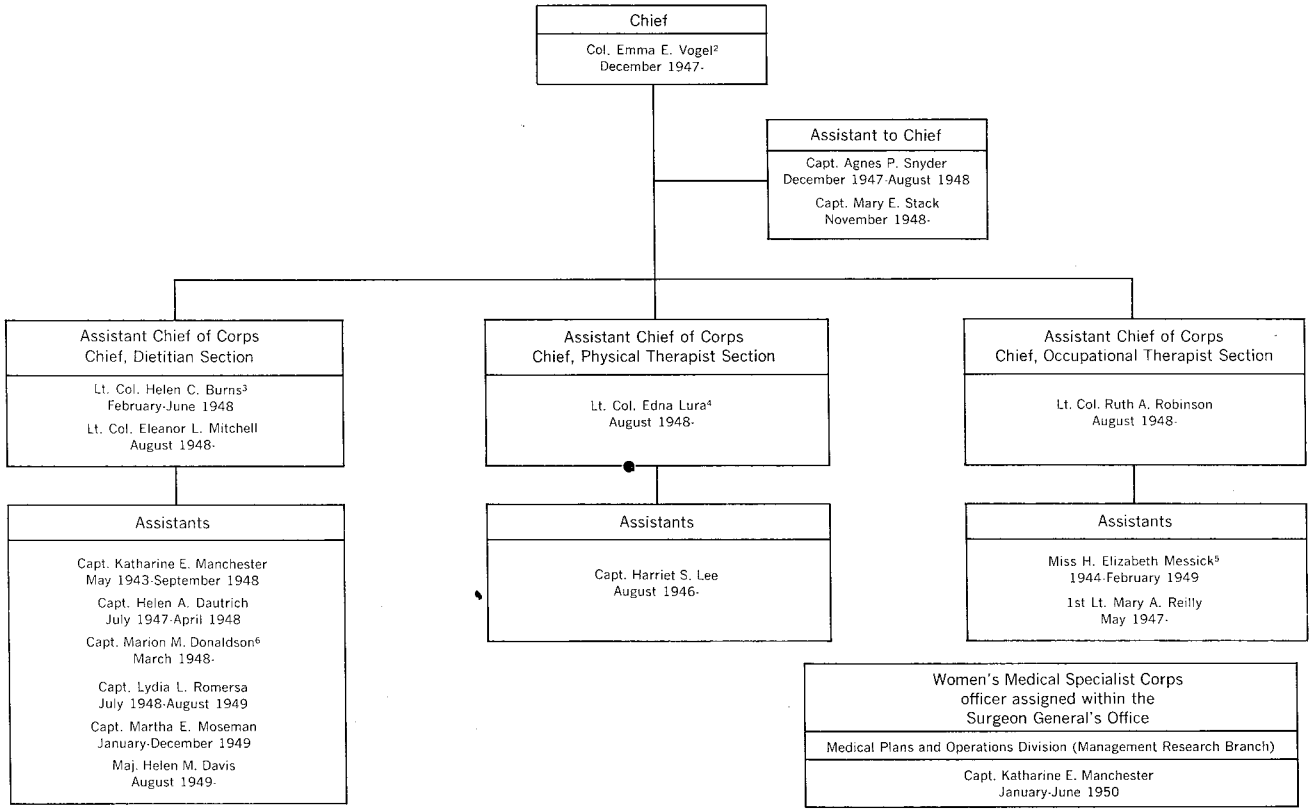
Army Headquarters

Experience during World War II proved conclusively that professional supervision and assignment of dietitians, physical therapists, and occupational therapists by consultants on an Army command level was essential to the best interests of the Medical Department. Supervisory positions which had been established for dietitians and physical therapists in the European and the Far East Command headquarters continued to be authorized in the subsequent years. After attaining commissioned status, occupational therapists were assigned in oversea hospitals and the supervising physical therapist in those commands had occupational therapists added to her sphere of administrative operation.

Assignment of officers from each section of the corps as consultants to Army area headquarters in the United States during peacetime was not thought to be desirable because of the shortage of personnel. It was the belief of the chief of the corps, however, that provision should be made for the establishment of these supervisory positions in the mobilization tables of distribution for the medical sections of the headquarters in the Continental Army Commands. In the event of an emergency which would occasion the recall of Reserve officers and necessitate extensive procurement activities, such officers assigned to area headquarters would be able to facilitate procurement and assure that assignments of Women's Medical Specialist Corps officers were appropriately made. Toward this end, on 30 March 1949 and again

[11] Office Order No. 66, Office of The Surgeon General, U.S. Army, 20 Sept. 1948.

CHART 6—*Organization; Women's Medical Specialist Corps Division,*[1] *Surgeon General's Office, December 1947-June 1950*



[1] The Women's Medical Specialist Corps Division was established in September 1948.
[2] Director of Physical Therapists since August 1942.
[3] Director of Dietitians since August 1942. (Later Maj. Helen B. Gearin.)
[4] Acting Director, Physical Therapist Section, May to August 1948.
[5] Chief, Occupational Therapy Branch, 1944 to August 1948. Assigned as consultant in August 1948.
[6] Later Maj. Marion D. Douglas.

on 11 October 1949, Colonel Vogel recommended that the mobilization tables of distribution be amended to include these positions. This was accomplished late in 1949.[12]

Hospital Level

While there were no changes in the professional duties of dietitians, physical therapists, and occupational therapists at the hospital level following their acceptance of Regular Army commissions, there was an obvious change of status. These officers appreciated the fact that at long last they were taking their proper place with members of other corps in the Army Medical Service and that while they would enjoy increased prestige and opportunities for professional advancement, they would also be expected to assume additional responsibilities as Regular Army officers. These added duties included assignments to serve on Regular Army interview boards, selection and medical evaluation boards, promotion boards, membership on boards for the supervision of women officers' quarters, councils for open messes, and boards of governors for officers' clubs.

PERSONNEL

After the cessation of hostilities, most of the dietitians and physical therapists were caught up in the Army-wide excitement of leaving the service and going home. From the beginning of the war, many of these officers had intended to serve only for the emergency and 6 months thereafter and then return to their former civilian positions. Others were not happy with their working conditions—some dietitians had been required to serve under mess officers who were less qualified and experienced in food service activities; some physical therapists were unhappy about the change in their duties and responsibilities after the establishment of the physical medicine service. Other wanted to leave the service, not sure of what they wanted of the future.

The situation was a serious one for the dietitians because they had never attained their procurement objective. As demobilization progressed, the War Department authorized a recall quota of 50 dietitians. This made it possible for those dietitians who were interested in remaining in the service to request extended active duty. There had been a surplus of physical therapists early in 1946, but accelerated separation policies had enabled such a large number to be separated that by April 1947, it was necessary to start procurement to meet the peacetime needs. Since many of the physical therapists who had left the service were by this time established in other positions, serious consideration was given to the early resumption of the Army's physical therapy training program, a vital source of procurement in the past.

Problems which faced the occupational therapists at this particular time were quite similar to those confronting the dietitians and physical

[12] Report of Activities, Women's Medical Specialist Corps, 1 July–31 Dec. 1949, p. 16.

therapists. Because occupational therapists had always been civilian employees with the Army, there were, however, many facets of military life which were foreign to them.

Whether to apply for a commission, whether to leave the Army and take a position in a civilian or other government hospital, whether to remain with the Army as a civilian employee and hope that seniority acquired during the war years would provide protection from periodic reductions in personnel—these were some of the problems that confronted each occupational therapist. Some applied for commissions, some resigned, and others remained on duty as civilians even though they realized that eventually they would be replaced by commissioned occupational therapists.

Procurement

Training programs

To offset the losses in the dietitian, physical therapist, and occupational therapist sections, plans were made in December 1947 to activate the physical therapy and occupational therapy training programs and to convert the dietetic internship at Brooke Army Medical Center, Fort Sam Houston, Tex., from a civilian to a military training program. Students selected to enter the three professional programs in the fall of 1948 would have to meet all criteria for a Regular Army commission although they would be commissioned as second lieutenants, Officers' Reserve Corps, for the period of their training. They would be required to express in writing their desire to apply for commissions in the Regular Army upon satisfactory completion of the training course.[13] This commitment was eliminated in 1952 as it was a deterrent to procurement.

By March 1948, it had been determined that the 6 months' didactic portion of the physical therapy course would be given at the Medical Field Service School, Fort Sam Houston, Tex., and the 6 months' applicatory phase in selected Army general hospitals.[14] At the same time, it was decided that the program for commissioned occupational therapists would be limited to 12 months' clinical affiliation in selected Army general hospitals but that this program would not begin in the fall of 1948 as previously planned. An affiliation program for civilian occupational therapy students, authorized in December 1947, was already scheduled for September 1948.[15]

The relatively small numbers of students who applied for the dietetic internship and the physical therapy course which began in September 1948 precluded the degree of selectivity necessary to insure the caliber of professional personnel desired for future Regular Army officers. It had been anticipated that a wide range of colleges and universities

[13] Department of the Army Circular No. 67, 15 Mar. 1948.
[14] Circular No. 85, Office of The Surgeon General, U.S. Army, 7 July 1948.
[15] Circular No. 164, Office of The Surgeon General, U.S. Army, 29 Dec. 1947.

would be represented. To achieve this goal, an active publicity and recruitment program was initiated.

It was found that the best method of acquainting students with these programs was through visits to the colleges and universities to explain and answer questions about the Army and military status. As a result of the more direct and personal approach, a greater number of individuals applied and a wider range of institutions was represented in applications for the 1949 classes. More selectivity of applicants was thereby achieved.

The first occupational therapy clinical affiliation for military students began in September 1949. As had been the experience with the dietetic and physical therapy training programs, the number of applicants was too few to allow for much selectivity. An active publicity program was productive of a larger representation in the course which began in the fall of 1950.

Qualified personnel

The need to increase the active strength of the Women's Medical Specialist Corps to more nearly approximate requirements constituted a perennial problem. Two sources of procurement which had been emphasized were the Regular Army integration program and the professional training courses conducted by the Army. Another source had not been fully explored—the procurement of qualified graduates of civilian schools. Publicity was intensified, therefore, with the hope of interesting potential candidates in pursuing their professional careers in the military service. The customary publicity media were used—brochures, fact sheets, posters, articles. Letters were written to eligible individuals, directors of approved dietetic, physical therapy, and occupational therapy courses, and to inactive members of the Officers' Reserve Corps. Visits were made to the approved professional schools which afforded an opportunity to explain the program in more detail and conduct personal interviews with interested students.

By the end of 1948, 46 appointments in the Officers' Reserve Corps had been made, and 62 additional officers had been assigned to extended active duty. In 1949, approximately 40 officers were assigned to active duty.[16] During this period, shortages were greatest in the dietitian and occupational therapist sections.

Factors influencing procurement

There were a number of factors which undoubtedly influenced procurement. Probably most important was the acute civilian shortage in the three categories of personnel represented in the Women's Medical Specialist Corps, and, at the same time, the greatly increased demand. Because of the lower birth rate in the 1930's there were fewer college

[16] From statistics compiled in Office of Chief, Women's Medical Specialist Corps, Surgeon General's Office.

graduates entering these professions. Another deterrent was the increasing number of career opportunities for women. Within the service there were several factors which were unavoidable from an administrative point of view, but which weighed heavily in an applicant's final decision. These included lack of assurance as to choice or stability of assignment because of the necessity of giving priority to the overall needs of the service. One of the most serious problems associated with personnel procurement was the inadequate housing which existed in some Army installations. The magnitude of this problem precluded any immediate solution.

Strength

As of 30 June 1948, there were 437 Women's Medical Specialist Corps officers on duty: 195 dietitians, 197 physical therapists, and 45 occupational therapists. By 30 June 1950, the strength had decreased to 340 officers: 141 dietitians, 135 physical therapists, and 64 occupational therapists. (See Appendix J, p. 611.) Approximately 85 percent of the Corps continued to be assigned in the United States (See Appendix K, p. 613.) and over 55 percent of the members on duty were those in a Reserve status.

This drop in strength was the natural result of circumstances. Termination of Army of the United States status for dietitians and physical therapists in May 1948 had resulted in separation from the service of those who did not desire to apply for Regular Army commissions. Too, those members who had accepted commissions in the Officers' Reserve Corps had signed category commitments and thus could be separated upon termination of the commitment. Another reason for separation applicable to women only was marriage.

The greatest decrease in strength occurred in 1949 when a separate Medical Department was authorized for the Air Force. A system of interservice transfer of personnel had been mutually agreed upon, and by July 1949, 90 Women's Medical Specialist Corps officers had transferred to the Air Force: 38 dietitians, 39 physical therapists, and 13 occupational therapists.

Career Management

Considerable time and study were devoted to the development of career patterns for Women's Medical Specialist Corps officers. A first draft of the pattern and description of the plan was submitted to the Chief, Personnel Division, in December 1947. With minor revisions, the chart and narrative description were approved and published in June 1948[17] (chart 7).

The first portion of the career management program to be imple-

[17] (1) Department of the Army Technical Manual (TM) 20-605, June 1948. (2) Medical Department, United States Army. Personnel in World War II. Washington: U.S. Government Printing Office, 1963, pp. 509-510.

CHART 7—*Women's Medical Specialist Corps career pattern*

Period	Years Service / Retirement	School eligibility		
Definitive	22			Training for Positions of High Responsibility
	21			After 14 years of service, officers are eligible for selection to the grade of major. Those selected will be given tours of duty in responsible assignments. Assignments to positions of responsibility progress according to demonstrated ability. Supervisory assignments at general hospitals, headquarters of Army areas, theaters of operations, and training centers, and the Surgeon General's Office.
	20			
	19			
	18			
	17			
	16			
	15			
Specialized training	14		Advanced associate branch courses[2]	Dietitian Section: a. Hospital Food Service Supervisor, general or station hospital, or Educational Director, Dietetic Division, Medical Field Service School, or — b. Therapeutic Diets Supervisor, general or station hospital, or — c. Training Dietitian, general or station hospital, or — d. Food Clinic Dietitian, general hospital. e. Advanced professional courses (civilian or military or both). f. Unit Supervision, general or station hospital. g. Advanced course in hospital mess administration. h. Assistant Dietitian, general or station hospital.
	13			
	12			
	11	Advanced professional training[1]		Physical Therapist Section: a. Assistant or Chief Physical Therapist, general hospital. b. Sectional Supervisor and Personnel Administrator, general hospital, or Instructor, Advanced Professional Training Course. c. Head Physical Therapist, station hospital, or Instructor, Basic Training Course. d. Unit Supervision and Personnel Administration and Instruction. e. Clinical research. f. Specialized application. g. General application. Upon completion of Advanced Professional Training Course, outstanding officers become eligible for postgraduate professional training or personnel management in selected civilian installations.
	10			
	9			
	8			
	7			
	6			
	5			
	4			Occupational Therapist Section: a. Chief or Assistant Chief Occupational Therapist, general hospital. b. Chief Occupational Therapist, station hospital, or Instructor, Basic Training Course. c. Unit Chief, general hospital. d. Clinical research. e. Specialized application. f. General application. Following the basic training period, officers will be assigned to advanced professional training. Outstanding personnel may then be eligible for postgraduate professional or administrative study in a civilian institution.
Basic training	3			Basic Medical Department Female Officers' Course[2]
	2			Following basic course, each officer will be assigned for at least 1 year in supervised practice in the specialty concerned in a general hospital and at least 1 year in a station hospital.
	1			

[1] Mandatory courses for physical and occupational therapists. [2] Mandatory courses for all officers.

Source: Department of the Army Technical Manual (TM) 20–605, June 1948.

mented, and by far the most important, was the provision authorizing advanced professional training for outstanding officers of the corps. It was first thought that, beginning in September 1948, there would be 14 Regular Army officers selected to attend graduate courses leading to a master's degree. Owing to budgetary limitations, however, this number was reduced to six.

In addition to the courses leading to a master's degree, authority was also established for Regular Army Women's Medical Specialist Corps officers to participate in a number of courses [18] ranging from 3 weeks to 6 months. From time to time, the question arose as to whether it was consistent with established policies to select Reserve officers of the corps to attend the shorter courses. It appeared advisable to adopt the general policy established for other corps; namely, that Reserve officers selected for such training would have to have at least 1 year to serve following completion of the course. On 11 October 1949, The Surgeon General established a policy whereby a Reserve officer could be selected to attend short courses if it could be determined that such additional training was essential to the performance of her duty and if no Regular Army officer of equal or better qualification applied for that particular course.

Activation of Medical Department Female Officers' Course

The basic military orientation program had proved invaluable for dietitians and physical therapists in World War II. It was believed necessary to reactivate this program in order to prepare Women's Medical Specialist Corps officers for their responsibilities as commissioned officers whether in the Regular Army or the Officers' Reserve Corps. All initial planning for the basic program had been completed by the time Public Law 80–36 was passed, so the only procedure remaining to be accomplished was the publication of implementing directives and courses of study. The course was conducted at the Medical Field Service School.

Although the course was planned to include Women's Medical Specialist Corps officers in addition to officers of the Army Nurse Corps, the latter were so greatly in the majority that the program of instruction in the clinical aspects was geared primarily to the nursing aspects of military medicine. During the hours devoted to these subjects, pertinent material of a professional nature was substituted for officers of the Women's Medical Specialist Corps. These substitute hours consisted of 46 hours pertaining to hospital food service for dietitians and 36 hours of clinical observation and seminars for physical and occupational therapists.

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[18] (1) Department of the Army Circular No. 392, 17 Dec. 1948. (2) See Appendix L, p. 615. for list of military and civilian courses attended by Women's Medical Specialist Corps officers from 1948 to 1961.

Promotions

Two factors contributed to the delay in accomplishing promotions in the Regular Army Women's Medical Specialist Corps. First, no promotions could be made until individuals currently serving in the Medical Department integrated into the Regular Army. Second, the delay in establishing a Women's Medical Specialist Corps Division had resulted in confusion and misunderstanding as to procedures for accomplishing promotions.

Public Law 80–36 authorized 24 officers in the permanent grade of major, 8 for each section of the corps. It was not until 19 July 1948 that the first promotions to the permanent grade of major, Regular Army were announced. Seven dietitians and seven physical therapists [19] were promoted, all of whom had served in the Medical Department for many years and had been integrated into the Regular Army in the grade of captain. Since no occupational therapists had been in the grade of captain the required length of time, none was eligible for promotion. In the spring of 1949, the first occupational therapist [20] was promoted to the permanent grade of major. There were no additional promotions made in this grade until after May 1950.[21]

In accordance with Public Law 80–36, promotion of Women's Medical Specialist Corps officers to the permanent grade of captain was dependent upon completion of 10 or more years active or constructive service and the satisfactory completion of a professional examination. Because of delays in return of examinations, no promotions to the permanent grade of captain were made until early 1949. By this time, it was obvious that elimination of the examination was necessary in order to equalize promotion procedures for all corps. This was accomplished in May 1950 with the passage of Public Law 514, 81st Congress.

Late in 1949, the Department of the Army announced that, effective on 1 January 1950, promotion to the temporary grade of first lieutenant in the Women's Medical Specialist Corps previously made upon completion of 18 months' service would not be accomplished until after completion of 3 years' satisfactory service. [22] In the meantime, the Air Force had indicated that promotions to this grade in that service would continue to be made upon the satisfactory completion of 18 months' service. This created a morale problem which resulted in a number of requests for transfer from the Army to the Air Force. The inequity was corrected in April 1950, when the Army reverted to its former qualification of 18 months' service.[23] The grade distribution as of 30 June 1950 shows that 10 Regular Army second lieutenants were

[19] Dietitians: Myrtle Aldrich, Helen A. Dautrich, Helen M. Davis, Hilda M. Lovett, Eleanor L. Mitchell, Grace Smith, and Nell Wickliffe. Physical therapists: Felie Clark, Brunetta A. Kuehlthau, Elsie Kuraner, Harriet S. Lee, Edna Lura, Agnes P. Snyder, and Ethel M. Theilmann.

[20] Ruth A. Robinson.

[21] Spaces without reference to sectional proportionment were made available by Public Law 514, 81st Congress, approved 16 May 1950.

[22] Army Regulations No. 605–12, 28 Oct. 1949, Changes 1.

[23] Circular No. 43, Office of The Surgeon General, 12 Apr. 1950.

serving in the temporary grade of first lieutenant. The greatest strength of the Regular Army component of this young corps was in the grade of captain (table 15).

TABLE 15—*Breakdown by grades of Regular Army officers in the Women's Medical Specialist Corps, 30 June 1950*

Grade	Colonel	Lieutenant Colonel	Major	Captain	1st Lieutenant	2d Lieutenant
Permanent grade:						
Dietitian			8	41	12	3
Physical therapist			8	33	15	3
Occupational therapist			1	11	10	4
Temporary grade:						
Dietitian		1	7	47	9	
Physical therapist	1	1	6	35	16	
Occupational therapist		1		11	14	
Officers' Reserve Corps:						
Dietitian				16	37	24
Physical therapist				8	53	15
Occupational therapist					16	22

Source: Women's Medical Specialist Corps semiannual reports.

OFFICERS' RESERVE CORPS

A Department of the Army directive outlining requirements for Women's Medical Specialist Corps Reserve appointment and the procedures by which it could be accomplished was published in March 1948.[24] As a result of limited publicity, the submission of applications was somewhat slow. For example, Reserve appointments by 30 June 1948 totaled only 22 for those on extended active duty: 2 dietitians, 9 physical therapists, and 11 occupational therapists; and 13 for those in inactive status: 4 dietitians, 1 physical therapist, and 8 occupational therapists.

The appointment of Reserve officers in the inactive status necessitated the development of a program which would enable them to earn the 50 points annually that were required to keep their Reserve status current. Early in 1948, it was envisioned that extension courses which had been prepared for male officers might also be made available to female officers. This plan, however, was never entirely successful because the content of those courses did not meet either the professional or the military needs of Women's Medical Specialist Corps officers.

In August 1948, the Chief, Officers' Reserve Section, Department of the Army, called a conference which was attended by the chiefs of all corps in the Army Medical Service to further discuss the problems associated with acquiring retention and retirement credit. It was pointed out that many Reserve officers in the inactive status lived in areas remote from Army medical installations. As a result they did not have an opportunity to become affiliated with a unit and therefore had difficulty in earning the necessary credit points. Consequently, to obtain

[24] See footnote 13, p. 352.

points these officers had to depend entirely on whatever extension courses seemed appropriate and on short periods of active duty if such were made available to them. As a result of this conference, the quarterly distribution of a newsletter was begun in order to keep members of the Reserve Corps aware of new regulations and procedures by which points could be acquired. These newsletters helped greatly to clarify the situation and offered an opportunity to disseminate current information which was sorely needed in the fields. A plan was also developed by which Reserve officers could be credited with additional points through attendance at military conferences held in various Army areas.

Two other major problems for the Women's Medical Specialist Corps inactive reservist proved to be limited position vacancies in Reserve hospital units and lack of promotion opportunities. Much effort was directed toward revising the maximum age-in-grade limitations which had been established for Reserve hospital units. In these organizations there were no field grade position vacancies and very few spaces in the grade of captain for Women's Medical Specialist Corps officers. Consequently, there was a 100 percent loss among captains who had reached the maximum age-in-grade in these positions. This meant that the Army Medical Service lost the services of these officers who had been trained with the unit and whose services in an emergency would be most valuable. It was obvious that the solution of this problem would depend on a reevaluation of the organizational structure of these units and the development of a plan which would provide more assignment opportunities and more promotions for Women's Medical Specialist Corps Reserve officers. Progress toward this end was made in 1954 with the passage of the Reserve Officer Personnel Act.

UNIFORMS

Development of a New Uniform

In May 1949, The Quartermaster General appointed an advisory committee of six women, all of whom were leading civilian fashion authorities in the United States, to serve as consultants in the development of a new uniform for women in the Army.[25] The clothing needs were studied and the committee made recommendations on the design, color, and fabric for a new uniform. In their deliberations, they considered the appearance and usefulness of the items, the environmental protection and functional design of the uniform, and the results of current technical research on materials. The Chiefs of the Army Nurse Corps,

[25] The members of this committee were Miss Dorothy Shaver, President, Lord & Taylor, New York, N.Y., who was adviser on women's clothing to The Quartermaster General during World War II, Chairman; Mrs. Edna Woolman Chase, Editor-in-Chief of Vogue; Mrs. Tobe Coller Davis, fashion merchandise consultant; Miss Eleanor Lambert, fashion publicist; Mrs. Mary Brooks Picken, authority on home economics and advertising; and Mrs. Carmel Snow, Editor of Harper's Bazaar.



FIGURE 95—Uniforms worn during period 1945–51. (Top) Col. Emma E. Vogel is congratulated on her appointment as Chief, Women's Medical Specialist Corps. Left to right: Col. Mary G. Phillips, Chief, Army Nurse Corps; Col. Mary A. Hallaren, Staff Director, Women's Army Corps; Colonel Vogel; and Maj. Gen. Raymond W. Bliss, The Surgeon General. (U.S. Army photograph.) (Bottom) Physical therapists confer at Walter Reed General Hospital. Left to right: Col. Emmett M. Smith, Chief, Physical Medicine Consultants Division, Surgeon General's Office; Maj. Harriet S. Lee, Assistant, Physical Therapist Section, WMSC; Lt. Col. Edna Lura, Chief, Physical Therapist Section, WMSC; Colonel Vogel; Maj. Gen. Paul H. Streit, Commanding General, Walter Reed General Hospital; and Capt. Barbara M. Robertson, Chief Physical Therapist, Walter Reed General Hospital, Washington, D.C.



FIGURE 96—Wool taupe and summer dress uniform authorized in 1951. (U.S. Army photograph.)

Women's Medical Specialist Corps, and Women's Army Corps met with the committee in these studies.

The committee recommended that the former style (fig. 95) be abandoned and that the uniform be of contemporary style as to both silhouette and length. They also recommended that women's uniforms should depart from the olive drab shades and that taupe should be considered as it was believed to be more attractive. Many samples of materials in taupe shades were submitted for committee study before the final selection was made.

On 23 February 1950, the new uniforms (with suitable accessories) designed by Miss Hattie Carnegie, New York, N.Y., were displayed in a special preview at Headquarters, First U.S. Army, Governors Island, N.Y. Those attending included Secretary of the Army Gordon Gray, high Army officials, representatives of the press, and chiefs of the interested Army corps. Modeled by officers in the Army Nurse Corps and Women's Medical Specialist Corps, the uniform items consisted of a two-piece taupe wool uniform (fig. 96) with two blouses, one a cream rayon for dress and the other a taupe cotton for duty wear; a taupe wool overcoat; a taupe wool field jacket which could be worn with either the

skirt or slacks; and the summer dress which was a one-piece garment made of taupe cotton material. Matching oversea caps were designed for these uniforms. The summer dress uniform, of the same design as the taupe uniform, was made of white Palm Beach material and worn with white accessories.

These uniforms represented several distinct departures from the former uniforms, and, with the reduction in the number of uniform items, it was envisioned at that time that the complete ensemble would cost less than the uniform which had been worn by women in the Army since 1943. It was planned that the changeover to the new uniform would be gradual, and would not be totally accomplished until mid-1952, at which time it was anticipated that existing stocks of the old uniform would be depleted.

Clothing Tests

Early in 1949, Colonel Vogel and representatives of the Army Nurse Corps, Women's Army Corps, and the Quartermaster General's Office participated in a test of field clothing held at Mount Washington, North Conway, N.H. The purpose of this test, which was initiated by the Clothing Research and Development Division, Quartermaster General's Office, was to review and evaluate the adequacy of standard field clothing designed for wear by military women in dry, cold weather and to determine whether field clothing designed for male personnel could be substituted for wear by women. All who participated in the test wore the women's standard field clothing which was supplemented by men's garments and footwear. Similar tests were later conducted in reference to clothing designed for wear in wet, cold weather.

Briefly, the conclusions drawn from these tests were:

1. Women could wear men's clothing in an emergency when protection against weather was the main requirement.

2. Women would require specially designed and sized garments whenever the work performed was the main requirement. For evacuation in Arctic areas involving travel by truck, for example, women could be adequately clothed in men's garments. On the contrary, women in the Army Medical Service working in tent hospitals required clothing in women's sizes and design so that they would not be hampered by ill-fitting men's garments and burdened by men's heavy shoes.

3. Women could wear items such as underwear, caps, and hose designed for men, provided small sizes were available. Standard field clothing designed for women was deemed adequate except for the shoes.

MILITARY PERSONNEL POLICY COMMITTEE, WOMEN'S INTERESTS SECTION

In the postwar years, it became increasingly apparent that there were many problems which were mutually shared by the women members of all the military services. In order to coordinate and establish

uniformity of policies pertaining to military women, early in 1949, Secretary of Defense Louis Johnson expanded the Military Personnel Policy Committee in his office to include a Women's Interests Section.[26] Esther Strong, Ph. D., a woman of wide experience in the field of civilian personnel management was designated chairman of this section. On Doctor Strong's recommendation, the chiefs of the women's components in the military services were designated as constituting an advisory group. Beginning in May 1949, these officers met monthly with Doctor Strong to discuss problems common to all groups, for example:

1. Improvement in housing facilities on military reservations for both enlisted and commissioned women.
2. Mobilization planning with particular reference to the utilization of military women.
3. Religion, welfare, and recreation.
4. Recruitment.
5. Separation policies.

Adequate quarters for women officers in the Army Medical Service had long been a matter of great concern to The Surgeon General. The interpretation of criteria for determining the adequacy of quarters for these officers varied markedly between military medical installations. At some posts, women officers were authorized commutation for quarters and thus could live off the military reservation; at other posts, although the same criteria existed, this action was not taken.

The results of several conferences on this problem were reported by The Surgeon General to the Director, Personnel and Administration, General Staff, U.S. Army, on 7 September 1949.[27] No action, however, resulted. During the conferences the Chiefs of the Army Nurse Corps and the Women's Medical Specialist Corps expressed their views that apartment-type quarters for women officers in the Army Medical Service were essential to the maintenance of a high level of morale and efficiency.

INEQUITIES IN PUBLIC LAW 80–36

The need to amend Public Law 80–36 became obvious early in 1948. The law stated that 20 years of active Federal service would be required for retirement but further provided that in determining eligibility for retirement, each Women's Medical Specialist Corps officer commissioned in the Regular Army would be considered to have at least the same length of continuous active commissioned service in the Regular Army as any officer junior to her in rank in the Regular Army Medical Department. The inequity of the latter stipulation be-

[26] In 1941, Gen. George C. Marshall, Chief of Staff, had employed Mrs. Oveta Culp Hobby to establish a Women's Interests Section of the War Department Bureau of Public Relations. (Treadwell, Mattie E.: The Women's Army Corps. United States Army in World War II. Special Studies. Washington: U.S. Government Printing Office, 1954, p. 21.)

[27] See footnote 12, p. 351.

came apparent when Colonel Burns, who had married in November 1947, applied for retirement early in 1948. Although she had 20 years of combined civilian and military service, the officer next junior to her was credited with only 13 years of active commissioned service. According to a decision of the Comptroller General of the United States she was found ineligible for retirement because her civilian service could not be credited for retirement even though it had been credited for longevity for pay purposes. There being no alternative provisions of law, Colonel Burns resigned.

There were other cogent reasons to amend Public Law 80–36. Integration into the Regular Army was to have been accomplished by 16 April 1948 but since it had been much slower than anticipated, legislation was required to extend the period. In addition, the Women's Medical Specialist Corps was restricted by the law to 24 officers in the permanent commissioned grade of major regardless of the authorized strength of the corps. It was believed that a percentage limitation would provide more flexibility.

Another inequity in Public Law 80–36 was related to the period of service when dietitians and physical therapists served in relative rank status, 22 December 1942 to 22 June 1944. This period was not interpreted as being military service for officers who left the service and were later reappointed in the Army of the United States [28] or in the Officers' Reserve Corps.[29] This period was, however, interpreted as being military service for those officers appointed under the act of December 1942 and with no break in service subsequently appointed in the Regular Army. This inequity was remedied by legislation in 1959. [30]

PUBLIC LAW 514, 81ST CONGRESS, 16 MAY 1950

A bill to amend Public Law 80–36 was prepared but was not presented to Congress before it adjourned in June 1948. Since the Secretary of the Army had directed that controversial legislation concerning military matters would not be presented to the short special session which followed, presentation of the bill was delayed until the next regular session of Congress.

The proposed legislation at first was not approved by the General Staff, G–1 (personnel), U.S. Army. Concurrence was obtained, however, when it was pointed out that seven senior Women's Medical Specialist Corps officers including the chief of the corps would be unable to complete 20 years of military service before their 60th birthdays. Approval was also obtained from the Director of the Budget who initially was reluctant to concur in legislation which would grant retirement credit for civilian service of dietitians and physical therapists. His premise was that to do so would establish a precedent.

[28] Public Law 350, 78th Congress, 2d Session, approved 22 June 1944.
[29] See footnote 2(1), p. 341.
[30] Public Law 197, 86th Congress, approved 25 Aug. 1959.

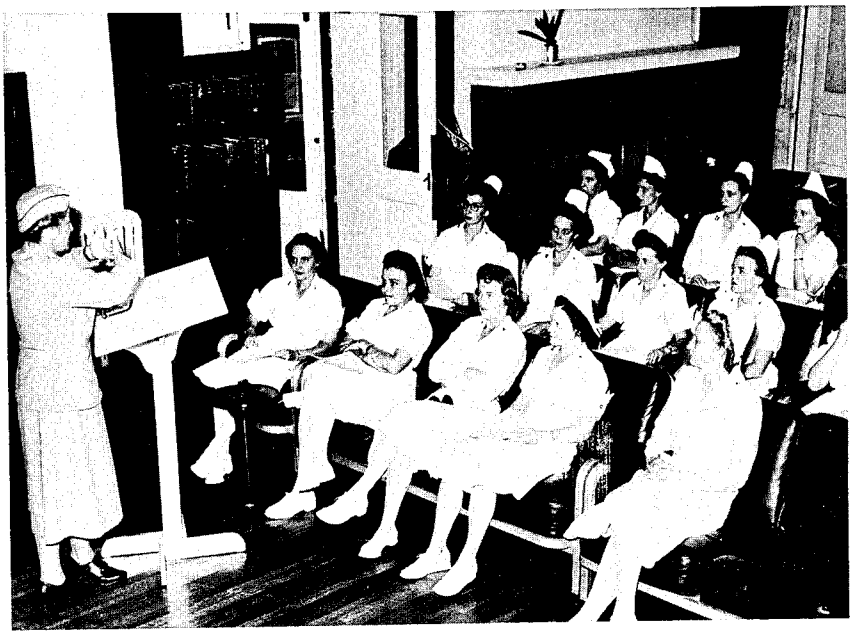


FIGURE 97—Col. Emma E. Vogel, Chief, Women's Medical Specialist Corps, explains legislative changes to nurses, dietitians, and physical and occupational therapists at William Beaumont General Hospital, El Paso, Tex.

The bill was passed by the House of Representatives on 11 October 1949, but because of the early adjournment of Congress, no action was taken by the Senate. Favorable consideration was given the bill early in 1950, and on 16 May 1950, Public Law 81–514 was signed by the President.

The new law extended integration in the Regular Army Women's Medical Specialist Corps until May 1951 (fig. 97). It authorized credit for civilian service toward retirement as well as longevity for dietitians, physical therapists, and occupational therapists. A percentage limitation for officers in the permanent grade of major was established. The law also provided that applicants with 7 or more years of active or constructive [31] service would be appointed in the grade of captain with their date of rank 7 years from the basic date established on their appointment. This gave these officers a promotional advantage over their Army peers appointed under the provisions of Public Law 80–36 who had been required to have 10 or more years of active or constructive service for appointment as captain. The inequity was corrected by passage of Public Law 229, 84th Congress, 4 August 1955.

Public Law 81–514 also provided that the chief and assistant chiefs

[31] Constructive service is defined as the service credit given for the number of years, months, and days by which an applicant's age, at the date of appointment in the Regular Army, exceeds 25 years.

of the corps could request retirement in their statutory grade after having served in office for a period of 2½ years rather than the previously established period of 4 years.

RESUMPTION OF INTEGRATION

Procedures for the new integration program were established, and concerted effort was made by the chief and assistant chiefs of the corps to stimulate interest in Regular Army commissions and to explain the changes and benefits authorized by the new legislation. The law authorized receipt of applications for Regular Army commissions from members of the Officers' Reserve Corps and civilians with prior military service provided they had not passed their 35th birthday on the date of nomination by the President. It was thought that this added source of personnel would help alleviate the shortages which by early 1950 had become serious.

Out of 85 applicants, 22 were disqualified for various reasons and 2 declined to accept their commissions, leaving 61 officers to be added to the Regular Army component of the corps. This did not increase the membership of the corps to any appreciable extent since a number of the appointees were already on active duty as Reserve officers. The resumption of integration did make it possible, however, to appoint in the Regular Army some qualified individuals who had been excluded from the previous integration program because of age.

CHAPTER XI

The Korean War, June 1950 to July 1953

Colonel Nell Wickliffe Merrill, USA (Ret.), and
Colonel Harriet S. Lee, USA (Ret.)

The violent onslaught on Pearl Harbor by the Japanese on Sunday, 7 December 1941, is indelibly engraved on the minds of all Americans. For the second time a Sunday, 25 June 1950, became a day of destiny for the United States. To the occupation forces serving in Japan on Sunday, 25 June 1950, came a terse announcement from Radio Tokyo that the North Koreans had launched a powerful offensive across the 38th parallel.

Although the World War II surrenders had been in existence for nearly 5 years, there had been an uneasy peace in Korea. Korea was divided into a southern area and a northern area at the 38th parallel. The United States maintained a military assistance program in South Korea and the Russian communists dominated North Korea.

Each of these forces had a distinct mission. The forces in the south were building toward the rehabilitation of that area, and simultaneously, the forces in the north were being trained for armed aggression against them. For some time there had been numerous small disputes between the North and South Koreans. At times these clashes, induced by the North Koreans, led to combat which tested the efficiency and readiness for wartime operations. From trumped-up provocation came the onslaught of full-scale hostility. In writing this account many years later, the announcement which one author of this chapter heard on that relatively quiet Sunday afternoon in Yokohama, Japan, is still vivid in her memory.

On 29 June 1950, President Truman authorized General of the Army Douglas MacArthur, Commander in Chief, Far East Command, to use certain supporting ground troops in Korea. For the first time, U.S. troops entered a battle under the flag of the United Nations. In due time, the medical teams of the United Nations were linked into a cooperative and effective organization.

For the first time during a war effort, dietitians, physical therapists, and occupational therapists were serving with the Army Medical Service as a corps. The full military status achieved in 1947 proved a decided boon during the Korean War. Their more effective organization and administration as members of the Regular and Reserve components of the U.S. Army greatly facilitated the accomplishment of the mission of the Women's Medical Specialist Corps.

ORGANIZATION

At the outbreak of hostilities in Korea, the organization of the Women's Medical Specialist Corps Division, Surgeon General's Office, was well established and the administration of the corps was functioning effectively. During the period June 1950 to July 1953, the chief of the corps and the three assistant chiefs completed their 4-year statutory tours necessitating new appointments to these positions (chart 8). The outgoing officers reverted to their permanent grades upon termination of their appointments if they continued on active duty. All were, by law, eligible for retirement in the statutory grade when they met other criteria if they held the position for 2½ or more years.

The 4-year tenure during this period was determined to be 4 years of service in the Surgeon General's Office rather than 4 years in statutory office. Lt. Col. (later Col.) Ruth A. Robinson was relieved, therefore, on 9 June 1952, and Lt. Col. Eleanor L. Mitchell on 21 July 1952. Both continued on active duty and reverted to their permanent grades of major. Col. Emma E. Vogel and Lt. Col. Edna Lura retired upon completion of their tours.

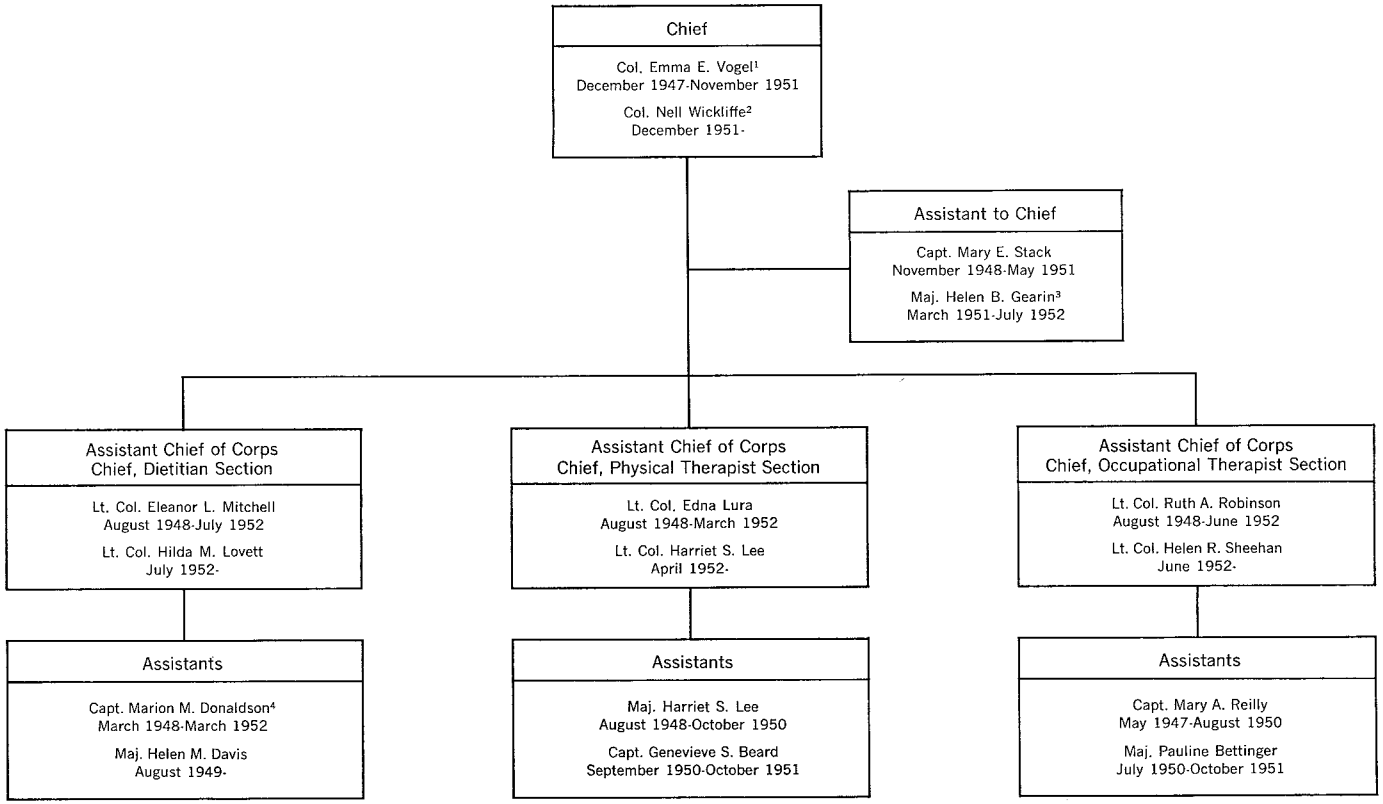
The new chief of the corps, Col. Nell Wickliffe (fig. 98), had been Dietetic Consultant to the Surgeon, Far East Command, immediately before taking office and thus had firsthand knowledge of the professional problems facing Women's Medical Specialist Corps officers in Korea and the Far East. The new section chiefs were Lt. Col. Hilda M. Lovett, dietitian; Lt. Col. (later Col.) Harriet S. Lee, physical therapist; and Lt. Col. Helen R. Sheehan, occupational therapist (fig. 99).

Headquarters, Oversea Army Commands

At the onset of the war in Korea, Women's Medical Specialist Corps activities in oversea areas were coordinated by corps consultants to the surgeons, Far East and European Commands. In the Far East Command, in addition to Major Wickliffe, a physical therapist, Maj. Ethel M. Theilmann was designated consultant on a part-time basis to the Surgeon, Eighth U.S. Army, Yokohama, Japan, and also to the Surgeon, Far East Command, Tokyo, Japan. Because of the extreme shortage of occupational therapists, none were assigned to this command until 1951. The consultants made official visits to the various hospital units to assist in solving both administrative and professional problems and recommended on assignments of corps personnel. Appointment of these consultants was discontinued after 1958 because of the small number of Army Medical Specialist Corps personnel assigned in the Far East.

In the European Command, a dietitian, Maj. Helen A. Dautrich, and a physical therapist, Capt. (later Lt. Col.) Mary L. Ben Dure, served in a similar manner as part-time consultants to the Surgeon. When the chief or an assistant chief of the corps made an official visit to

CHART 8—*Organization, Women's Medical Specialist Corps Division, Surgeon General's Office, June 1950-July 1953*



[1] Colonel Vogel retired after 32 years of service. [2] Later Col. Nell W. Merrill. [3] Formerly Lt. Col. Helen C. Burns. [4] Later Maj. Marion D. Douglas.



FIGURE 98—Col. Nell Wickliffe, Chief, Women's Medical Specialist Corps, is sworn in. Left to right: Lt. Col. Gerard J. Sheehan, MSC, Colonel Wickliffe, and Brig. Gen. Silas B. Hays, Deputy Surgeon General, 3 December 1951.

the commands, one of the consultants usually accompanied her to the different installations in the area (fig. 100). Their specific knowledge of the problems faced by their professional groups was of inestimable value.

LEGISLATION

From time to time after the beginning of the Korean War, legislation was introduced to permit the commissioning of male specialists in the three sections of the corps.[1] It was not, however, until August 1955 that this was achieved.

On 27 May 1953, legislation was enacted providing for appointment of officers in the Regular Army Women's Medical Specialist Corps in the grade of first lieutenant.[2] Previously, original appointments could be made only in the grade of second lieutenant unless the appointee had prior service with the Medical Deparment.[3]

[1] Legislation introduced by Representative Francis P. Bolton on 10 August 1950 and again in January 1951 (H.R. 911). In 1952, H.R. 4447 proposed commissioning of male specialists.
[2] Public Law 37, 83d Congress, 1st Session, approved 27 May 1953.
[3] Public Law 36, 80th Congress, 1st Session, approved 16 April 1947.



FIGURE 99—Section chiefs. Women's Medical Specialist Corps. A. Lt. Col. Hilda M. Lovett, Chief, Dietitian Section. (U.S. Army photograph.) B. Lt. Col. Helen R. Sheehan, Chief, Occupational Therapist Section. (U.S. Army photograph.) C. Congratulating Lt. Col. Harriet S. Lee on her appointment as Chief, Physical Therapist Section, are Brig. Gen. Paul I. Robinson, Commanding General, Fitzsimons General Hospital, Denver, Colo., and Col. Emmett M. Smith, MC, Chief, Physical Medicine Consultants Division, Surgeon General's Office.



FIGURE 100—Col. Nell Wickliffie (center), Chief, Women's Medical Specialist Corps, and Maj. Katharine E. Manchester (left), dietetic consultant to the Surgeon, United States Army, Europe, confer with Maj. Eleanor M. Marshall, physical therapist, 97th General Hospital, during a tour of U.S. medical installations in Germany, July 1952. (U.S. Army photograph.)

PERSONNEL

Strength

In the summer of 1950, both popular and congressional attitudes reflected emphasis on economy in government programs. Drastic reductions in defense expenditures had taken place after the termination of World War II. The overall economy program as determined by Congress and the Bureau of the Budget had brought about the closing of three general hospitals: Murphy General Hospital, Waltham, Mass., on 30 April 1950, and on 30 June, Valley Forge General Hospital, Phoenixville, Pa., and Percy Jones General Hospital, Battle Creek, Mich. In addition, Camp Atterbury Station Hospital, Ind., and Camp Breckinridge Station Hospital, Ky., had been closed.

At the onset of the Korean War, the strength of the Women's Medical Specialist Corps was 340, 149 Regular Army and 191 Reserve officers. The Reserve figures included 23 student officers who were not available for duty in hospitals. The need for personnel was both quantitative and qualitative. The maintenance of a high quality ser-

vice in dietetics, physical therapy, and occupational therapy, and a strong teaching program in these three professions demanded an adequate number of qualified specialists in these fields.

Casualties were first evacuated from Korea to U.S. medical installations in Japan. Later, U.S. Army personnel who would require long-term medical care were evacuated to the United States. In addition to U.S. forces, the U.S. Army hospitals in Japan cared for the sick and wounded of other forces of the United Nations who were fighting in Korea. These United Nations casualties when not returned to duty were returned to their native countries. With the marked increase in the number of patients both in the continental United States and overseas, the workload of each professional specialty was greatly enlarged.

Hospital units arrived in Japan with two dietitians and two physical therapists. Only the 141st General Hospital, Tokyo, had an occupational therapist assigned. Before 25 June 1950, these hospital units had been for the most part paper organizations; however, they progressed rapidly to the status of functioning hospitals. It soon became obvious that there was a great disparity between the limited number of dietitians and physical therapists assigned and the workload they were expected to accomplish. The patient load of Army hospitals in Japan was soaring and there was no pool of officers from which to supplement the shortages in these professional categories. The situation was especially challenging for the dietitians who, for the first time during a war, were in complete charge of the food service. Since this included service for hospital personnel, as well as for patients, it was necessary to begin these operations as soon as the hospital unit arrived at its destination. Whenever possible, additional dietitians were assigned on a temporary basis to assist in the enormous task of organizing the food service departments. This organization was further complicated because many of these units occupied buildings which were originally constructed for Army barracks, post offices, or airplane factories, all of which had been quickly renovated for hospital use.

In July and August 1950, the situation in Korea was critical. The desperate fighting; the terrain of swampy, stagnant rice paddies and numerous mountain ridges; the monsoon season with terrific rains producing mud, mildew, rot, and rust; and the sultry summer heat generating flies, fleas, lice, and diseases, such as malaria and hepatitis, sharply reduced the number of our fighting men even after reinforcements had been received.

During this time and in the fall of 1950, rapid expansion of the Army and the increased needs of the Army Medical Service continued. The patient load showed a general increase in hospitals in the continental United States, reflecting in part, the tremendous increase of patient population in hospitals in the Far East Command. It was necessary to reopen the three general hospitals and the two station hospitals which had been closed in the spring and summer of 1950. The influx of sick and wounded soldiers from Korea necessitated the expansion of the actual

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bed capacity of hospitals in Japan beyond that originally authorized. For example, the 35th Station Hospital, Kyoto, operated as a 250-bed unit in June 1950. It was designated as the hepatitis center of Japan in September 1950 and in November 1950 was reorganized as a 300-bed unit. Because the Korean War necessitated expansion, the actual bed capacity exceeded 2,000 and actual census reached 1,950 before the end of 1950.[4]

Some of the hospitals in Japan operated annexes in conjunction with their central organization. This necessitated the duplication of ancillary services with an attendant increased professional requirement. This duplication was true for the dietitians and physical therapists especially in the larger hospitals: Tokyo Army Hospital, Tokyo, Osaka Army Hospital, Osaka, and the 35th Station Hospital.

The requirements for additional Women's Medical Specialist Corps personnel continued to rise. By the end of March 1951, the estimated number of corps officers required in the care of sick and wounded soldiers was over 900.[5] The corps was functioning at approximately 50 percent of this required number. In July the required number was 1,075.[6] At this time, the active-duty strength of the Army had increased to approximately 1,532,000 which was about 200 percent greater than at the beginning of the Korean War. The Women's Medical Specialist Corps had an increase of about 60 percent during this period. (See Appendix M, p. 617.) The chronic and critical shortage of corps officers continued throughout the Korean War years. The strength on 30 June 1953 was 607, 201 Regular Army and 406 Reserve officers.

Procurement

First involuntary recall

It was in a milieu of lean procurement potential that the Korean War broke out in 1950. Obviously, drastic measures were required to procure sufficient personnel to meet even minimum requirements. Abandoning hope of filling necessary positions of dietitians, physical therapists, and occupational therapists by the voluntary return of Reserve officers to active duty, the Chief, Women's Medical Specialist Corps, on 30 August 1950, recommended the initiation of an involuntary recall of Reserve officers.

On 21 September, the Department of the Army notified the Commanding Generals, Continental Armies, of the involuntary recall of 145 Reserve Officers in the grades of captain and lieutenant:[7] 70 dietitians, 40 physical therapists, and 35 occupational therapists. Members of medical Reserve units were not subject to recall, as individuals in their respective units had not yet been alerted for active duty. Each Army area

[4] Annual Report, 35th Station Hospital, Kyoto, Japan, 1950.
[5] From strength and requirement cards, 30 Apr. 1950–31 Mar. 1956, posted monthly and maintained in Office of the Chief, Women's Medical Specialist Corps.
[6] Ibid. Strength as of 31 July 1951.
[7] Letter, Office of The Adjutant General, Department of the Army, to Commanding Generals, Continental Armies, 21 Sept. 1950, subject: Recall of Women Officers and Enlisted Personnel.

was given a quota and Army commanders were advised that selections should be made whenever feasible from among Reserve officers who had not had previous military service or from among those with the shortest tours of duty. Furthermore, Women's Medical Specialist Corps Reserves with dependents under 18 years of age were not considered eligible and were separated from the Officers' Reserve Corps. Selection criteria exempted Reserve officers who held key administrative or teaching positions in hospitals or other institutions conducting training courses or whose entry on active duty would jeopardize the health of the community in which employed.

In determining the selection of officers, Army commanders were to enlist the cooperation and assistance of the appropriate professional organizations, either state, local, or both. In addition, they were authorized, if they so desired, to assign an officer of the corps on temporary duty in their headquarters to assist in this program. If such an officer was not available, a requisition could be made to the Department of the Army.

It was hoped that the involuntary recall could be accomplished in three increments, with officers reporting for duty on 15, 22, or 29 November for a period of 21 months. As of 31 June 1951, 82 officers—34 dietitians, 40 physical therapists, and 8 occupational therapists—had been assigned to active duty as a result of this program.[8]

Appointment of civilian consultants

In view of the critical personnel shortage, three civilian consultants to the Women's Medical Specialist Corps had been appointed by The Surgeon General in the fall of 1950: Miss Mable M. MacLachlan, dietitian,[9] Miss Mildred Elson, physical therapist, and Mrs. Winifred C. Kahmann, occupational therapist (fig. 101). These women, outstanding leaders in their respective professions, had knowledge of the current personnel picture in civilian life. They met with the chief and assistant chiefs of the corps and other staff officers in the Surgeon General's Office on 16 and 17 January 1951. Statistics presented by the consultants indicated that there was not a sufficient number of graduates in each of the three specialties to meet both current civilian and military needs. The widespread use of these specialists in industry, commercial organizations, schools, colleges, and hospitals had created new and expanding demands. The consultants presented little hope for improvement in immediate procurement. They agreed, however, to assist in publicizing the needs of the Army and heartily endorsed a long-range plan for increasing the potential sources of these specialists through direct mailing of informational material from the Surgeon General's Office to vocational guidance directors in high schools and to career guidance advisers in colleges and universities.

Other conferences with the consultants during this period, held in the

[8] Semiannual report, Women's Medical Specialist Corps, 1 Jan.–30 June 1951, p. 7.
[9] Miss MacLachlan was succeeded by Miss Alta B. Atkinson in February 1953.



FIGURE 101—Civilian consultants meet in the Surgeon General's Office to discuss Women's Medical Specialist Corps personnel procurement, January 1951. Left to right: Col. Emma E. Vogel; Miss Mable MacLachlan, Educational Director, American Dietetic Association; Maj. Gen. George E. Armstrong, Deputy Surgeon General; Mrs. Winifred C. Kahmann, President, American Occupational Therapy Association; and Miss Mildred Elson, Executive Director, American Physical Therapy Association.

Surgeon General's Office in January 1952 and March 1953, strengthened the liaison between the military and civilian professional groups. They were of assistance in translating the personnel needs of the military to the national professional organizations concerned as well as to the colleges and universities producing graduates in these professions.

Voluntary recall

In January 1951, the situation in Korea warranted further expansion of the Army Medical Service. Maj. Gen. George E. Armstrong, The Surgeon General, announced a plan by which it was hoped to recruit 572 additional Women's Medical Specialist Corps Reserve officers for voluntary recall by 30 June 1951. This number included 247 dietitians, 179 physical therapists, and 146 occupational therapists. In January, it was anticipated that this quota could be met on a voluntary basis; however,

by 30 June 1951, only 26 dietitians, 9 physical therapists, and 20 occupational therapists had been obtained.[10]

Second involuntary recall

In the spring of 1952, a careful and intensive study of anticipated needs and results of various procurement programs indicated a shortage of nearly 400 Women's Medical Specialist Corps officers by the end of the year. There was little, if any, encouragement in the outlook for the immediate procurement of these specialists. The needs were urgent and a further shortage could be expected since the officers then serving on duty as a result of the first involuntary recall would soon be due for separation.

By 30 June 1952, the list of Women's Medical Specialist Corps Reserve officers not on active duty totaled 242.[11] Since the list had been reevaluated, it was assumed that these officers would be available for duty, if needed. For the most part, they were officers who had been in Reserve training with medical units, so a call to active duty during an emergency was not wholly unexpected.

On 23 July 1952, announcement of the second involuntary recall of 125 medical specialists, 70 dietitians, 31 physical therapists, and 24 occupational therapists, was sent to the Commanding Generals, Continental Armies. Public release of this program was made in Washington, D.C., 1 week later. Mrs. Anna M. Rosenberg, Assistant Secretary of Defense for Manpower, directed that the screening of these specialists be accomplished by the National Advisory Committee of the Selective Service System then being used in the selection of doctors and dentists. The professional organizations cooperated with the national, state, and local advisory committees in the selection of individual officers. The screening was to assure that no individual considered essential to the national health, safety, and interest would be required to leave her civilian position. With this method of screening, equitable consideration of both military and civilian needs was achieved. The criteria for deferment were the same as those for the first involuntary recall. Those officers who had been recalled after 25 June 1950 were not affected by this second recall program.

A delay in reporting to active duty was experienced. This delay was for clearance by the National Advisory Committee, Selective Service System, and the requirement that the applicant had to report for duty within 120 days of taking a final physical examination. Nominees did not report until April, May, and June, 1953.[12] As of 30 June 1953, only 15 officers had been recalled to active duty:[13] 9 dietitians, 5 physical therapists, and 1 occupational therapist. Although the original quota for

[10] See footnote 8, p. 375.
[11] See footnote 5, p. 374. Strength as of 30 June 1952.
[12] Semiannual Report, Women's Medical Specialist Corps, 1 July–31 Dec. 1952, p. 5.
[13] Semiannual Report, Women's Medical Specialist Corps, 1 Jan.–30 June 1953, p. 9.

physical therapists was 31, the actual needs of that section when the program was implemented justified the recall of only 5 officers.

Assignment of Women's Medical Specialist Corps procurement officers to Army area headquarters

In May 1950, before the Korean War began, the Chief, Women's Medical Specialist Corps, had requested assignment of corps officers to Army area headquarters to accelerate procurement efforts in the event of an emergency. The Surgeon General did not approve at that time. In September 1950, Colonel Vogel resubmitted her request for area headquarters representation and reviewed the procurement actions which had been taken since the extension of the integration period. In spite of all efforts, recruitment of personnel had been extremely poor. Furthermore, the decentralization to Army headquarters of appointments in the Officers' Reserve Corps had placed the processing of applications and appointments on the Army headquarters procurement nurse, a duty more properly the concern of a Women's Medical Specialist Corps officer.

The Surgeon General concurred in the second request but only approved assignment of these officers on a temporary-duty basis with the understanding that the necessity for continuing these positions was to be evaluated after 90 days. Third, Fourth, and Fifth U.S. Armies responded readily, and by October, Women's Medical Specialist Corps officers were assigned temporarily to officer procurement duty. This was another step in integrating corps thought and action as these officers presented the three professions in the light of a career in the Women's Medical Specialist Corps.

By January 1951, the Women's Medical Specialist Corps officers in Headquarters, Fourth and Fifth U.S. Armies, were permanently assigned to procurement duty. In 1951, a Corps officer was permanently assigned to Sixth U.S. Army headquarters, and two were placed on temporary duty: one each in First and Second U.S. Army headquarters. (See Appendix N, p. 619.)

All procurement officers were ordered to Washington on 26 and 27 April 1951 to attend a joint Army Nurse Corps-Women's Medical Specialist Corps procurement conference. In addition to an indoctrination to their duties, emphasis was given, through talks and discussions, to the significance of public relations and publicity in their procurement activities. But more than that, the attention of the Women's Medical Specialist Corps was focused on sources of supply for dietitians, physical therapists, and occupational therapists.

The national shortages of dietitians, physical therapists, and occupational therapists only served to emphasize the corps problem.[14] In No-

[14] Memorandum, The Surgeon General (Lt. Col. Francis C. Nelson, MSC, Technical Information Office), for Chief, Military Personnel Procurement Service, 21 Nov. 1951, subject: Intensified Procurement for Women's Medical Specialist Corps.

vember 1951, there were only 5,000 hospital dietitians and over 600 unfilled civilian positions; the Army deficit was 192. There were approximately 4,500 physical therapists, 1,000 unfilled positions, and a projected civilian need within 10 years of 16,000. The Army deficit was 140. There were only 3,000 occupational therapists to meet a civilian need which within a 5-year period was expected to expand to 8,000. The Army deficit was 143.[15]

In December 1952, another joint conference of Army Nurse Corps-Women's Medical Specialist Corps procurement officers was held in the Surgeon General's Office. The Women's Medical Specialist Corps officers included two for whom orders for permanent assignment in Second and Third U.S. Army headquarters, respectively, had been requested. For the first time, the corps had a representative in each of the six Army headquarters and could look forward to a widespread geographic attack on the problem of procurement.

During 1953, the first impact of the activities of procurement officers on the civilian and educational world became evident. At that time, they submitted monthly reports on their activities to the Surgeon General's Office, and the variety and scope of these activities were amazing. The procurement officers had found not only a profound lack of knowledge of the Women's Medical Specialist Corps in both Army and civilian circles, but also an accompanying interest and curiosity. Reserve Officers' Training Corps personnel in the land grant colleges, officer and enlisted personnel in the recruiting stations, and guidance and placement personnel in colleges and universities had welcomed information about the corps.

The procurement officers, in presenting the role of the three professions in the Army, recruited for both the professions and the Army. They talked to civic groups, made radio and television appearances, conducted individual interviews, interviewed related college personnel, and visited high schools and colleges. Although the Women's Medical Specialist Corps had been represented by procurement officers in all six Army areas for only a short time, the extent of their activities was considered to be of sufficient interest to be the subject of the 1953 exhibit prepared for the conventions of the three professional associations.

Procurement organization and activities at Department of the Army level

The amount of money allocated for the Army Medical Service recruiting programs depended annually on priorities, listed in terms of all personnel needs. Unfortunately for the Women's Medical Specialist Corps, numerical objectives were often the deciding factor and their needed numbers were few in comparison with the other corps.

Work was started in the winter of 1951 on a vocational guidance project to interest high school students and those in the first 2 years of col-

[15] See footnote 5, p. 374. Strength as of 31 Oct. 1951.



FIGURE 102—Representatives of the Army Medical Service participating in the February 1951 Philadelphia contact camp meeting planned by Col. Harold W. Glattly, MC, Second U.S. Army Surgeon, Fort George G. Meade, Md. Left to right, seated: Col. Emma E. Vogel, Chief, Women's Medical Specialist Corps; Brig. Gen. Isidor S. Ravdin, member, Department of Defense Armed Forces Medical Policy Council; Colonel Glattly; and Col. H. A. Murphy, Chief, Pennsylvania Military District, Philadelphia. Standing: Maj. Cecil W. Hemperly, MSC, Personnel Division, Surgeon General's Office; Col. Charles B. Henry, MC, Medical Section, Headquarters, Army Field Forces, Fort Monroe, Va.; Lt. Col. Elizabeth G. Mixson, Chief, Nursing Division, Second U.S. Army, Fort Meade; and Col. Laurence A. Potter, Special Assistant to The Surgeon General, Washington, D.C.

lege. The project resulted in a kit consisting of fact sheets on dietitians, physical therapists, and occupational therapists, an overall fact sheet on the corps, and a poster. In the late spring of 1952, approximately 8,000 of these kits with up-to-date brochures were distributed to vocational guidance counselors throughout the country.[16] During 1952, the brochure "The Chance of Your Lifetime" was replaced by "Careers That Count." In the spring of 1953, it, together with a new poster based on "Careers That Count," was distributed to Women's Medical Specialist Corps officers. A general mailing of informational material continued through the fall of 1953.

Paid advertising in the *Journal of the American Dietetic Association, The Physical Therapy Review,* and *Occupational Therapy and Rehabil-*

[16] Semiannual Report, Women's Medical Specialist Corps, January–June 1952, p. 2.

itation was given a one-issue trial in June 1950. Funds for advertising were temporarily cut off in 1951, but full-page advertisements appeared regularly thereafter in the professional journals as well as in *Practical Home Economics* and *Career Index* magazines. The Women's Medical Specialist Corps was included in an Army Nurse Corps advertisement which was to be used by interested individuals to request further information on either corps. Responses to these advertisements were gratifiying, but the results were difficult to evaluate.

Many media were utilized to focus attention on the opportunities in the three professions and in the Women's Medical Specialist Corps. Attention continued to be directed to colleges and universities preparing young women for these professions and the directors and students of the professional education courses throughout the country. Articles in the professional journals, leading magazines, service magazines and bulletins, and newspapers were used extensively to publicize professional activities and interesting events of the corps and its members. Members of the corps attended and participated in national, district, state, and local meetings of the professional associations and numerous civic and military organizations (fig. 102). Other publicity included exhibits at professional meetings, participation in radio and television broadcasts, and the use of television clips depicting the activities of the officers in the three sections. Numerous open-house tours were given for students and organizations.

Army students in the dietetic internship, the physical therapy course, the occupational therapy affiliation, and the occupational therapy course which was opened in 1952 were encouraged to visit their alma maters to interest other students in the Women's Medical Specialist Corps education programs. This personal experience approach had great appeal to both the students and the faculty. Participation by the Army students was handicapped by lack of funds with which to reimburse them for travel expenses.

Defense Advisory Committee on Women in the Services

On 11 August 1951, the Defense Advisory Committee on Women in the Services was established by General of the Army George C. Marshall, Secretary of Defense. Its function was to provide the Secretary of Defense with guidance and advice on policies relating to women in the services. The committee was initially composed of approximately 50 women of note in the professional and business worlds or who were prominent in welfare and civic activities. Beginning in 1955, representatives from the profession of dietetics, physical therapy, and occupational therapy were included.

The original committee met quarterly in the Office of the Secretary of Defense with the directors of the nine women's services (fig. 103) and reported directly to the Assistant Secretary of Defense for Manpower. After 1953, the meetings were held semiannually. A secretariat composed



FIGURE 103—Directors of the nine women's military services, 1951. Left to right, seated: Capt. Joy B. Hancock, Chief, WAVES; Col. Mary A. Hallaren, Chief, Women's Army Corps; Col. Katherine A. Towle, Chief, Women Marines; and Col. Mary J. Shelly, Chief, Women in the Air Force. Standing: Col. Ruby F. Bryant, Chief, Army Nurse Corps; Col. Miriam E. Perry, Chief, Medical Specialists, USAF; Capt. Winnie C. Gibson, Chief, Nurse Corps, USN; Col. Emma E. Vogel, Chief, Women's Medical Specialist Corps; and Col. Verena M. Zeller, Chief, Nurse Corps, USAF.

of an executive secretary and assistants, appointed on a rotating basis from the line components of the various women's services, was established in the Office of the Secretary of Defense to implement the work of this committee.

The urgent problem of procurement of women for the Armed Forces was the first project presented to the committee. A subcommittee concerned with the procurement of professionally qualified nurses, dietitians, physical therapists, occupational therapists, and students for these professions was established with Mrs. Mary Todhunter Rockefeller as its first chairman. Other subcommittees relating to the various areas of interest were also established.

The results of the Defense Advisory Committee on Women in the Service activities in the interest of procurement were largely intangible. Perhaps one of their most important contributions was the education of the public in regard to women in the services. All committee members were given a thorough orientation to the life and activities of military women. This was accomplished by the dissemination of descriptive material, discussions at the meetings, and field visits by committee members to typical military installations (fig. 104). With this background

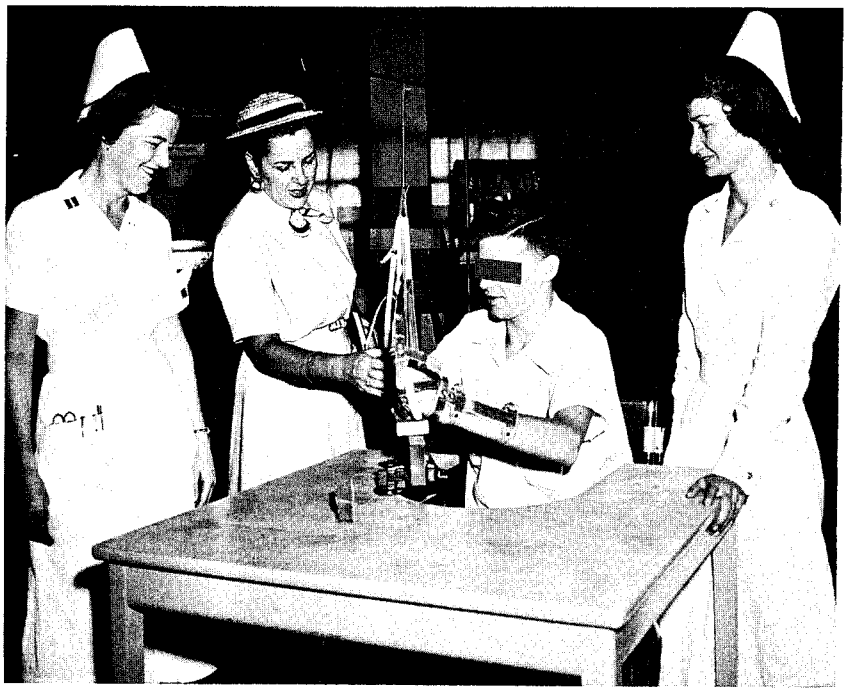


FIGURE 104—A member of the Defense Advisory Committee on Women in the Services visiting the Occupational Therapy Section, Brooke General Hospital, Fort Sam Houston, Tex., August 1952. Left to right: Capt. Mary K. Berteling, Chief Occupational Therapist; Mrs. R. Max Brooks, committee member; patient; and 1st Lt. Margaret Lund, occupational therapist.

each member was able to interpret to her community and to those in her particular field of endeavor, the life of women in the services and the career opportunities afforded them as well as the urgent need for additional service personnel.

This interpretation also served to disabuse the public of many unfortunate false impressions concerning women in the services. Each Defense Advisory Committee on Women in the Services member assisted in the campaign of public education in accordance with her own particular talents and area of influence. They assisted the procurement officers in their own local areas by opening doors to helpful local contacts and obtaining publicity in newspapers, on the radio, and on television. Committee members professionally associated with advertising, magazines, television, and radio obtained national as well as local publicity for service women. Members in the field of education were helpful in publicizing career opportunities to students. As a group, the Defense Advisory Committee on Women in the Services sponsored the development of brochures directed toward men's and women's organizations, parents,

prospective recruits, and the recruit herself; the production of a short motion picture "The Real Miss America," a song "The Girls Are Marching," and various other procurement devices were also produced for use by the women's services.

Grades and Promotions

It was fully realized that high morale was essential to the success of any program. The fact that no temporary promotions to the grade of major had been made since the establishment of the Women's Medical Specialist Corps was of great concern to its members as well as to the chief and assistant chiefs of the corps. Finally, in the fall of 1950, temporary promotions to the grade of major were authorized.[17] By 31 December 1950, 38 officers were serving in this temporary grade: 35 Regular Army and 3 Reserves.

On 16 February 1952, the following Regular Army spaces were authorized for the Women's Medical Specialist Corps: major, 35 (5 percent) ; captain, 315 (45 percent) ; lieutenant, 350 (50 percent) ; a total of 700 spaces.[18] All of the permanent major spaces were not filled by July 1953, although promotions to the temporary grade continued to be made. (See Appendix O, p. 621.)

Appointments and Separations

Regular Army

While the number of Regular Army members increased considerably during the Korean War, the percentage of Regular Army members in relation to overall strength showed a gradual decrease. (See Appendix M, p. 617.) A decrease in the percentage of Regular Army strength is expected in times of emergency, for expansion in numbers at that time is due to an increase in the numbers of Reserve officers on active duty.

The second integration ending 16 May 1951 resulted in 61 Regular Army appointments. Six of these appointments were made from the Inactive Reserves, three from civilian status, and the remainder from the Reserve on active duty. There were 96 Regular Army appointments in the Women's Medical Specialist Corps during fiscal years 1951, 1952, and 1953: 38 dietitians, 43 physical therapists, and 15 occupational therapists.

Soon after the outbreak of hostilities in Korea and after the involuntary recall program of Women's Medical Specialist Corps officers, resignations of Regular Army officers were frozen with the exception of those for reasons of extreme personal hardship. Previously, retirement could be requested by an officer after completion of 20 years of service. The Defense Appropriation Bill, passed in October 1951, contained pro-

[17] Semiannual Report, Women's Medical Specialist Corps, January-June 1950, p. 10.
[18] See footnote 16, p. 380.

visions, however, which restricted the use of funds for retirement pay of any commissioned member of the Regular Army, Navy, or Air Force who was voluntarily retired after the enactment of the law.[19] During fiscal year 1955, this restriction on funds was withdrawn.

Officers' Reserve Corps

During fiscal years 1950-53 (table 16), 182 dietitians, 135 physical therapists, and 104 occupational therapists were appointed in the Officers' Reserve Corps with concurrent call to active duty or were called to active duty from the Reserve component. The number of Women's Medical Specialist Corps officers who graduated from the professional education programs conducted by the Army during the same period was 205. (See Appendix P, p. 623.)

At the outbreak of the Korean War, a category system was in effect which governed the period of service for which Reserve officers coming on active duty agreed to serve. Many Reserve officers serving on active duty were separated following the expiration of their category commitments. A considerable number, however, elected to remain on active duty. Approximately 50 percent of the 216 officers separated during this period were separated because of the expiration of category commitments. Of the remaining officers separated, 14 applied and were accepted for appointment in the Regular Army.

TABLE 16—*Number of graduate dietitians, physical therapists, and occupational therapists called to active duty, fiscal years 1950–53*

Fiscal year	Dietitians	Physical therapists	Occupational therapists	Total
1950	11	5	16	32
1951	66	65	32	163
1952	46	16	15	77
1953	59	49	41	149
Total	182	135	104	421

Source: Women's Medical Specialist Corps annual reports, Surgeon General's Office.

Inactive Reserve Officers

Available records indicate that 561 Women's Medical Specialist Corps Reserve officers were not on active duty as of 1 July 1950. Of this number, there were 167 dietitians, 332 physical therapists, and 62 occupational therapists.[20] On 30 June 1953, there were 288 Inactive Reserve officers: 76 dietitians, 135 physical therapists, and 77 occupational thera-

[19] * * * unless such member was retired because of
(1) being unfit to perform the duties of his office, rank, grade, or rating by reason of physical disability incurred in line of duty, or
(2) achieving the age at which retirement is required by law, or
(3) whose application is approved in writing by the Secretary of Defense stating that the retirement is in the best interests of the service, or, is required to avoid cases of individual hardship. (Public Law 179, 82d Congress, approved 18 Oct. 1951.)

[20] See footnote 5, p. 374. Strength as of 30 June 1950.

pists.[21] The disparity between the 1950 and 1953 figures for dietitians and physical therapists is primarily due to termination of Reserve commissions of women officers with dependents under 18 years of age since they would not be available for immediate active duty.

In the fall of 1950, preparation was begun on extension courses geared specifically to Women's Medical Specialist Corp officers. These courses not only provided an additional worthwhile way for Inactive Reserve officers to earn points toward retirement but also served as a means by which these officers could keep abreast of current Army policies and procedures as well as current professional developments relating to their specialties. The courses were prepared by corps officers assigned to the Medical Field Service School, Fort Sam Houston, Tex. Following publication, a number of Inactive Reserve officers as well as some active-duty officers enrolled in the Army extension program.

Personnel Administration

During this period of Women's Medical Specialist Corps history, attention was necessarily focused on the procurement of additional officers to meet the needs of the Army Medical Service during the Korean War. At the same time, the chief and assistant chiefs of the corps were vitally concerned with career planning which, in turn, was closely related to the procurement and retention of personnel.

Factors affecting retention

The Army in looking for qualified personnel continuously appraised the reasons given by those officers who were leaving the service. Examination of records, interviews by the chiefs in hospitals as officers left active duty, and general informal discussions revealed that Women's Medical Specialist Corps officers left the service for one of several reasons.

Separation because of marriage was the most common reason. Only 7 officers were separated by reason of marriage during the first 6 months of 1950 as compared with 30 officers separated for this reason in a similar period in 1953. From 1 July 1950 to 1 July 1953, 107 were separated because of marriage.[22]

Assignments made in the best interest of the service were not always considered desirable by the individual. In many instances, it was impossible to assign officers to a station of their choice, although these choices were given every possible consideration.

Frequency and length of oversea assignments as well as lack of stability in assignments were reasons for discontent. The increased requirement for personnel overseas necessitated shortened tours at other stations. While oversea assignments were made from among volunteers whenever possible, failure to do so in some cases caused a real hardship for those

[21] Ibid. Strength as of 30 June 1953.
[22] Semiannual Reports, Dietitian, Physical Therapist, and Occupational Therapist Sections, Women's Medical Specialist Corps, July 1950–June 1953.

individuals. A 3-year oversea tour, considered by many Women's Medical Specialist Corps officers to be too long for them to be away from home, was not standard for all branches of the service and thereby added to the dissatisfaction.[23]

Many of the young officers in the Women's Medical Specialist Corps were on duty fulfilling their category commitment after completing their training in the professional educational programs. Having had both their professional education and experience in the Army, many were more interested in working in a civilian establishment than they were in the job security and retirement program which the Army offered. The physical and occupational therapists were especially interested in civilian experience. Many felt that they were being shortchanged in experience in total rehabilitation programs because of the Army policy of transferring long-term or chronic patients to Veterans' Administration hospitals.

The problem of adequate and suitable housing for women officers of the Army Medical Service caused much dissatisfaction and had adverse effects on their procurement and retention on duty. There was a strong trend of opposition to traditional dormitory-type quarters. The officers desired apartment-type quarters or houses, comparable to those of their counterparts in the civilian professions. This concept had not yet been endorsed by the Army. While other aspects of service in the Women's Medical Specialist Corps were attractive in many ways, there was no doubt that the problem of housing had to be resolved if women were to be attracted to and retained in the service. A temporary measure of permitting women officers to live off post and receive quarters allowance was practiced in a few areas. Without a standard policy to be followed on all Army posts, this measure failed to solve the problem.

The Women's Medical Specialist Corps grade structure and promotions were of chronic concern. These required study, revision, and liberalization in order to make grade and pay commensurate with experience and responsibility.

All of these internal factors which influenced the retention of Women's Medical Specialist Corps officers on active duty required time and, in some cases, legislation to correct.

Career management

A well-defined and progressive career management program was considered necessary if the potential abilities of individual officers were to be developed and utilized with maximum effectiveness. The expansion of the Army Medical Service necessitated a large percentage of Women's Medical Specialist Corps officers being assigned in key administrative, supervisory, and teaching positions. Preparation of officers for such positions was of primary concern. At this time, for those few officers working

[23] In December 1953, the length of tour in the Far East Command was reduced to 2 years. This reduction later applied to all oversea commands.

toward a master's degree, the field of study was limited primarily to advanced work in the scientific aspects of their respective professions. Officers in administrative, teaching, and supervisory positions and those being groomed for such positions benefited from this type of study without question as did those whom they supervised or instructed. A definite need was recognized, however, for specific study in personnel management, counseling, human relations, teaching methods, and communication.

In the majority of installations where the food service, the physical therapy section, or the occupational therapy section was not functioning as smoothly or efficiently as it should be, it was apparent that the trouble was more often caused by lack of good management than by lack of professional knowledge and skill. A pilot symposium for physical and occupational therapists on leadership and supervisory techniques was, therefore, developed and approved in the Surgeon General's Office and conducted at the Medical Field Service School in May 1951. This symposium on matters related to the areas already mentioned was the forerunner of the Institute for Women's Medical Specialist Corps officers which came to fruition in 1955.

Long and short courses in military and civilian institutions were available to Women's Medical Specialist Corps members. Seven dietitians, four physical therapists, and one occupational therapist completed the master's degree program. Thirty-four officers (10 dietitians, 9 physical therapists, and 15 occupational therapists) attended short courses conducted at civilian institutions. Sixty-seven attended military courses from June 1950 to July 1953. (See Appendix L, p. 615.)

Medical Service Women's Officers' Course (Basic Military Orientation Course)

In October 1952, the length of this course was increased to 8 weeks. At this time, a recommendation was made by the Chief, Women's Medical Specialist Corps, that consideration be given to the establishment of a 4-week course especially adapted to the needs of corps officers. This recommendation was not approved; attendance at the course was discontinued for corps officers as of March 1953. Hospitals were instructed to include certain basic military orientation in the professional educational programs or in the initial assignment of newly graduated officers. This was an emergency measure which proved to be an unsatisfactory procedure for the orientation of newly commissioned officers.

The basic course was revised in 1953 to provide 4 weeks of common instruction for all Army Medical Service officers. Further weeks of professional orientation were provided for some corps but since three specialties were represented in the Women's Medical Specialist Corps, it was believed that more specific orientation, if needed, could be given in the first assignment. Beginning in July 1954, Women's Medical Specialist Corps officers were routinely assigned to the basic course.

UNIFORMS

Uniforms were of vital concern to the members of the three women's corps of the Army and without question influenced the morale of the women who wore them as well as the procurement of potential candidates for the service.

When the new taupe wool uniform was first displayed in September 1950 and worn by selected models from members of the women's corps, reactions were varied. While the new uniform was a drastic departure from traditional ideas it was considered by some to be attractive on the young women selected to model it. Unfortunately, however, when it became available for general wear in 1951, it proved not to lend itself to wear by women of various sizes and proportions. The pattern of the jacket was so complex that civilian tailors declined to make uniforms to order; alterations were complicated and rarely successful. As a consequence, the number of ill-fitting uniforms was appalling. In addition, the collar which fitted close to the neck was hot and uncomfortable.

The overcoat was particularly unattractive, bulky, and ill-fitting and met with even greater dissatisfaction. The number of complaints concerning the raincoat resulted in a recommendation by the Chiefs, Women's Medical Specialist Corps and Army Nurse Corps, on 21 June 1951, that this item be withdrawn from the market until such time as it could be rendered water repellent, an obviously basic requirement for a raincoat.

There was no summer duty uniform except the taupe cotton dress; it also caused much dissatisfaction. The design and material of this dress was such that the maintenance of a neat appearance was practically impossible. The unattractiveness and impracticality of this dress was so marked that many preferred to wear the taupe wool uniform all summer.

The dissatisfaction and problems engendered by the taupe uniform were discussed at frequent conferences attended by representatives of the Research and Development Division, Quartermaster General's Office, Director, Women's Army Corps, Chief, Army Nurse Corps, and Chief, Women's Medical Specialist Corps. Changes in the uniform to make it more acceptable were studied by the chiefs of the women's corps, but it became increasingly apparent that a satisfactory uniform could be achieved only by a complete change in the basic design. (See Chapter XII, p. 420–424.)

HOUSING

The Defense Advisory Committee on Women in the Services, in addition to their activities relating to procurement, directed their attention toward the problem of the woefully inadequate housing provided women in the service. In November 1951, the committee recommended to the Secretary of Defense that existing housing as well as future housing

for enlisted women be brought in accord with the committee standards as soon as funds would permit.

The committee recommendations, identical with those made earlier by the Department of Defense Housing Commission, set the following minimum standards for housing facilities for women:[24]

a. Private sleeping quarters for personnel other than recruits.
b. Cubicle-type toilet facilities.
c. Both bathtub and shower facilities.
d. Adequate dayroom (recreational space) for women.
e. Adequate reception room for receiving and entertaining male personnel.
f. Cooking facilities.
g. Adequate laundry and drying space.
h. Adequate storage space.
i. Adequate collateral equipment (chairs, tables, mirrors, lamps, etc.).

This recommendation was directed primarily toward improving housing for enlisted women. Information furnished in 1952 by each of the military departments indicated progress toward compliance with the recommendations. No final action had been taken by July 1953 on a second recommendation concerned with determining the adequacy of quarters for single officers.

SUMMARY

There were innumerable opportunities for various professional and community contacts which increased understanding between those in the military and those in civil life. The cumulative effects of various publicity measures and the liaison activities gradually became apparent in a more widespread knowledge of the Women's Medical Specialist Corps, its mission, and the opportunities it offered. This was gratifying from any point of view but from the point of view of procurement it was imperative, for the corps could not have otherwise competed against the growing demands for qualified personnel in the health career field.

[24] Memorandum, Lt. Comdr. Elinor D. Rich, Executive Secretary to the Defense Advisory Committee on Women in the Services, Office of the Assistant Secretary of Defense, for Colonel Nell Wickliffe, WMSC, 9 June 1954, subject: Housing for Women Officers, with inclosure.

CHAPTER XII

The Period of Stabilization, July 1953 to January 1961

Colonel Harriet S. Lee, USA (Ret.), Colonel Ruth A. Robinson, USA (Ret.), Lieutenant Colonel Beatrice Whitcomb, USA (Ret.), and *Lieutenant Colonel Hilda M. Lovett, USA (Ret.)*

ORGANIZATION

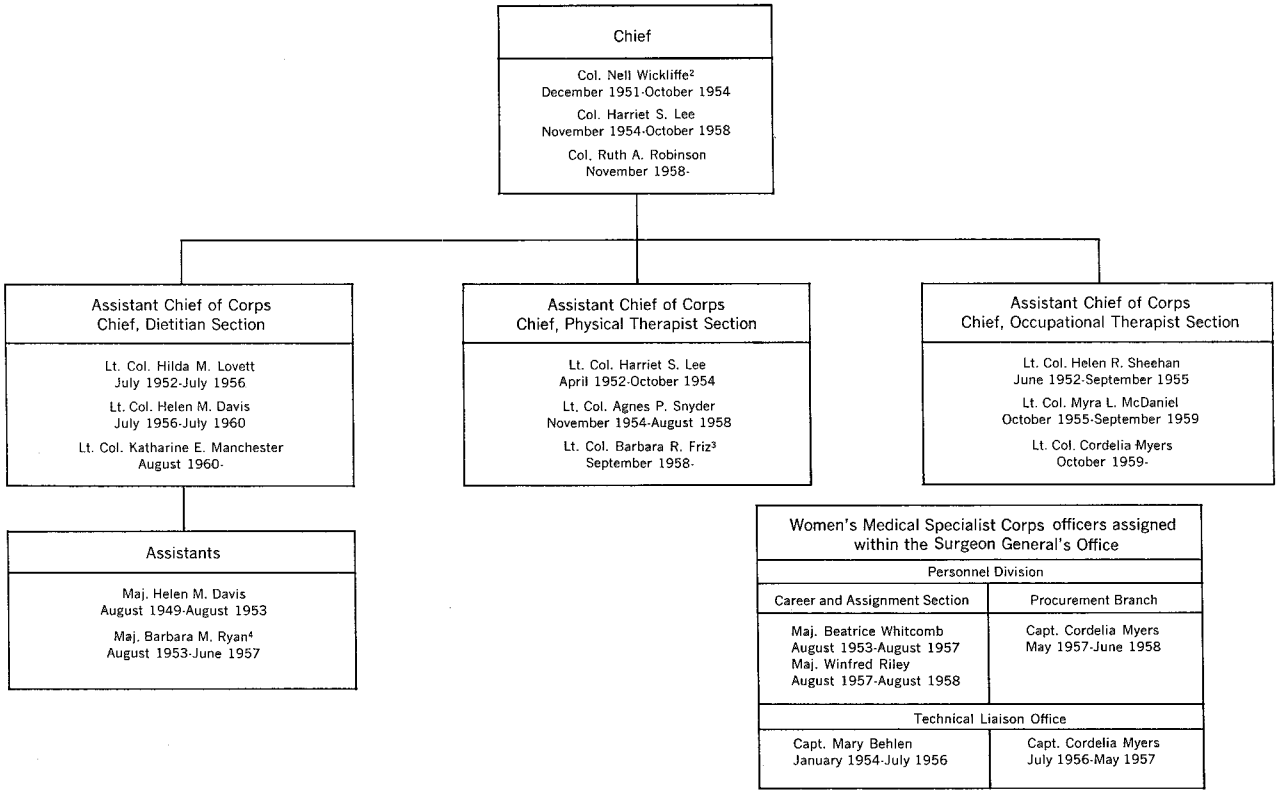
On the sixth anniversary of the Women's Medical Specialist Corps, 16 April 1953, the members of the corps could look to the future with pride in the record of their achievements during the Korean War. Because of the shortage of personnel, the number of corps officers assigned to the Surgeon General's Office had been reduced to five (chart 9). In August 1953, however, as a result of the expanding career management plan for the Army Medical Service, Maj. (later Lt. Col.) Beatrice Whitcomb was assigned to the Personnel Division as Chief, Women's Medical Specialist Corps Assignment Section (later Army Medical Specialist Corps Assignment and Career Planning Section).

To help meet needs in personnel procurement, Capt. Mary Behlen, Women's Medical Specialist Corps procurement officer at Headquarters, Second U.S. Army, was assigned in January 1954 to the Technical Liaison Office, Surgeon General's Office, to assist in publicity for the Army Nurse Corps and for her own corps. When Captain Behlen resigned her commission in 1956, Capt. (later Lt. Col.) Cordelia Myers replaced her.

Effective on 23 February 1954, a reorganization in the Surgeon General's Office changed the status of the Office of the Chief, Women's Medical Specialist Corps from division level to staff level. This change was deemed to more nearly reflect the policymaking and advisory responsibilities of the chief of the corps. Lt. Col. Harriet S. Lee was appointed to this position on 1 November 1954 to succeed Col. Nell Wickliffe who retired. Maj. (later Lt. Col.) Agnes P. Snyder replaced Colonel Lee as Chief, Physical Therapist Section (fig. 105).

There were no further changes in Women's Medical Specialist Corps personnel in the Surgeon General's Office until October 1955 when Maj. (later Lt. Col.) Myra L. McDaniel (fig. 106) was appointed Chief, Occupational Therapist Section, replacing Lt. Col. Helen R. Sheehan who had requested early release from her statutory tour for compassionate reasons. In July 1956, Lt. Col. Hilda M. Lovett, Chief, Dietitian Section, completed her statutory tour and was replaced by Lt. Col. Helen M. Davis (fig. 107) who had served as an assistant

CHART 9—*Organization, Women's Medical Specialist Corps Division,*[1] *Surgeon General's Office, July 1953-January 1961*



[1] The Women's Medical Specialist Corps was renamed the Army Medical Specialist Corps in August 1955.
[2] Later Col. Nell W. Merrill. Colonel Wickliffe retired after 26 years of service.
[3] Formerly Lt. Col. Barbara M. Robertson.
[4] Later Lt. Col. Barbara M. House.



FIGURE 105—The new chief of the Women's Medical Specialist Corps and the new chief of the Physical Therapist Section listen to the reading of the special orders assigning them to the Surgeon General's Office. Left to right: Maj. David E. Marchus, Jr., JAGC, holds Bible on which the officers will take their oath of office; Maj. Agnes P. Snyder, incoming Chief, Physical Therapist Section; Maj. Gen. George E. Armstrong, The Surgeon General; Lt. Col. Harriet S. Lee, incoming chief of the corps; and Maj. Vincent P. Verfuerth, MSC.

in the section from 1949 to 1953. Both Colonel Sheehan and Colonel Lovett reverted to their permanent grades of major.

In May 1957, it was learned that Army Medical Specialist Corps spaces in the Surgeon General's Office were to be reduced from seven to three effective on 30 June 1958. This drastic cut in personnel was a result of an overall reduction in Department of Defense personnel. To implement the Army Medical Specialist Corps cut, higher authority recommended the following action:

1. Elimination of the second dietitian space in the Food Service Section, Domestic Operations Branch, Medical Plans and Operations Division, by 30 June 1957.

2. Immediate reassignment of the corps officer in the Technical Liaison Office to the Procurement Branch, Personnel Division, with elimination of the space as of 31 December 1957.

3. Immediate elimination of the Physical and Occupational Therapy Branches, Professional Division, and reassignment of chiefs of these



FIGURE 106—Lt. Col. Myra L. McDaniel, Chief, Occupational Therapist Section, Army Medical Specialist Corps, 1955–59.

branches to the Office of the Chief, Army Medical Specialist Corps. On 30 June 1958, these officers were to be assigned to Walter Reed General Hospital, Washington, D.C., from where, in addition to their duties as chiefs of their respective sections at the hospital, they would serve as consultants to The Surgeon General on professional matters relating to their specialties and to the Chief, Army Medical Specialist Corps, on matters relating to the corps.

The proposed action met with strong opposition by the chief and assistant chiefs. They believed that if the three positions retained were



FIGURE 107—Lt. Col. Helen M. Davis, Chief, Dietitian Section, Army Medical Specialist Corps, 1956–60.

those of the Chief, Army Medical Specialist Corps, the Chief, Dietitian Section, and the Chief, Army Medical Specialist Corps Assignment and Career Planning Section, professional section representation in the Surgeon General's Office would inevitably be lost.

Efforts were made to obtain an authorization of five Army Medical Specialist Corps officers in the Surgeon General's Office, the number considered to be the bare minimum for effective operation. When



FIGURE 108—Lt. Col. Barbara R. Friz, Chief, Physical Therapist Section, Army Medical Specialist Corps, 1958–62.

these proved unsuccessful, an attempt was made to obtain four spaces in order to assure the continued assignment of the chief and section chiefs in the Surgeon General's Office. This attempt was also fruitless.

Accepting the inevitability of accommodating to this drastic personnel cut and confronted with the necessity of operating within its limitation, the chief of the corps proposed to The Surgeon General the following organization to be effective on 1 July 1958:

1. The three Army Medical Specialist Corps spaces authorized in the Surgeon General's Office would be occupied by the chief of the corps and the chiefs of those two sections of the corps of which the current chief was not a member. The chief of that section of which the chief of the corps was a member would be assigned to Walter Reed

General Hospital with additional duties as a consultant to The Surgeon General on all professional and personnel matters pertaining to her section. It was the firm belief of the chief and section chiefs that if provision were not made for representation in the Surgeon General's Office of each professional group comprising the corps, adequate professional guidance and direction would not be available to the members of the unrepresented section and their effectiveness and morale would be seriously impaired.

2. The two section chiefs physically located in the Surgeon General's Office would be assigned to the office of the chief of the corps. It had been first proposed by the chief of the corps that the Chief, Dietitian Section, remain assigned to the Medical Plans and Operations Division, but a subsequent reorganization of that Division eliminated the Food Service Section in the Domestic Operations Branch.

The Surgeon General approved the proposal, and during fiscal year 1958, changes were implemented as programed. Captain Myers, with Department of the Army approval, however, was retained in the Personnel Division, Surgeon General's Office, until 30 June 1958 to complete several important procurement projects. On 1 July 1958, Colonels Lee, McDaniel, and Davis were assigned to the Surgeon General's Office and Colonel Snyder was assigned to Walter Reed General Hospital. On 1 September 1958, Lt. Col. Barbara R. Friz[1] (fig. 108) replaced Colonel Snyder as Chief, Physical Therapist Section, and was assigned to Walter Reed General Hospital.

On 1 November 1958, Col. Ruth A. Robinson (fig. 109), an occupational therapist, was appointed Chief, Army Medical Specialist Corps, succeeding Colonel Lee, a physical therapist. In order to maintain balanced section representation in the Surgeon General's Office, it was then necessary to reassign the Chief, Occupational Therapist Section, to Walter Reed General Hospital and the Chief, Physical Therapist Section, to the Surgeon General's Office. The administrative inefficiency inherent in such assignment shifts was well recognized. Lack of equity of representation in the Surgeon General's Office of each section of the corps, however, was still considered the greater evil.

On 1 October 1959, Colonel McDaniel was succeeded by Colonel Myers (fig. 110) who was assigned to Walter Reed General Hospital to function in the same dual capacity as had Colonel McDaniel. In view of the extreme dissatisfaction of the chief of the corps with this arrangement, and to provide Colonel Myers with a thorough orientation, permission was obtained for her to spend full time at the Surgeon General's Office for a period of 9 months. In April 1960, authorization was obtained for the assignment of Colonel Myers to the U.S. Army Medical Service Field Activity Unit, Walter Reed Army Medical Center, with station at the Surgeon General's Office.[2]

[1] Formerly Maj. Barbara M. Robertson.

[2] The statutory nature of the section chief appointment precluded assignment to another unit, so a fourth Army Medical Specialist Corps space was authorized in the Surgeon General's Office effective in fiscal year 1963.



FIGURE 109—Lt. Col. Ruth A. Robinson, new chief of the Army Medical Specialist Corps, receives the insignia of colonel from The Surgeon General and her predecessor. Left to right: Maj. Gen. Silas B. Hays, Colonel Robinson, and Col. Harriet S. Lee. (U.S. Army photograph.)

Although the administration of the Army Medical Specialist Corps was greatly facilitated by the arrangement which enabled the chief and section chiefs to function together full time, the other adverse effects of the drastic cut in corps personnel in the Surgeon General's Office were not eliminated. The professional activities of the chiefs of sections, including their consultation visits to the field, were seriously curtailed since they now had to assume many of the personnel and procurement duties formerly accomplished by the staff officers whose spaces had been abolished.

Inasmuch as the chief of the corps was an occupational therapist, there was no problem of dual assignment facing Lt. Col. Katharine E. Manchester (fig. 111) when she was appointed Chief, Dietitian Section, to succeed Colonel Davis who retired in July 1960.

To avoid operation by expediency and to eliminate duplication of effort, additional duties were assigned. In the fall of 1958, the Chief, Physical Therapist Section, was designated Chief, Army Medical Spe-



FIGURE 110—Lt. Col. Cordelia Myers, Chief, Occupational Therapist Section, Army Medical Specialist Corps, 1959–63. (U.S. Army photograph.)

cialist Corps Personnel Branch, to coordinate personnel activities and maintain liaison with the Personnel Division. Early in 1960, the Chief, Occupational Therapist Section, was delegated the responsibility of coordinating corps procurement activities with the Procurement Branch, Personnel Division, and for maintaining liaison with Army Medical Specialist Corps procurement counselors assigned to Army headquarters. In both instances, these secondary duties required approximately half of the working time of each officer.



FIGURE 111—Lt. Gen. Leonard D. Heaton, The Surgeon General, listens as Col. Maurice Levin, JAGC, administers the oath of office to Lt. Col. Katharine E. Manchester, incoming Chief, Dietitian Section, Army Medical Specialist Corps.

As time passed, it became glaringly apparent that the Army Medical Specialist Corps organizational structure in the Surgeon General's Office as it evolved during this period could never be effective in time of mobilization. As the result of the recommendations by the chief of the corps, the mobilization table of distribution of the Surgeon General's Office, when next amended, provided for the establishment and adequate staffing of a Food Service Section, Domestic Operations Branch, Medical Plans and Operations Division, and a Physical Therapy Section and an Occupational Therapy Section in the Professional Division. There was also provision for the staffing of the corps Personnel Branch, Personnel Division, and for all sections to be represented in the Office of the Chief, Army Medical Specialist Corps.

When The Surgeon General authorized the appointment of civilian consultants for the Women's Medical Specialist Corps in 1950, their prime mission was to solve problems pertinent to personnel procurement and retention. In 1958, the emphasis on their use was broadened to include consultation in the professional areas. In June 1956, the appointments of Miss Mildred Elson, physical therapist, and Mrs. Winifred C. Kahmann, occupational therapist, were terminated and

Miss Lucy Blair, physical therapist, and Capt. Wilma L. West, AMSC, USAR (occupational therapist), were appointed as their successors. Miss Alta B. Atkinson continued as consultant to the dietitian section until early in 1960 when Miss Fern W. Gleiser was appointed as her replacement.

IMPACT OF LEGISLATION

Certain legislative measures which were passed from 1954 to 1961 resulted in benefits to both the Regular Army and the Reserve components of the corps. Inequities caused by previous legislation which affected promotion and service credit were eliminated and promotion opportunities to the grades of major and lieutenant colonel were increased to provide further incentive to remain in the Army as career officers. Spaces in National Guard units were opened to female officers. The appointment of male specialists in the Reserve component was authorized, eventuating the change in the corps' name to the Army Medical Specialist Corps and a change in insignia.

Public Law 773, 83d Congress, 3 September 1954

Public Law 83–773, cited as the Reserve Officer Personnel Act of 1954, became effective on 1 July 1955. The purpose of this law was to achieve uniformity for the Reserve component of the armed services in promotion, precedence, constructive credit, retention, and elimination of officers. The mandatory retirement provisions of this law were of particular concern to the Army Nurse Corps and Army Medical Specialist Corps as these corps were threatened with the impending loss of many experienced officers. It was not until 1959 and 1960 that legislation was enacted which alleviated this threat.[3] In the interim period, an exception to policy was made which permitted the retention of many Army Nurse Corps and Army Medical Specialist Corps Reserve officers beyond the limit prescribed in the Reserve Officer Personnel Act.

Public Law 229, 84th Congress, 4 August 1955

Public Law 84–229, enacted in August 1955, corrected one inequity of the Army-Navy Nurses Act of 1947 by directing the Secretary of the Army to adjust the dates of rank of all officers in the Army Nurse Corps and Women's Medical Specialist Corps, Regular Army, to reflect the total amount of service creditable under existing law. Before this date, officers appointed under the provisions of the initial law which granted Regular Army status[4] could be and were outranked by officers appointed under subsequent legislative acts including the

[3] (1) Public Law 197, 86th Congress, approved 25 Aug. 1959. (2) Public Law 559, 86th Congress, approved 30 June 1960.
[4] Public Law 36, 80th Congress, approved 16 Apr. 1947.

law which extended the integration period for Regular Army.[5] This had placed the former officers at a promotional disadvantage in relation to their Army peers.

Public Law 233, 84th Congress, 4 August 1955

In 1955, the Army-Navy Nurses Act of 1947 was further amended by Public Law 84–233. By this law, service credit was obtained for certain nurses and medical specialists appointed in the Regular Army. Up to 5 years' credit would be granted to those with active Federal commissioned service performed since 31 December 1947, after becoming 21 years of age and before appointment. A 3-year promotion-list credit was authorized those who by reason of previous civilian experience were initially appointed in the Regular Army in the grade of first lieutenant and who had not performed as much as 3 years' active commissioned service since 31 December 1947 and before Regular Army appointment. The law further authorized consideration for their promotion to the grade of captain along with their professional Army peers. Without this proviso, such officers would have had to serve 7 years before becoming eligible for a Regular Army promotion to the grade of captain.

Public Law 294, 84th Congress, 9 August 1955

After repeated attempts over a period of 5 years, Representative Frances P. Bolton succeeded in obtaining commissions for male nurses and medical specialists in the U.S. Army Reserve. This was achieved by Public Law 84–294. While no change in name was necessary for the Army Nurse Corps, the medical specialist group was inappropriately titled for the inclusion of men and was, therefore, renamed the Army Medical Specialist Corps.

Subcommittee hearings on this bill indicated that the Department of Defense favored its enactment for two major reasons. First, it was felt that the authority to appoint qualified male nurses and medical specialists would expand the sources of procurement for each corps. Second, the authority to commission male nurses and medical specialists would end the existing inequality in their professional status in the Army. At the hearings, it was noted that 50 male physical therapists and 6 male occupational therapists had come into the Army through the Universal Military Training and Service Act and had been serving in enlisted status.

In October 1955, additional Army service number prefixes and designations were established as follows: MR, male dietitian; MM, male physical therapist; and MJ, male occupational therapist. The insignia was changed to a gold caduceus with a black "S" superimposed thereon (fig. 112). It became available on 15 September 1957.

[5] Public Law 514, 81st Congress, 2d Session, approved 16 May 1950. (See ch. X, p. 364.)



FIGURE 112—Insignia of Army Medical Specialist Corps.

By the end of fiscal year 1957, seven male physical therapists and four male occupational therapists had been appointed in the Army Medical Specialist Corps Reserve component and called to active duty.

Public Law 845, 84th Congress, 30 July 1956

The appointment of nurses and medical specialists in the Army and Air National Guards was authorized by Public Law 84–845. At that time, only the Dietitian Section of the Army Medical Specialist Corps was affected since the table of organization and equipment for the evacuation hospital, the largest hospital unit in the National Guard, provided for one dietitian space and no physical or occupational therapist spaces.

Public Law 155, 85th Congress, 21 August 1957

Morale of many Army Medical Specialist Corps officers was at low ebb when the subject of grade with its accompanying benefits was considered. The grade structure did not relate accurately to the responsibilities of corps members and was found to be inconsistent with comparable responsibilities and grades in other corps within the armed services. Only a small number of officers could be promoted to the permanent grade of major because only 35 spaces in this grade were authorized. The majority could look forward to retirement in a grade no higher than captain. Also, there was no provision of law for Army Medical Specialist Corps officers to serve in the permanent grade of colonel or lieutenant colonel.

On 2 August 1954, Col. Nell Wickliffe forwarded to The Surgeon General a study which pointed out the need for higher grades within the corps which would be more nearly commensurate with the responsibility these officers carried. She recommended that 22 temporary lieutenant colonel and 61 major spaces be authorized since it was known that these could be accomplished without legislation. While no action was taken on the recommendation, it served as the groundwork for future action toward obtaining a more realistic grade structure.

Another study of the corps' grade structure was submitted by Colonel Lee to The Surgeon General on 12 October 1955. Based on a recommendation of the Chief, Personnel Division, The Surgeon General appointed a task force to evaluate the grade requirements of the Army Nurse Corps and Army Medical Specialist Corps. Concurrently, on 6 November 1955, President Eisenhower, in a personal letter to General Maxwell D. Taylor, Chief of Staff, U.S. Army, requested that legislation be prepared which would provide more equitable and attractive career opportunities for the nurses of all three services. [6] While a patient at Fitzsimons General Hospital, Denver, Colo., President Eisenhower had

[6] Memorandum for Record, Office of the Assistant Secretary of Defense (Manpower, Personnel and Reserve), 23 Nov. 1955, subject: Meeting With Mr. Bryce Harlowe in the White House Offices With Regard To Implementing the President's Desire for Improving Conditions and Career Incentives in the Nurse Corps of the Armed Services.



FIGURE 113—Reviewing the Career Incentive Act are (left to right) Col. Inez Haynes, Chief, Army Nurse Corps; Lt. Col. E. L. Waddell (standing), Office, Deputy Chief of Staff for Personnel, who presented the Army testimony to Congress; Maj. Gen. Silas B. Hays, The Surgeon General; and Col. Harriet S. Lee, Chief, Army Medical Specialist Corps.

become aware of the need to improve the grade structure, retirement benefits, and housing for these officers.

On 22 November 1955, a meeting of appropriate officials was held in the White House to discuss ways and means for carrying out the President's request. The Department of the Army was given the responsibility to initiate, prepare, and coordinate the project which was subsequently expanded to include the medical specialists in the Army, Navy, and Air Force. Proposed legislation, approved by the Secretary of Defense, was forwarded to the House Armed Services Committee in May 1956. Maj. Gen. Silas B. Hays, The Surgeon General, wholeheartedly endorsed the objectives of the legislation and gave unstintingly of his support to achieving its enactment (fig. 113).

Because of delay in congressional action, a number of career reservists lost the opportunity to apply for a Regular Army commission. They reached the maximum age in grade before the law was passed.

Hearings on the legislation were begun on 6 February 1957.[7] It was enacted as Public Law 85–155 on 21 August and thereafter commonly referred to as the Career Incentive Act of 1957. In brief, the

[7] Subcommittee No. 2, Committee on the Armed Forces, House of Representatives.

legislation provided for the Army Medical Specialist Corps, Regular Army, as follows:

1. Increase in field grade spaces to authorize 1 permanent colonel and 20 permanent lieutenant colonels.

2. Promotion to major on the fully qualified basis rather than on the best qualified. This meant that all captains with 14 years of service, if fully qualified, could be promoted to permanent major.

3. Authorization of appointment in the Regular Army in the grade of captain, thereby increasing the age ceiling for appointment.

4. Mandatory retirement provisions such as applied to other corps, including credit toward retirement for constructive service of integrated officers. This would provide for the orderly retirement of officers occupying senior grades in order to assure a continuous flow of promotion opportunities to those grades. Since Army Medical Specialist Corps officers had not previously been subject to mandatory retirement before age 60, the legislation would have some unavoidable traumatic effects on the corps and on individual officers.

Public Law 197, 86th Congress, 25 August 1959

The retention for retirement and the retirement provisions of the Reserve Officer Personnel Act of 1954,[8] written with the intent of equalizing Regular and Reserve retirement criteria, would have been disastrous had the bill not been amended before the provisions became fully effective in July 1960. Many officers would have been eliminated because of technicalities in the law which drastically shortened their military careers.

Already concerned that Reserve medical units authorized Army Nurse Corps and Army Medical Specialist Corps officers would not have the capacity to meet their missions in time of mobilization, the Army, as a result of the Reserve Officer Personnel Act, was now faced with the forced elimination of many experienced Army nurse and medical specialist Reserve officers. The Surgeon General, therefore, recommended immediate, aggressive action to remedy the situation.

The dogged persistence of Col. (later Brig. Gen.) James H. Kidder, MC, USAR, Special Assistant to The Surgeon General for Reserve Affairs, and his staff, Maj. (later Lt. Col.) John Lada, MSC, and Capt. (later Maj.) Margaret A. Ewen, ANC, and the support of the Reserve Officers' Association, were largely responsible for the provisions enacted in legislation during this period which affected Army nurse and medical specialist Reserve officers.

Public Law 86–197 granted credit for certain service for retirement purposes for duty performed by Army nurse and medical specialist Reserve officers before they attained commissioned status. This service, already creditable for other longevity benefits, included the periods after 6 April 1917 and before 1 April 1943 for dietitians and physical therapists and before 1 January 1949 for occupational therapists if

[8] See footnote 3(1), p. 401.

they had been full-time civilian employees of the Army Medical Service. Time spent as a civilian student or apprentice was never creditable.

As a result, many Army Medical Specialist Corps officers, previously ineligible for retention, were retained in the Active Reserve because they could attain 20 years' service creditable for retirement before reaching mandatory retirement age. This legislation did much to eliminate inequities and therefore to raise the morale of these Reserve officers. One particularly gratifying aspect was the full recognition it finally gave to the wartime accomplishments of intrepid women who accompanied oversea units as civilians without the protection afforded their military associates.

Public Law 559, 86th Congress, 30 June 1960

Further benefits to the Army Medical Specialist Corps Reserve officers were obtained as a result of Public Law 86–559, an amendment to the Reserve Officer Personnel Act of 1954. This law gave the Secretary of the Army authority to retain medical, dental, nurse, medical specialist, and chaplain reservists in an active status within the Reserve, with their consent, until they reached age 60. The Secretary of the Army immediately exercised this authority to permit the selective retention of Reserve officers who otherwise would have been eliminated under the provisions of the Reserve Officer Personnel Act which became effective on 2 July 1960. This action retained those who could attain 20 years of creditable service before reaching age 60[9] and thus assured the probability of their retirement with accrued benefits.

The provisions of the bill equalized promotion opportunities by raising the authorized grades for Army Nurse Corps Reserve officers from lieutenant colonel to colonel and for Army Medical Specialist Corps Reserve officers from major to colonel and provided that officers of both corps would be selected for promotion to the rank of major on a fully qualified instead of best qualified basis. In addition, it made it mandatory to consider both Reserve unit and nonunit officers for promotion up to the grade of major upon their completion of specified periods of promotion and commissioned service.[10] Previously, unit officers could only be promoted to fill vacancies in their unit.

[9] (1) DA Message 503941, July 1960. (2) Title 10, U.S.C., sec. 3855.

[10] This provision tends to promote Army Nurse Corps and Army Medical Specialist Corps officers out of Reserve units because of limited opportunity in grades above captain. It has been mitigated in part by: (1) The establishment of a policy which permits Army Nurse Corps and Army Medical Specialist Corps unit officers promoted after mandatory consideration to be promoted to the next higher grade and remain in the unit even though no vacancy in that grade exists; that is, occupy one grade lower. A unit officer promoted two grades higher than the one which is occupied could elect to defer the promotion for 3 years in order to remain with the unit or accept the promotion and be transferred out of the unit. (2) A provisional change in Army Nurse Corps and Army Medical Specialist Corps grade authorization in table-of-organization-and-equipment and table-of-distribution units which authorizes a limited number of promotions to higher grades. (DA Message 589533, 6 Feb. 1962.)

PERSONNEL

Strength and Distribution

The authorized as well as the actual strength of the Army Medical Specialist Corps which had shown a steady decline since the end of the Korean War, continued this trend during 1957, but leveled off and remained fairly constant during 1958–60. (See Appendix J, p. 611.) This situation reflected, as would be expected, a similar situation in the strength of the Army during the same period. (See Appendix O, p. 621.)

The Army Medical Specialist Corps spaces authorized annually by the Department of the Army never equaled the numbers needed to meet professional requirements. Until 1959, however, these authorizations always exceeded the actual corps strength because it was never possible to procure personnel to fill even these limited authorizations.

As the strength of the Army declined, the Army Medical Specialist Corps authorizations were reduced to make the unfilled spaces available to other Army services. The result was that, in July 1959, the corps had more personnel on duty (425) than were authorized (400). Authorizations were increased during fiscal years 1960 (410) and 1961 (425) but not to the numbers that the chief of the corps felt essential to effective operation.

Annual reports of the Army Medical Specialist Corps showed a wide distribution of officers both in 1953 and 1960. (See Appendix K, p. 613.) The number of hospitals shown in table 17 indicate that 139 officers in 1953 and 121 officers in 1960 were serving as chiefs of their respective hospital operations. In addition, there were ap-

TABLE 17—*Number of hospitals to which Army Medical Specialist Corps officers (excluding students) were assigned, 1953 and 1960*

Sections of corps	Approximate strength		Hospitals in continental United States		Hospitals overseas	
	1953	1960	1953	1960	1953	1960
	Number	*Number*	*Number*	*Number*	*Number*	*Number*
Dietitian	190	111	40	36	25	17
Physical therapist	200	137	37	35	19	15
Occupational therapist	90	64	15	14	3	4
Total	480	312	92	85	47	36

Source: Compiled from records maintained in Office of the Chief, Army Medical Specialist Corps, Surgeon General's Office.

proximately 20 officers in full-time teaching, administrative, research, and procurement assignments. An average of 35 percent, excluding students, had major administrative, supervisory educational, or consultative assignments (fig. 114) in addition to actual professional practice.

While there were 65 Regular Army appointments in the Army Medical Specialist Corps from 1 July 1953 through 30 June 1960,



FIGURE 114—Col. Harriet S. Lee, Chief, Women's Medical Specialist Corps, visits Maj. Gen. Earle G. Standlee, Surgeon, Army Forces Far East and Eighth U.S. Army. Left to right: Maj. Marion M. Donaldson, dietetic consultant, Far East; Lt. Col. Katharine V. Jolliffe, Chief Nurse, Army Forces Far East and Eighth U.S. Army Medical Section; Colonel Lee; General Standlee; Lt. Col. Mabel G. Stott, ANC, Personnel Division, Surgeon General's Office; and Maj. Elizabeth C. Jones, physical therapy consultant, Far East.

the losses exceeded the gains. At the end of that period, the Dietitian Section had dropped from 81 Regular Army members to 68, the Physical Therapist Section from 93 to 82, and the Occupational Therapist Section from 27 to 25.

In May 1955, a new policy was established for Reserve officer periods of service on active duty.[11] The category renewal system was abolished. All newly appointed officers came on duty for an initial 2-year tour following which they could request an indefinite category, submit a request for relief from active duty,[12] or resign from the service if eligible.

The new policy was a definite asset to the Army Medical Specialist Corps. Heretofore, members had to renew their categories well in ad-

[11] Army Regulations No. 135–215, 27 May 1955.

[12] "Relief from active duty" is a term applicable to military personnel who are to be discharged, returned or transferred to a Reserve component, or retired. (Army Regulations No. 320–5, 13 Jan. 1961.)

vance of expiration dates. To some of the young women members, this decision of future intention and commitment was one they preferred not to make. Formerly, too, some members had just signed on a year-to-year basis, realizing that the possibility of transfer was minimized for the short commitment, and they were thus able to stay a longer period at a location particularly desired by them. The seeming unlimited nature of the indefinite category was tempered by the new policy on Reserve resignations which required only 90 days' advance notice.

Further revision of Department of the Army policy in 1957 permitted the retention of Army Nurse Corps and Army Medical Specialist Corps officers who could complete retirement eligibility by their 60th birthday. Eleven officers in the latter corps benefited by this revision. Maj. Ruth Boyd, the first Army Medical Specialist Corps Reserve officer to be forced out because of not being able to attain 20 years of service before reaching her 60th birthday, in fiscal year 1957, set a precedent for the medical specialists and nurses by being given an appointment as a master sergeant in the Women's Army Corps in order that she might complete 20 years of active duty. In accordance with the newly established policy of the Women's Army Corps and of The Surgeon General, Army Nurse Corps and Army Medical Specialist Corps officers transferring to enlisted status in the Women's Army Corps would be assigned to the Army Medical Service in positions where they would not be working with other members of their profession who would be serving in officer status. Sergeant Boyd was assigned to the U.S. Army Hospital, Fort McPherson, Ga., where she was allowed to function as a dietitian although she could no longer assume the full responsibilities of an officer. She retired in the permanent Reserve grade of major in 1959.

The majority of Regular Army losses during 1953–60 resulted from marriage and retirement. Approximately 25 percent of the total annual Army Medical Specialist Corps losses were attributable to marriage. Other losses were largely from among the younger Reserve component officers who were curious to see what civilian positions had to offer.

Procurement

Even though the requirements for Army Medical Specialist Corps personnel decreased following the Korean War, the national competition for dietitians, physical therapists, and occupational therapists continued to be staggering. There could, therefore, be no abatement in the pace of procurement efforts.

During the period from January 1954 to May 1957, Army Medical Specialist Corps officers assigned to the Technical Liaison Office acted as Army Nurse Corps-Army Medical Specialist Corps liaison between civilian and military agencies in officer procurement (chart 9). Their duties included development of brochures, posters, and exhibits, prep-

aration of press releases, assistance in the production of films and tapes, attendance at national meetings of professional and nonprofessional civilian associations, and participation in Army procurement conferences. The officer in this assignment was actually a combined public information-procurement officer whose contribution to procurement was sorely missed when the position was abolished.

Of the procurement projects developed, two come to mind as being unique and particularly successful. In May 1957, through collaboration of the Chief, Dietitian Section, and the Director, Dietetic Internship Program, Ohio State University, Columbus, Ohio, the interns made a 5-day trip to Washington. They stayed at Walter Reed General Hospital and were individually assigned to Army dietetic interns for the day the group spent at the hospital. They also visited DeWitt Army Hospital, Fort Belvoir, Va., and the National Institutes of Health, Bethesda, Md. In 1958, Operation FEEDBACK was initiated. In this inexpensive project, each Army Medical Specialist Corps student recorded a brief report to her alma mater underclassmen and instructors in which she discussed her activities in the Army and her educational, social, and recreational experiences since joining the corps. The tape recordings, together with black and white photographs, were forwarded to the curriculum directors for use either in classes or with appropriate college clubs and groups. Such projects evoked interest and enthusiasm, but direct procurement results were intangible and impossible to estimate.

Experience of procurement officers assigned to Army area headquarters soon indicated that there was a great disparity in the procurement potentials of the six Army areas. This was related to the comparative population of the areas and the number of colleges which were potential sources for procurement. Since the Fourth U.S. Army area had the lowest potential, the assignment of an Army Medical Specialist Corps procurement officer to that headquarters was terminated in July 1955. The corps procurement officer space was eliminated in the Sixth U.S. Army area in August 1957 for the same reason but was restored in July 1958. In those headquarters where no Army Medical Specialist Corps officer was assigned, the Army Nurse Corps procurement officer was always most helpful.

The disparity in procurement potential of the Army areas and the consequent pros and cons of centralized versus decentralized procurement were among the factors considered in a study of Army Medical Service Officer Procurement conducted by The Surgeon General's Army Medical Service Board in 1957. The board's report highlighted the need for the assignment of two Army Medical Specialist Corps procurement officers to Fifth U.S. Army headquarters, a proven source of corps procurement. Such an assignment was made in September 1957 for one academic year.[13]

[13] A second Army Medical Specialist Corps officer was assigned to Fifth U.S. Army headquarters in August 1962.

The Defense Advisory Committee on Women in the Services continued their efforts to obtain more widespread acceptance of women in the service. Of great assistance in this area was "The Price of Liberty," a film sponsored by the committee and distributed in 1954. Among the several successful brochures developed through the committee in the years 1953 to 1960 were "Eyes Right," "Your Daughter's Role," "Careers for Women in the Armed Forces," "Builders of Faith," "Four Futures," and "Careers in Medical Services in the Armed Forces." The latter two brochures dealt specifically with the professions of nursing, dietetics, physical therapy, and occupational therapy.

Experience has shown that the Army Medical Specialist Corps professional educational programs are the corps' only dependable source of personnel. During the period 1953 through 1960, a decline in the number of applicants for the dietetic internship, difficulty in obtaining both qualified occupational therapists and clinical affiliates, and a steady decrease in the number of applicants for the physical therapy course, forced a review of the effectiveness of the educational programs and the innovation of new procurement measures.

The Army student nurse program, an aid to the educational program begun in 1956, had been watched with keen interest by the Army Medical Specialist Corps. Selected applicants for this program were enlisted in the Women's Army Corps Reserve for purposes of pay and allowances, but wore no uniform and attended no military meetings. The financial assistance which amounted to over $200 per month enabled the student to complete her basic professional education. After meeting other requirements, she was commissioned in the Army Nurse Corps and was obligated to serve 2 years for 1 year's assistance or 3 years for 2 years' assistance. Most of the 250 spaces annually authorized for this program were filled.

The success of this program was contagious. In August 1957, the Army student dietitian program was announced for students enrolled in home economics. As of January 1961, 38 students had participated or were currently enrolled. In 1960, approval was given to a similar program for occupational therapy. Fifteen students per year were authorized.

A summer practicum was established for junior home economics students in 1958 to familiarize them with Army hospital food service activities. Over 100 students had participated in the program by 1961. This 4-week orientation to the role of the hospital dietitian and function of the Army hospital proved so valuable for dietetic internship procurement that summer practicums were approved for both physical and occupational therapy students in 1961. These civilian student employees received a stipend of approximately $165 per month and paid for their housing, subsistence, laundry, and travel.

In May 1957, approval was obtained to grant waivers for appointment in the Dietitian Section of persons who had completed college with the appropriate major and who desired to obtain experience that

might qualify them for membership in the American Dietetic Association. This program proved unproductive and was discontinued in 1959. In 1958, the Army graduate student dietitian program was authorized. To be eligible for this program, the dietitian had to be enrolled in or accepted for enrollment in a graduate curriculum. Commissioned for pay purposes, the dietitian came on duty following completion of graduate work. A service commitment of 3 years included the period of graduate work which could not exceed 12 months. This program by its very nature was restricted to a small group of selected individuals and by 1961 only two dietitians had participated in it.

In addition to the student and practicum programs in occupational therapy, a 1958 policy change permitted the Army occupational therapy clinical affiliate to complete only the balance of her affiliation as designated by her civilian school rather than participate in the entire 9-month program as previously required by the Army. A midyear clinical affiliation was also approved in 1960 which permitted students graduating in midyear to enter training without a 6-month delay.

The Physical Therapist Section maintained its strength at a fairly even level during this period because of the appointment of qualified male physical therapists. The steady decrease in the number of applicants for the physical therapy course, however, was an increasing cause for concern. The decrease was attributable to the trend in physical therapy education toward a 4-year degree course, most appealing when compared with the 1-year program following graduation from college, the pattern of the Army course. Since the assignment of male physical therapists was restricted by Department of Defense policy to hospitals where three or more physical therapists were authorized,[14] the decline of the input into the physical therapy course was serious since it was the prime source of female physical therapists.

Grades and Promotions

The subject of grades and promotions continued to be of prime importance to the Army Medical Specialist Corps in terms of procurement and retention of highly qualified officers. Because of the postponement of congressional action on the career incentive legislation, The Surgeon General, in June 1956, proposed that temporary field grade distribution be increased for the corps. This was effected in November with an increase in authorization from 3 to 7 lieutenant colonel spaces and from 48 to 79 major spaces. These additional spaces considerably raised the morale of the corps and the increase was an important step toward the goal of giving rank commensurate with responsibility carried and of promoting all captains who were fully qualified.

For the first time in the history of the Army Medical Specialist Corps, a board met in the fall of 1957 to consider officers for promo-

[14] Letter, Frank B. Berry, M.D., Assistant Secretary of Defense, Health and Medical, to Hon. Carl Vinson, Chairman, Committee on Armed Services, 11 Aug. 1959.

tion to the newly authorized permanent grade of lieutenant colonel. In view of the absence of any previous opportunity for such consideration, the number of officers in the promotion zone was unusually large. The board was instructed to select the 10 officers considered "best qualified" for promotion. The number of Regular Army lieutenant colonel spaces, limited by law to 20, had been further limited for fiscal year 1958 to 10 in accordance with Department of the Army policy that the newly authorized spaces should be filled by gradual increments over a period of several years. Although the wisdom of this policy was not questioned, the allocation of a somewhat larger number of spaces at this time might have resulted in retention of some of the highly qualified and valuable officers whose nonselection resulted in their mandatory retirement in May and June 1958 because of age. The first eight officers mandatorily retired by 30 June 1958 were all serving as chiefs of food service divisions or physical therapy sections in large Army hospitals. Their loss was keenly felt. The 10 officers selected for promotion to the Regular Army grade of lieutenant colonel were promoted in March 1958. Of those promoted, three were dietitians, four were physical therapists, and three were occupational therapists.

In accordance with Department of the Army policy, the allocation of lieutenant colonel spaces by gradual increments continued during fiscal years 1959–60. The Army Medical Specialist Corps was limited to 22 lieutenant colonel spaces (permanent and temporary) until fiscal year 1961 when the authorization was increased to 23. The Regular Army colonel space authorized by the Career Incentive Act was not programed until fiscal year 1961. On 1 March 1961, Colonel Robinson was selected to fill this space.

Increased opportunities for promotion to field grades were afforded by the career incentive legislation. On 30 June 1960, 136 Army Medical Specialist Corps officers were serving in field grades in contrast to 51 officers serving in field grades on 30 June 1953. The percentage ratios of officers serving in these grades to the total strength of the corps for these dates showed an increase from 8.40 percent to 32.53 percent.

On 1 July 1957, with an authorized Army Medical Specialist Corps strength of 425, there were 76 officers serving in the grade of major. By 1 January 1960, with an authorized strength of 410, 120 officers, 29 percent, were serving in the grade of major. This was 10 percent more than the 19 percent authorized in this grade for the Army as a whole. Even recognizing the fact that promotion opportunities to the grade of lieutenant colonel were limited, it became necessary to restrict the number of promotions to the grade of major.

On 1 February 1960, it was determined that Army Medical Specialist Corps promotions to the temporary grade of major would be made on the best qualified basis from among those officers who fell within the zone of consideration and who had been found fully qualified. A selection rate of 55 percent, the same as for all other officers in the

Army, was used.[15] Under this system, officers found fully qualified but not promoted as best qualified had no onus placed against them. They were not considered to have been passed over. In addition, truly outstanding young officers were recognized through the selection of a small predetermined percentage from those who fell below the zone of consideration for temporary promotion to the grades of captain or above.

Public Law 86–559, which amended the Reserve Officer Personnel Act, authorized the grades of lieutenant colonel and colonel in the Army Medical Specialist Corps Reserve. Two promotions to the grade of lieutenant colonel were programed for fiscal year 1961. Promotion to the Reserve grade of colonel could not be programed at that time as no Army Medical Specialist Corps Reserve officer was eligible for that grade.

Career Management

Although the 1948 career pattern for the Army Medical Specialist Corps was brought up to date in 1956, its basic provisions remained unchanged.[16] It was recognized that, because of changing individual interests, varying degrees of both latent and demonstrated ability, and unpredictable and everchanging operational requirements, there could be no single career pattern which applied to all officers or even to all officers in a given section of the corps.

In fiscal year 1955, digit prefixes to the military occupational specialty were authorized in the Army Medical Service to assist those officers concerned with assignments and career planning in the more effective screening of personnel records. Of the eight-digit prefixes which were authorized, prefixes 4 (research) and 8 (instructor) seemed most applicable to Women's Medical Specialist Corps members. The research prefix designated qualification for the design, analysis, testing, or improvement of military material or methods, and the instructor prefix designated qualification for assignment as full-time formal instructor at an Army service school or other organized training facility.

A survey of the Army educational rosters in 1954 indicated that more than half of the Regular Army Women's Medical Specialist Corps officers had not attended any advanced military courses. There appeared to be few courses which were applicable, especially to the intermediate group of officers with from 5 to 15 years of service. Therefore, plans were made to send a representative of each of the three sections of the corps on a trial basis to the Women's Army Corps 19-week Advanced Officer Course conducted in January 1955 at Fort McClellan, Ala. Two officers also attended the course the following year. Attendance at this course, however, was discon-

[15] The Army Medical Specialist Corps did not suffer by this policy. On 1 July 1962, with an authorized strength of 460, 148 officers, 32 percent, were serving in the grade of major, 77 of these were serving in temporary grade.

[16] (1) See chart 7, p. 355. (2) Department of the Army Technical Manual (TM) 600–3, 15 Oct. 1956.

tinued because the 15-week semiannual Army Medical Service Officer Advanced Course had become available to them and the Institute for Women's Medical Specialist Corps Officers had become firmly established. These two seemed to fulfill the current need.

The Hospital Administration Course at the Medical Field Service School, Fort Sam Houston, Tex., was attended by a physical therapist in 1948 and by a dietitian in 1950. A critique of the course at that time indicated that the content was not pertinent to the needs of the Women's Medical Specialist Corps. With an expanded course content and an opportunity to earn a master's degree in hospital administration from Baylor University, the course became a part of the corps career pattern in fiscal year 1954 and was attended by dietitians the following years.

The Institute for Women's Medical Specialist Corps Officers was the culmination of a long-considered plan to establish a military in-service program which could provide an opportunity for these officers to enhance their administrative, supervisory, and teaching abilities. Based in part on the framework of the 1951 Symposium for Chief Physical and Occupational Therapists, the first 2-week institute was conducted in May 1955 at the Army Medical Service Graduate School (now Walter Reed Army Institute of Research), Washington, D.C. Representatives from the National Training Laboratory, National Education Association, Washington, D.C., assisted with a large portion of the presentations and discussions on interpersonal relationships. As recognized experts in the area of human relations, they had the wisdom of wide experience to emphasize the importance of the subject and provide interesting and effective motivation. Discussions of military policies and procedures and current professional trends were combined to give a well-rounded, informative, and stimulating 2-week session. The same plan was continued with later institutes except the course was shortened to 1 week.

Starting in 1958, the Army Medical Specialist Corps Institute which had been conducted semiannually at the Walter Reed Army Institute of Research since May 1955 was programed for one session a year, partly owing to budgetary limitations. It was also believed, however, that an annual, rather than a semiannual, session was consistent with requirements since, by this date, 268 officers had attended. In May 1960, the institute was renamed the Army Medical Specialist Corps Supervisor's Course. Future programing included a course for dietitians to be conducted annually at the Walter Reed Army Institute of Research and two 2-week courses in advanced anatomy for physical and occupational therapists to be conducted annually at the Medical Field Service School. The latter courses would overlap for a period of 2 days which would be devoted to discussion of current military and corps policies and activities.

A 1-week course, "Management of Mass Casualties," conducted in alternate months at the Walter Reed Army Institute of Research

and at the Medical Field Service School was opened to Army Medical Specialist Corps officers in November 1956. Five spaces became available to these officers in fiscal year 1957 in a 2-week semiannual workshop, "Nursing in the Medical Management of Mass Casualties" which was held at the Walter Reed Army Institute of Research. These courses were of great value to Army Medical Specialist Corps officers because as they became aware of the problems concerned with mass casualties they were able to more realistically interpret and define their role and function in this program.

During this period, certain officers who were concerned with procurement activities attended the Army Information School at Fort Slocum, N.Y., and the Women's Army Corps Officer Recruiting Course at Fort Benjamin Harrison, Ind.

In February 1960, a report was published by The Adjutant General on the Civilian Educational Level of Army Commissioned Officers as of 25 November 1959.[17] This report indicated that approximately 95 percent of Army Medical Specialist Corps officers on active duty were college graduates and approximately 15 percent had master's degrees (table 18).

TABLE 18—*Civilian educational level of Army Medical Specialist Corps officers as of 25 November 1959*

Educational level	Percent in—		
	Regular Army	Officers' Reserve Corps	Regular Army and Officers' Reserve Corps
Master's degree	24.87	5.86	14.15
Year or more of postgraduate work, no degree	58.92	28.45	41.74
College graduate only	12.97	60.25	39.62
Two or more years of college, not graduated	3.24	5.02	4.25
Non-high-school graduate	.....	.42	.24
Total	100.00	100.00	100.00

Source: Civilian Educational Level, Army Department Commissioned Officers, as of 25 November 1959, prepared by Manpower Control Section, Office of Assistant Executive for Requirements, Officers Assignment Division, Adjutant General's Office.

Throughout the Army, many of the corps were concerned with raising their general educational level. The few Army Medical Specialist Corps officers not possessing college degrees, who were integrated into the Regular Army on the basis of professional and military experience, were urged to complete credits for a degree. Beginning in 1957, this could be accomplished by participation in off duty programs with the Army bearing a portion of the tuition expense or, if officers could complete all requirements for an undergraduate degree in one semester, they were urged to apply for the final semester program.[18] Immediately fol-

[17] Civilian Educational Level, Army Department Commissioned Officers, as of 25 November 1959, prepared by Manpower Control Section, Office of Assistant Executive for Requirements, Officers Assignment Division, Adjutant General's Office.

[18] Army Regulations No. 621–5, 20 Feb. 1957. This program was later enlarged to include the final semester of graduate study.

lowing the initiation of the program in 1957, these officers began to take advantage of this opportunity. While completing the program, they received full pay and allowances but were responsible for all tuition and miscellaneous costs incurred. The annual quota for these medical specialists was one officer for each semester.

The number of spaces which was approved annually for graduate level study in civilian colleges and universities varied from three to five depending on the budget. A change in procedure was made in April 1954, whereby the requests for all Women's Medical Specialist Corps spaces for graduate study and budget estimates were to be submitted by the chief of the corps. Previously, the physical and occupational therapists' spaces for graduate study had been allocated to the Chief Physical Medicine Consultant and the dietitian spaces to the Chief, Women's Medical Specialist Corps. During the period, 1953–61, 11 dietitians, 16 physical therapists, and 5 occupational therapists had received 1 year of graduate study, and 1 dietitian was enrolled in a doctoral degree program. One hundred sixty-five officers participated in civilian short courses conducted by universities, institutions, or professional organizations. These courses were specifically directed toward enhancing the professional background of the specialist. Military courses were attended by more than 450 Army Medical Specialist Corps officers. This number includes the 315 who attended the institute and the 80 who attended the management of mass casualties course. (See Appendix L, p. 615.)

Training in Emergency Medical Care

In 1955, Army Medical Specialist Corps officers took the 12-hour course in "Essentials of Emergency Medical Care" required of all medical service officers. This course was inadequate for the dietitians, physical therapists, and occupational therapists both as to content and degree of proficiency attained. It was the opinion of Army Medical Specialist Corps officers in the Surgeon General's Office that the professional background of physical and occupational therapists provided excellent potential for serving in the role of nursing assistants in disaster situations and that the attainment of proficiency in some of these procedures would require only a minimum of training. It was believed that the dietitians should be prepared to render emergency medical care in the period immediately following a disaster, but their primary mission would be the feeding of the wounded and attending personnel.

The matter of training in certain nursing procedures was considered at length in a panel discussion at the Chief Nurses' Conference held at the Surgeon General's Office in the spring of 1957. A checklist of suggestions for general and specific training needs for dietitians, physical therapists, and occupational therapists along with the areas in the hospital where the skills might best be learned was given to the nurses attending the conference and later sent to all Army Medical Specialist Corps chiefs of hospital sections. As a result, programs of special training

were initiated at several hospitals. The most intensive one was conducted at Valley Forge General Hospital, Phoenixville, Pa., where 120 hours of training in nursing procedures was provided.

In 1958, it was believed that the medical problems which would confront the military commander in the event of a nuclear attack would be basically similar to those encountered in conventional warfare except that they would be magnified and would occur in a very brief timespan. In order to meet the possibility of such an eventuality, a comprehensive Army-wide training program was developed.[19] All Army medical personnel were to be trained to perform tasks and to accept responsibility beyond that required in treating the usual flow of conventional wartime casualties.

Minimum standards of proficiency for all medical service personnel were established. In addition to being capable of self-care and rendering first aid to others, all Army Medical Specialist Corps officers were to be trained to assist in operating casualty sorting stations, to perform bedside and circulating nurse duties, to assist in management of burn casualties, to render preoperative and postoperative care, to collect blood, and to use thoracotomy, intratracheal, and nasogastric tubes. They were also to be proficient in the application of splints and the preparation of sterile supplies. In addition, physical and occupational therapists were to be trained to administer blood and other intravenous therapy and to assist in major surgery.

This program was not fully implemented because of the time required to train personnel to the desired level. The pressures of day-to-day patient care compounded, in many instances, by personnel shortages made it almost impossible for many commanders to carry out this directive in its entirety. The goal it established, however, has been judged valid by time.

RESERVE COMPONENT

The magnitude of World War II, the Korean War, and the Atomic Era forcefully demonstrated the urgent need for maintaining an efficient reservoir of strength upon which the Nation might draw in time of disaster. An increase in the number of participants in Reserve unit activities continued to be a main objective of the Army Medical Specialist Corps program.

It continued to be impossible to ascertain the exact number of Reserve officers in active status because of decentralization in the organizational structure of the U.S. Army Reserve, and rosters maintained in the Army headquarters often did not accurately reflect changes in status. It was estimated that there were approximately 300 Army Medical Specialist Corps Reserve officers in active status not on active duty in fiscal year 1953, about a third of whom were members of units. Fiscal

[19] Department of the Army Training Circular No. 8–1, 2 Dec. 1959. Revised in May 1962 as Department of the Army Pamphlet 8–16.

year 1957 Reserve reports showed that only 14 percent of the 755 unit spaces authorized for this corps were filled. By 1961, the number of reservists not on active duty approximated 90 dietitians, 170 physical therapists, and 35 occupational therapists.

From the point of view of Army Medical Specialist Corps Reserve officers, improvements in some areas of the Reserve program were experienced. The scope of opportunities for and the value of participation in Reserve activities had increased. Training opportunities for both unit and nonunit members were enlarged. By 1961, a high proportion of hospital units were performing actual patient-care missions during their annual active-duty training period. Several postgraduate courses, varying in length from 3 to 15 days and conducted at designated Army medical installations and service schools, were made available to women officers. Points could also be earned through attendance at conferences in which sessions were held that had particular military or professional significance.

In 1954, instructional material for each of the corps in the medical service was completed and was made available to organized units from the Walter Reed Army Institute of Research. This proved to be useful to some Army Medical Specialist Corps officers in arranging programs in their units. The relatively small number of Reserve officers in active status and their wide dispersion made it difficult to offer programs that were consistently pertinent to the interests and needs of these officers.

UNIFORMS

In May 1954, a light taupe uniform with a modified open collar made of summer weight fabric was authorized for optional summer wear,[20] and became available from civilian vendors in 1955.[21] Its becoming design and availability alleviated some of the marked discontent with the taupe wool and taupe cotton uniforms. The design of this class A uniform (fig. 115) was so popular that it was subsequently used in the dress blue and Army green uniforms.

As early as 1952, steps were underway to test fabrics and styles for a summer uniform to replace the taupe cotton dress. The Chief, Army Medical Specialists Corps, continued to take a strong stand as did the Chief, Army Nurse Corps, and the Director, Women's Army Corps, in pointing out the necessity of a change in uniforms since this was a morale problem of no small proportion.[22] The development of the new two-piece summer uniform to replace the taupe cotton dress had been so protracted that the orlon-cotton material first approved became un-

[20] Special Regulations No. 600–37–2, Changes No. 6, 13 May 1954.

[21] Available from the post exchanges in 1959.

[22] The problems of suitable clothing for women in the Army are as old as the service of women themselves. The interested reader will find a wealth of information in the section on "Clothing for Women in the Army," *in* Risch, Erna, and Kieffer, Chester L.: The Quartermaster Corps: Organization, Supply, and Services. Volume I. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1953, pp. 110–117.



FIGURE 115—New uniform styles authorized for women in the service. (Left) Light taupe uniform, class A, summer wear. (Right) Green and white striped uniform, class B, summer wear.

available. At the March 1956 meeting of the Army Uniform Board, a class B green and white hairline striped dacron-cotton two-piece uniform was approved (fig. 115). It received Department of the Army approval in the spring of 1957 and was authorized for wear for the summer of 1959.

When the proposed dress blue uniform was considered at the March

1956 meeting, the board recommended that consideration be given by the Women's Army Corps, Army Nurse Corps, and Army Medical Specialist Corps to a single color dark blue uniform rather than the dark blue coat and light blue skirt modeled at the meeting. It was further recommended that purchase and wear of the dress blue uniform should be optional since most nurses and medical specialists would not have sufficient need for this uniform to justify its purchase. During the winter of 1956, the board recommendations were approved by the Department of the Army and it was authorized for optional wear beginning in 1959.

Also modeled at the March meeting was a proposed Army green uniform to replace the wool taupe. There had been general agreement that the use of the same color which had recently been authorized for wear by the men would help to identify the women as members of the Army.

Although there had been accord on the color of the uniform, there was disagreement on the weight of the cloth. The Army Uniform Board recommended a 12-ounce serge. Subsequently, the Director, Women's Army Corps, and the Chiefs, Army Nurse Corps and Army Medical Specialist Corps, recommended that an optional fabric be authorized for officers in 12-to-14-ounce wool gabardine. The Office of the Secretary of the Army recommended a 16-ounce serge, the same material as that used for the men's uniforms. This, however, was believed to be much too heavy for wear by women. By the end of fiscal year 1957, the Army green uniform was approved by the Department of the Army, and on 1 July 1960, it became available from the quartermaster. Before this, it was first authorized for wear by officers in the Metropolitan Washington area and later for women assigned to personnel procurement. Twelve-ounce serge and eleven-ounce wool gabardine fabrics were initially authorized; later an additional fabric was included—a blend of 40-percent wool and from 55- to 60-percent polyester fiber in gabardine.

A new hat was developed for wear with the Army blue uniform. Worn straight on the head with the insignia centered, it had a debonair air because of its half-brim style. The chiefs of the Army's three women's components, faced with the problem of a suitable hat for wear with the Army green uniform, requested this style be wear-tested in Army green. After many design vicissitudes, a hat was finally approved. The garrison hat was worn until that time. From observations made during the development of the hat, it became obvious to the members of the board that to find a style which met all military criteria, fitted all ethnic types, and was becoming to the majority of women in the Army was a minor miracle and well worth the effort put into the project.

White sweaters were authorized in 1957 for wear with the white hospital uniform. It was specified that these sweaters must be of wool rather than snythetic fibers because of the static electricity generated by the latter in certain hospital areas.

There was such general and marked dissatisfaction with the shirtwaist, overcoat, and raincoat that representatives of the Research and Development Division, Quartermaster General's Office, were asked to meet

with the Director, Women's Army Corps, and the Chiefs Army Nurse Corps and Army Medical Specialist Corps, in April 1957. At that meeting the Research and Development Division was requested to work on the development of the following items:

1. Shirtwaist with modifications of present waist to include a better fitting collar with collar tab integrated into the collar, new fabric, and French cuffs.
2. Scarf with modifications of present scarf to include changes in fabric, shape, and color.
3. Glove in gray tones.
4. Overcoat in new design, color, and fabric.
5. Raincoat in new design, color, and fabric.

During her assignment as Deputy Chief, Army Nurse Corps, Lt. Col. (later Col.) Margaret Harper, later Chief, Army Nurse Corps, was given the responsibility for coordinating the development of new field clothing for women. In the spring of 1957, Maj. Estelle M. Travers, ANC, was assigned to the project in order that a thorough study might be made and some practical field clothing developed.

The demands of modern warfare had resulted in the development of new protective fabrics and new field clothing for men. Women's field clothing, however, had not changed since World War II and a need was felt to improve both its appearance and usefulness. Colonel Harper with the support of Colonel Lee vigorously pursued this project.

Field garments for women were tested in Europe, Korea, Texas, and Massachusetts. The test clothing, developed on a garment layering principle, included a basic summer and winter outfit. Both included skirts to be worn when good taste and the situation indicated. The proposed design was well received by the nurses and medical specialists who had been embarrassed at times by their appearance in old fatigues. Items of men's protective field clothing were to be used as appropriate with the addition of one or two smaller sizes.

By late 1958, it became evident that Army Nurse Corps and Army Medical Specialist Corps officers must have field clothing at all times if they were to be equipped for any eventuality. On 10 June 1959, a limited number of field items became required purchase for every officer in these two corps then on duty. Later, these items were designated mandatory organizational clothing for all officers[23] and were issued to all newly appointed officers.

When it was decided in the interest of controlled cleanliness and economy that the white hospital uniform should be worn by all women directly concerned with the care of patients in Army medical installations, it became necessary to have this uniform authorized as an item of organizational clothing in a full complement of sizes.[24] This would per-

[23] (1) Table of Allowances No. 21 (Peace), Changes No. 2, 14 Nov. 1956. (2) Table of Allowances No. 21 (Peace), 14 Dec. 1960.

[24] A basic difference in organizational clothing and uniform is sizing. Organizational clothing is issued in average sizes—small, medium, large, regular, long, or short. Uniform sizing is comparable to that used for civilian garments.

mit its issue to enlisted women who worked with patients, to professional and nonprofessional civilian employees, as well as to the nurse and medical specialist officers for whom it was originally designed. The idea met with approval, but owing to the cost of implementation, the proposal was not adopted until May 1962.[25]

This change solved a problem of long duration. The Air Force had always issued the white hospital uniform as organizational clothing and this had caused continued dissatisfaction among women officers of the Army Medical Service. They had been forced to purchase and maintain these uniforms at personal expense while their Air Force peers had them issued and laundered at no expense.

HOUSING

A detailed study of housing for women officers, made by the Defense Advisory Committee on Women in the Services, culminated in June 1955 with recommendations to the Secretary of Defense for apartment-type housing.[26] The committee further recommended that this housing concept be used in the remodeling of existing structures as well as in new construction.

During fiscal year 1956, the Chiefs, Army Nurse Corps and Army Medical Specialist Corps, with concurrence by the Director, Women's Army Corps, recommended that provision be made for one-bedroom-type apartments for field grade officers and efficiency-type apartments for company grade officers.

In January 1957, a compromise plan was approved by the Secretary of the Army and a pilot project authorized at Fort Knox, Ky. The plan provided for two types of apartments. Quarters for company grade officers were designed to house two officers who would share living room, bathroom, and kitchen. Quarters for field grade officers provided separate living room, bedroom, and bathroom but kitchens would be shared.

Garden-type apartment units for women officers were completed at Fort Knox, Ky., Fort Belvoir, Va., Fort Riley, Kans., Fort Benning, Ga., and Fitzsimons General Hospital during the period 1957–61. In addition, construction was begun on quarters at Fort Lee, Va., Fort Leavenworth, Kans., and Fort Monmouth, N.J. The quarters were a great improvement over the former dormitory-type quarters. An undesirable situation, however, developed. The officers first assigned to the quarters had an opportunity to choose their apartment or kitchen mates and were well satisfied, but as time passed, personnel transfers required quarters assignment according to availability rather than choice. This led to increasing dissatisfaction and unhappiness on the part of the Army Nurse Corps and Army Medical Specialist Corps occupants. A cost limitation of $8,500 per unit imposed by Congress covered the cost of construction exclusive of land and design and was deemed by higher authority as prohibiting change to individual quarters.

[25] Army Regulations No. 670–34, 11 May 1962.
[26] The 1951 study was primarily directed toward housing for enlisted women. (See ch. XI, p. 389.)



FIGURE 116—Dedication of Eleanor L. Mitchell Terrace, Irwin Army Hospital, Fort Riley, Kans. Col. Ruth A. Robinson, Chief, Army Medical Specialist Corps, gives the dedication address. Seated at left is Mrs. C. F. Arnold, Detroit, Mich., sister of Colonel Mitchell.

Army Nurse Corps and Army Medical Specialist Corps officers, alert to the facilities and rents of the new garden-type and high-rise apartments being constructed in every major city of the United States, were extremely dissatisfied with the facilities the new quarters provided in relation to the amount of quarters allowance authorized for officers. Housing, therefore, continued to be a prime cause of dissatisfaction with the Army and a major deterrent to retention and, in many instances, procurement of Army Medical Specialist Corps personnel.

The new quarters for women officers at Irwin Army Hospital, Fort Riley, were dedicated as the Eleanor L. Mitchell Terrace (fig. 116)



FIGURE 117—With Maj. Gen. Martin E. Griffin, Commanding General, Fitzsimons General Hospital, Denver, Colo., Lt. Col. Eleanor L. Mitchell celebrates the 10th anniversary of the Army Medical Specialist Corps during her last tour of duty before retirement in May 1958. She died in February 1960 from injuries received in an automobile accident. Left to right: Maj. Velma L. Richardson, dietitian; Colonel Mitchell; General Griffin; Capt. Jeanne B. Morris, physical therapist; and 1st Lt. Martha Shivvers, occupational therapist. (U.S. Army photograph.)

on 20 September 1960 in honored memory of Colonel Mitchell, second chief of the dietitian section. In her more than 30 years of service (fig. 117), she had been much esteemed by members of the Army Medical Service and this seemed a most appropriate recognition.

LIAISON WITH PROFESSIONAL ORGANIZATIONS

Liaison maintained between the Army Medical Specialist Corps and the professional organizations centered around mutual interests, problems, and responsibilities. The keynote to its success was cooperative effort to achieve common goals. The professional organizations have been extremely supportive of the interests of the corps and of the welfare of its members. They have collaborated in many undertakings such as the development of new educational programs, the assessment of professional standards, and the ever-present problem of procurement.

The Army Medical Specialist Corps fostered the participation of its members in the work of the organizations as one of the respon-

sibilities inherent in their status as Army officers and professional persons. The fact that some officers have served as elected and appointed officials of these organizations is, it is believed, a measure of their professional stature and an indication of the regard in which their work is held by their civilian peers.

American Physical Therapy Association

Col. Harriet S. Lee served as president of the American Physical Therapy Association from 1952 to 1954 and as a member of the Board of Directors from 1954 to 1958. Lt. Col. Agnes P. Snyder served as speaker of the House of Delegates of the association from 1956 to 1958 and as its president for a 3-year term starting in June 1958. Lt. Col. Beatrice Whitcomb was an associate editor of *The Physical Therapy Review* from 1952 to 1956, and in June 1960, she was selected for a 2-year term in the same capacity. Lt. Col. Barbara R. Friz served as chairman of the Editorial Board and associate editor of the same publication beginning in 1956.

American Occupational Therapy Association

Evidence of the cooperative relationship between the Army and American Occupational Therapy Association is particularly apparent in Army records concerned with mobilization and educational activities and in association records concerned with its function. Two Army occupational therapists have served as president of the association: Col. Ruth A. Robinson, AMSC, 1955–58, and Capt. Wilma L. West, AMSC, USAR, president-elect in 1960. Colonel Robinson also served a term as first vice-president and Captain West a term as treasurer. Lt. Col. Myra L. McDaniel served a 3-year term as second vice-president beginning in 1959 and was an associate editor of the *American Journal of Occupational Therapy* for 5 years. The Award of Merit, the highest honor awarded by the American Occupational Therapy Association, was bestowed on Captain West in 1951, Mrs. Winifred C. Kahmann[27] in 1952, and Colonel Robinson in 1959 (fig. 118).

EVENTS IN HONOR OF THE FORMER CHIEFS

During fiscal year 1955, the Army Medical Service Memorial Board, Surgeon General's Office, suggested that the Army Medical Specialist Corps commemorate its chiefs by having portraits made. Other corps in the Army Medical Service had done so for many years through solicitation of funds from its members. Since a willing and generous response from Army Medical Specialist Corps members resulted in the receipt of sufficient funds to cover the expense of portraits of the

[27] (1) Chief, Occupational Therapy Branch, Physical Reconditioning Division, Surgeon General's Office, 1943-45. (2) See ch. V, p. 104.



FIGURE 118—Miss Helen S. Willard, President, American Occupational Therapy Association, presents the association's Award of Merit to Col. Ruth A. Robinson.

two former chiefs and the current chief, it was decided to have the three portraits painted. The artist selected was the well-known Itaru Nakoo in Japan who made the paintings from photographs which were sent to him.

On 14 April 1956, the portraits of Col. Emma E. Vogel and Col. Nell Wickliffe Merrill were presented at a tea held at Delano Hall, Walter Reed Army Medical Center, commemorating the ninth anniversary of the Army Medical Specialist Corps. Colonel Vogel and Colonel Merrill were present. The portraits were viewed with enthusiastic approval by the many corps officers and guests who had come from all parts of the country in honor of the occasion.[28]

Following her winning of the first All-Army Women's Golf Championship in August 1955, Capt. (later Maj.) Amelia Amizich, AMSC, proposed that a permanent golf championship trophy, named in honor of Colonel Vogel, be established. Based on this suggestion, it was

[28] Following completion of their tours as chiefs of the corps, the portraits of Colonel Lee and Colonel Robinson were hung in the Walter Reed Army Institute of Research beside those of Colonel Vogel and Colonel Merrill.



FIGURE 119—Col. Emma E. Vogel, USA (Ret.), presents the Vogel Golf Trophy to M. Sgt. Eleanor Jones.

recommended and approved by The Adjutant General that three awards for women in All-Army games be established. The golf trophy was named for Colonel Vogel, the tennis award for Col. Florence A. Blanchfield, ANC, USA (Ret.), and the bowling award for Col. Mary A. Hallaren, WAC. Colonel Vogel and Colonel Blanchfield personally presented the awards honoring them at the second All-Army Women's Championship Tournament held at Fort Bragg, N.C., in August 1956 (fig. 119). Capt. (later Maj.) Rachel H. Adams, AMSC, who had won the All-Army Tennis Tournament in 1955, was recipient of the tennis award in 1956 and 1957.

ASSOCIATION OF MILITARY SURGEONS

At the annual meeting of the Association of Military Surgeons in 1955, the James S. McLester Award was presented to Maj. Helen B. Gearin, USA (Ret.),[29] for outstanding contributions made in the

[29] (1) Formerly Lt. Col. Helen C. Burns. (2) The award, $500 in cash and a metal scroll, is given in honor of James Somerville McLester, M.D., LL.D., a noted nutritionist. It is presented annually by the Association of Military Surgeons through the courtesy of J. B. Roerig Co., Chicago, Ill.



FIGURE 120—Maj. Helen B. Gearin, USA (Ret.), the first Army dietition to receive the James S. McLester Award, November 1955. Left to right: Maj. Marjorie May, ANC; Maj. Katharine E. Manchester, AMSC; Maj. Mary Lipscomb, AMSC; Capt. Mary Behlen, AMSC; Capt. Nannie R. Evans, AMSC; Major Gearin; Col. Harriet S. Lee, AMSC; Maj. Ruth A. Robinson, AMSC; and Maj. Brunetta A. Kuehlthau, AMSC. (U.S. Army photograph.)

field of nutrition and dietetics (fig. 120). In 1957, Capt. (later Maj.) Elinor Pearson, AMSC, received the award for her outstanding contributions to research and metabolic studies conducted with severely burned patients in the Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Tex.

Part IV

PROFESSIONAL ACTIVITIES AND PROBLEMS 1947–61

CHAPTER XIII

Dietetic Internship Program, 1948-61

Colonel Katharine E. Manchester, AMSC, USA

In 1947, the Army hospital food service program was placed under the direct supervision of the dietitian. This new responsibility brought into immediate awareness the fact that the educational program for the dietetic interns would have to provide increased opportunity to further develop their skills in administrative and management functions. A serious problem for the civilian dietetic intern was the lack of authority with which to carry out the responsibilities inherent in supervision and direction of military and civilian personnel.

This lack of authority was solved when the commissioning of dietetic interns as Reserve officers was authorized in May 1948 following establishment of the Women's Medical Specialist Corps. The class which entered the internship in September 1948 (Appendix Q, p. 625) was composed of 12 Reserve officers who had been commissioned for the specific purpose of participating in the educational program. At the time of application, they were required to indicate in writing their interest in joining the Regular Army before completion of their 2 years of obligated service. This period of service included 2 months of basic training given to all newly appointed women officers and the 12-month dietetic internship.

The educational program conducted at Brooke General Hospital, Fort Sam Houston, Tex., was revised to provide guidance for the new Army officer as well as to meet the requirements of the American Dietetic Association. The responsibilities of the dietitian were inclusive of all activities within the food service division as well as those of an Army officer. The dietetic intern graduates were almost the sole source of procurement of qualified dietitians for the Army Medical Service. As a result of their educational program as dietitians and Army officers, these graduates proved to be more effective in the accomplishment of their mission. When the graduates requested separation from the service, they were fully qualified to take positions as dietitians in civilian life.

PROGRAM OF INSTRUCTION

The program of instruction for the dietetic internship was designed to include the educational requirements of the American Dietetic Association and the additional hours of instruction deemed necessary to cover specific military subjects. The program was reviewed periodically by the Director of the Internship and the Chief, Dietitian Section, Surgeon General's Office, to determine the best instructional program

to meet the needs of the Army Medical Service. In 1948, the trend of reducing classroom instruction from 325 hours to a lesser number in closer alinement with the association's requirements of approximately 125 hours was instituted. The first reduction brought the class hours to 275 which included Army basic orientation information. In the 1959–60 program, 127 hours of classroom instruction were listed. Primary reduction came from areas which could be taught during on-the-job experience.

In addition to classroom instruction, the dietetic intern participated in 50 weeks of on-the-job training designed to provide experience in all phases of hospital dietetics and 40 hours of field trips. On-the-job training and classroom instruction were coordinated to include administration and organization; professional ethics; personnel management and training; menu planning; food procurement, preparation, and service; food conservation and waste control; financial management; equipment management; storeroom management; sanitation; normal infant, child, and adult nutrition; diet therapy; meat and dairy hygiene; nutrition in public health; nutrition education and teaching methods for patients, personnel, and student nurses; [1] and commercial food service.

More emphasis was placed on personnel management and gaining experience in using civilian personnel regulations, conducting employment interviews, and orienting new employees to the job (fig. 121). Civilian equipment firms provided consultants to discuss new food service equipment, fabrication of special equipment, and planning layouts of hospital kitchens.

Upon completion of 9 months' training, the intern was given staff responsibilities in which she could apply her new knowledge and gain self-confidence in an operating situation.

INTERNSHIP ADMINISTRATION

The internship director was responsible for the general administration of the internship program, teaching a large number of the classes, conducting the field trips, obtaining outside instructors, and coordinating and planning with the hospital food service supervisor (chief dietitian) on-the-job training in the hospital and affiliated institutions. The chief dietitian was responsible for scheduling training in various units of hospital food service (fig. 122). Staff members were used as food service consultants with emphasis placed on a particular subject during the practical on-the-job assignment. Staff members contributed to the presentations and discussions to relate the practical application to the didactic learning experience.

With each annual evaluation of the educational program, emphasis was placed on integrating the intern program into the hospital food service program to achieve a more complete balance between operation

[1] Experience in teaching student nurses was gained in a local civilian hospital in cooperation with the nursing staff.



FIGURE 121—Dietetic intern orienting new employee in special diet procedures. (Courtesy of American Film Producers.)

and education. Operation of a food service unit was not to be dependent upon the interns but the interns were to have meaningful experiences which interpreted the didactic training. To accomplish this objective, close coordination among the staff dietitians was required.

During the Korean War, an additional requirement for qualified dietitians dictated the opening of a dietetic internship at Walter Reed General Hospital, Washington, D.C., in September 1951. The program of instruction followed the one in use at Brooke General Hospital. Miss Mable M. MacLachlan, Educational Director, American Dietetic Association, inspected the new internship program, and approval by the Executive Board was confirmed on 12 June 1952. At that time, Miss MacLachlan wrote, "We are very pleased with the possibilities this internship has for developing into one of the outstanding internships. A very fine educational program has been set up and the leadership, interest, and cooperation of the entire staff have contributed to the fine program."

Except for the 1957–58 class, dietetic internship programs were conducted continuously at both hospitals. In 1957, there was an insufficient

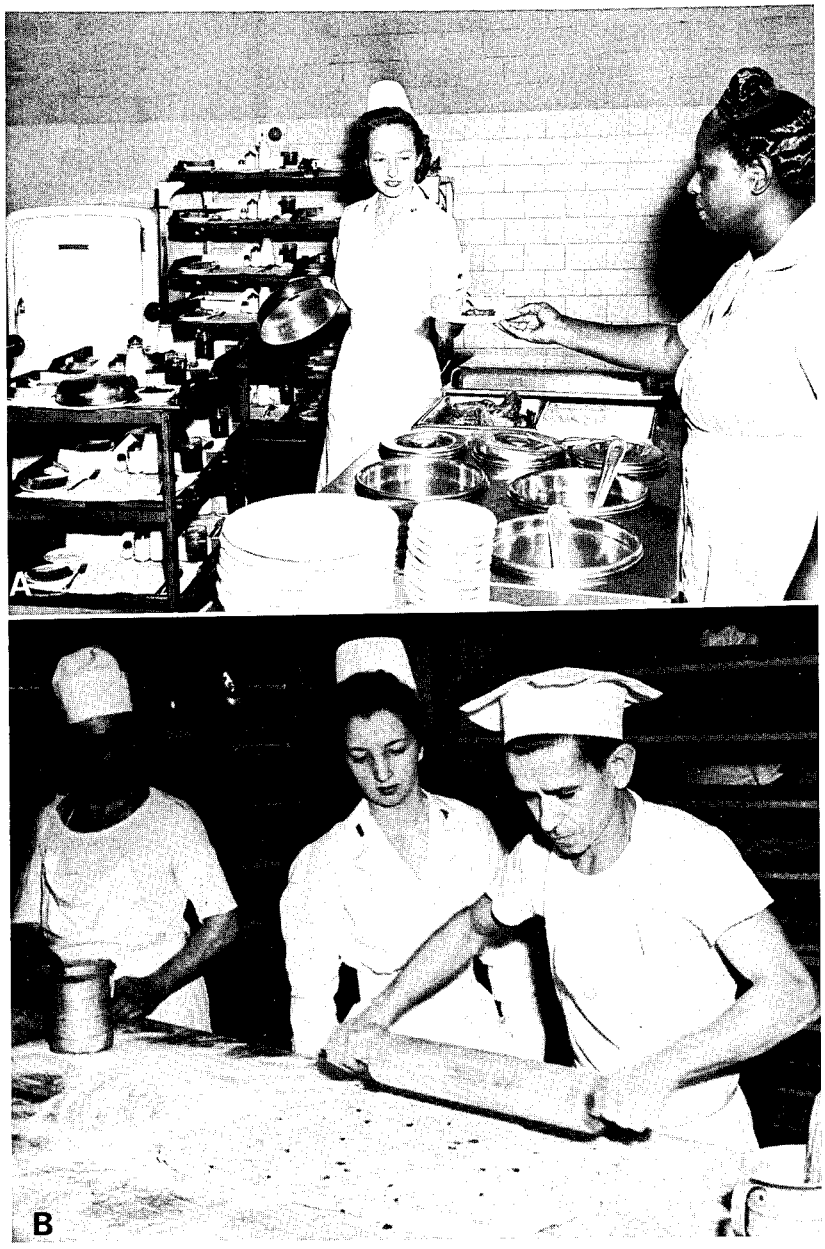


FIGURE 122—Dietetic intern training in different units of hospital food service. A. Ward food service. B. Pastry shop. (U.S. Army photographs.)

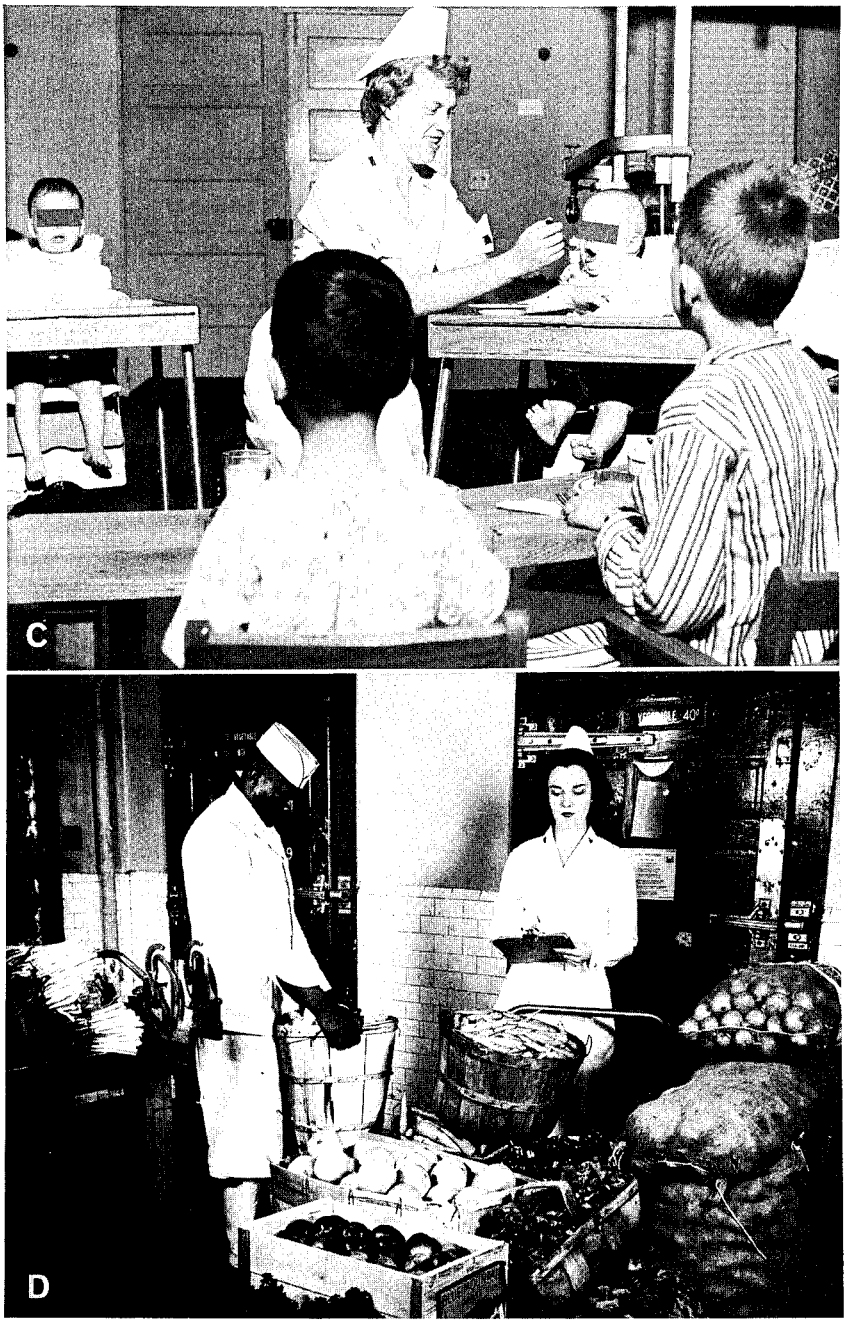


FIGURE 122—Continued. C. Pediatrics ward. D. Food supply branch.

number of qualified applicants to permit the appointment of two classes, therefore, the program at Brooke General Hospital was temporarily discontinued.

During the period 1947–62, the following persons were directors of dietetic internships:

Brooke General Hospital

Capt. (later Lt. Col.) Ruby Z. Winslow, September 1947–September 1950

Maj. Nancy L. Huston, September 1950–December 1954

Maj. (later Lt. Col.) Mary Lipscomb, October 1954–September 1957

Lt. Col. Katharine E. Manchester, September 1957–July 1960

Walter Reed General Hospital

Capt. Louise A. K. Frolich, July 1951–53

Maj. (later Lt. Col.) Martha E. Moseman, September 1953–October 1958

Maj. M. Eileen Radke, October 1958–April 1962

PROGRAM EVALUATION

Each year the two dietetic internship directors met with the Chief, Dietitian Section, to evaluate the program of instruction and to make revisions to improve the total learning experiences of the intern. Many changes reflected the trends in hospital food service divisions. Two weeks were devoted to an orientation which gave the intern an overall view of the operation of the hospital and the food service division. An understanding of the total operation permitted the student to concentrate more effectively on the detailed learning experiences in various branches and sections of the division. Learning experiences were redistributed into 4-week blocks to facilitate rotation of assignments and planning of integrated activities.

To provide various administrative experiences and to acquaint the intern with the different types of food service in Army hospitals, Brooke General Hospital incorporated two new affiliations in the 1950–51 program; a 2-week affiliation with the food service division of U.S. Army Hospital, Camp Chaffee, Ark., and a 1-week affiliation with the Army Health Nursing Service at U.S. Army Hospital, Fort Hood, Tex. In 1952, the affiliations were concentrated at Fort Hood to conserve time and travel funds. The Walter Reed General Hospital dietetic interns participated in a 2-week affiliation with the Food Service Division, U.S. Army Hospital, Fort Belvoir, Va., and a 1-week affiliation with the Army health nurse at Fort Belvoir. These affiliations were continued until 1956 when temporary duty and travel funds were no longer available for these purposes.

The general outline of the learning experiences as shown in the program of instruction for 1959–60 follows:

Program of instruction

	Weeks
Orientation	2
Office, Chief Food Service Division	1
Production and Service Branch (including branch administration, management of dining hall and kitchen, quantity cookery and recipe testing, and pastry preparation)	23
Ward Food Service Branch (including branch administration, application of diet therapy to medical treatment of patients, and research in diet therapy)	20
Food Supply Branch	2
Teaching and Nutrition Education	1
Army Health Program	1

The 127 hours of class instruction included:

Subjects

	Hours
Food administration	71
Normal nutrition and diet therapy	48
Nutrition in public health	1
Nutrition education for student nurses and teaching methods	4
Nutrition research seminar	1
Military social work in hospital	2

The 40 hours of field trips included visits to food service division of an Army station hospital, quartermaster activity, equipment company, civilian hospital, commercial food service operations, meatpacking plant, dairy plant, medical library, medical laboratory, school food service, and produce market (fig. 123).

To improve the learning experiences for the dietetic intern, more meaningful projects and presentations were incorporated into the program. The completed projects were presented to employees, noncommissioned officers, and staff dietitians to make the intern aware of the different educational levels to which teaching techniques have to be adapted.

Nutrition lectures with prepared lesson plans were presented to medical clinical specialists (fig. 124) and student nurses. In-service training lectures were prepared and presented to food service personnel and staff dietitians on safety, security, sanitation, food preparation and cookery, policies and procedures, and other pertinent subjects. Two case studies, medical or surgical, prepared on actual hospital patients by each intern, were presented for in-service educational programs for staff dietitians.

The case method approach was used by the dietetic intern in the preparation and presentation of facts of a personnel problem. The intern studied established civilian personnel policies and division procedures before arriving at recommended action pertaining to the problem. Accident case studies and equipment damage studies were prepared and presented as a means of learning how to gather information, handle reports, and solve problems.

Management improvement, work methods, food and waste studies, nutritional analyses of diets, and recipe standardization were among



FIGURE 123—Field trips. (Top) Four dietetic interns become oriented to the medical library. (Bottom) Blood bank procedures are explained to a dietetic intern. (U.S. Army photographs.)



FIGURE 124—Intern lectures to medical clinical specialists to gain experience in methods of teaching.

the meaningful projects accomplished on various assignments. The inclusion of these particular types of projects in the learning experiences were planned to give the intern confidence in gathering facts, analyzing information, arriving at sound solutions, and implementing changes to improve the efficiency of the operation.

The classroom instruction, learning experiences, and projects were evaluated and integrated to provide a realistic education for the dietetic intern. The intern was given increasing responsibilities throughout the internship and was assigned staff relief when believed capable of successful fulfillment of the assignment. Individual development, as rapidly as possible, was stressed throughout the learning experiences.

In this period, 1948–60, 209 graduates from the internship programs (Appendix Q, p. 625) were awarded the military occupational specialty designation 3420 and were assigned as staff dietitians in Army hospitals throughout the United States. Controlled assignments of the graduates permitted placement of each dietitian in a situation which would enhance professional growth on a continuing basis for the period of obligated military service. These programs were the only internships in the United States where all graduates were se-

lectively placed in situations which were known to the internship director.

The Army dietetic internship programs were strengthened each year by direct feedback to the internship directors. The professional preparation of the internship graduate was evaluated not only by the graduate herself but also by the chief of the food service division to which she was assigned. This latter evaluation was made 6 to 8 months after assignment and indicated the strong and weak points of knowledge of the staff member. The recent graduate evaluated the educational experience in terms of how well the program had prepared her to assume the responsibilities of a staff position. These feedbacks assisted the directors in reevaluating the program and in implementing changes in the curriculum.

LIAISON WITH THE AMERICAN DIETETIC ASSOCIATION

The Executive Board, American Dietetic Association was the approving authority for the dietetic internship program. "Minimum Standards for the Hospital Dietetic Internship" were established by the board and served as a guide for development of the curriculum and learning experiences in the program. The Army internship program exceeded these minimum standards in all respects.

Biannual inspection of each internship was conducted by the educational director of the association. In the report submitted to the Dietetic Internship Board, the inspector listed the strong and weak points of the program and made recommendations for improvement of the internship. The final report was submitted to the internship director and the commanding officer of the hospital. A summary of these reports indicated that the strong points in Army training were the interest and cooperation of the hospital administrative and professional staff, the leadership of the internship director and food service staff, the excellent experiences in food service administration, experiences in various size units with different kitchen layouts and equipment, staff responsibility, high standards of food preparation and sanitation, and management responsibility in various assignments. Weak points mentioned in the programs were the high percentage of staff turnover, lack of opportunity for home visits of patients, and limited experience in financial management including overhead costs and cash operations. As these weaknesses were reported, learning experiences were incorporated into the program to correct the deficiencies. Every effort was made to stabilize the staff in the internship program.

Each year the Army internship directors attended the preconvention conference for internship staff and college faculty as required by the American Dietetic Association. The Chief, Dietitian Section, and staff members of the internships attended the conference also. The conference included discussion of new developments in both colleges and internships and progress reports on internship program planning in which there was some deviation from the usual pattern.

The internship directors used this opportunity to report the progress of dietetic interns to interested members of selected college staffs. Military and civilian internship staff members enjoyed exchanging ideas and learning experiences to improve the program.

THE DIETETIC INTERN

The establishment of the Army dietetic internship as a military officer training program provided a solution to the problems encountered at the end of World War II. The dietetic intern as an officer was placed in positions of responsibility at a much earlier time than was previously possible when trained as a civilian. Upon completion of the professional educational program, the young officer was exceptionally well prepared to accept and fulfill the responsibilities required of a staff dietitian in the Army Medical Service and to participate in continued research for improvement of the hospital food service program in Army hospitals.

CHAPTER XIV

Physical Therapy Educational Programs, 1947–61

Lieutenant Colonel Barbara R. Friz, USA (Ret.)

THE ARMY PHYSICAL THERAPY COURSE

On 31 December 1959, 80 percent of all physical therapists assigned to Army hospitals were graduates of the Army Physical Therapy Course. Such a high percentage vividly reflects the importance of this educational program not only as a source of physical therapists to staff Army hospitals throughout the world, but also as a significant influence on the quality of the overall physical therapy program.

Reactivation of the Army Physical Therapy Course

The year was 1946—Army hospitals were closing, patient loads were dwindling, and the ratio of physical therapists to patients was becoming ever greater. Finally, the supply exceeded the demand and, for the first time since 1922, the Army found no need to conduct a physical therapy course. The program was, therefore, discontinued.

But this plethora of physical therapists was to be short lived. Foreshadowing another personnel shortage was the termination of Army of the United States status on 30 June 1948.[1] All Army of the United States officers had to apply for a Reserve commission or be released from the service. To many the thought of such a commission evoked furtive fears of indefinite retention on active duty, a prospect most were not willing to accept. As expected, the attrition rate was high. In the 3-month period from 1 April to 30 June 1948, the number of physical therapists on active duty dropped from 253 to 197, a number which fell short of requirements and which threatened to become even smaller. Once more the Army needed additional physical therapists—this time to care for the peacetime soldier and his family.

It was soon evident that help from civilian sources was not forthcoming. Wartime experiences had given new status to this specialty, and civilian jobs, once scarce, were now plentiful. Despite the large numbers trained by the Army during World War II and the ensuing release of hundreds to the civilian market, physical therapists were nationally in short supply. Furthermore, physical therapists, like most of the population in the country, were just beginning to enjoy the flavor of postwar prosperity and to relax in the anticipation of con-

[1] Department of the Army Circular No. 27, 3 Feb. 1948.

tinued peace. Generally speaking, thoughts of military service were relegated to the realm of oblivion.

The Army, mindful of its pledge to provide the best medical care for the soldier in peace as well as in war, was again faced with the prospect of training its own professional personnel. Foreseeing just such an eventuality, The Surgeon General had started planning as early as February 1948 for the reactivation of a physical therapy course.

The first plan was to reactivate the school in its former traditional setting at Walter Reed General Hospital, Washington, D.C. Diverting this line of thought, however, was the fact that in 1946, the Medical Field Service School had been moved from Carlisle Barracks, Pa., to Brooke Army Medical Center, Fort Sam Houston, Tex. Concentrated here were Army instructors, laboratory facilities, libraries, classrooms, and the clinical material of Brooke General Hospital, all of which would serve well the interests of the physical therapy program. With this in mind, The Surgeon General decided that the location of the school would be at Fort Sam Houston in picturesque San Antonio.

Plans progressed rapidly and, on 13 May 1948, verbal approval to implement the physical therapy course was granted by the Organization and Training Division and the Personnel and Administrative Division, General Staff, U.S. Army. By dint of intensive effort and hard work, the Program of Instruction was completed in the Surgeon General's Office in June 1948 and immediately submitted to the Commanding General, Brooke Army Medical Center, for approval and publication.

On 7 July 1948, the course was formally announced: [2]

> Class No. 1 of a training course for Physical Therapists will commence on 1 November 1948. The course is divided into two (2) phases of approximately six (6) months' duration each: The first or didactic phase will be conducted at the Medical Field Service School, Brooke Army Medical Center, Fort Sam Houston, Texas, and the second or applicatory phase which follows immediately, will be conducted at selected Army General Hospitals.

Students selected for this training were to be commissioned as second lieutenants in the Women's Medical Specialist Corps Reserve.

Col. James E. Tate, MC, Chief, Physical Medicine Service, Brooke General Hospital, became medical director of the course. Maj. Ethel M. Theilmann, with 6 years' experience in directing physical therapy courses, was appointed technical director and Capt. (later Lt. Col.) Beatrice Whitcomb was named her assistant.

On 6 September 1948, 11 eager and somewhat bewildered young women arrived at the Medical Field Service School to attend the Basic Medical Department Female Officers' Course before starting the physical therapy course. Inasmuch as they were impatient to begin their professional studies, the interposition of an 8-week military course was greeted with meager enthusiasm. Alleviating their disappointment, however, was 38 hours of instruction in physical therapy, substituted for 38 hours of comparatively irrelevant instruction normally presented

[2] Circular No. 85, Office of The Surgeon General, 7 July 1948.

in the basic course. This arrangement afforded the students a tantalizing peek into their future profession and also freed 38 hours to be used for clinical observation and practice during the didactic phase.

While the first class of physical therapy students were busy with studies at the Medical Field Service School, the staffs at Fitzsimons General Hospital, Denver, Colo., and at Walter Reed General Hospital were feverishly preparing a clinical applicatory program in anticipation of the arrival of five students at each hospital in May.[3] At the same time, the Surgeon General's Office was sparing no effort in assuring a smooth integration of the two phases. Subsequently, the American Physical Therapy Association was invited to send a representative to the appropriate installations to evaluate the program. In March 1949, Miss Barbara White, Educational Secretary of that organization, visited the Medical Field Service School and Fitzsimons General Hospital. (Walter Reed General Hospital was not visited until November 1949.) An excerpt from Miss White's report on the Medical Field Service School follows: [4]

> The program is well organized and administered. The medical and physical therapy staff assigned to the Medical Field Service School is selected on the basis of past experience and interest in educational programs. There is close cooperation between the school staff and the hospital staff. There are frequent conferences between the heads of the different departments concerned.

The report on Fitzsimons General Hospital facilities and the proposed program was primarily descriptive and included several helpful suggestions for conduct of the forthcoming clinical phase.

Although the overall tone of Miss White's report was favorable, she criticized the lack of dissection material and included a recommendation that cadavers be provided for dissection in the gross anatomy classes. With this comment, she "zeroed in" on a trouble spot which had plagued the faculty since the inception of the course. All efforts to obtain cadavers that first year were futile. Despite repeated entreaties to the Texas Anatomical Board, that august body, it seems, had better plans for their corpora and refused to relinquish even one. At one point the possibility of either abandoning the course or moving it to another location was considered; a substandard course could not be sanctioned by The Surgeon General. As an interim measure, it was finally decided that the deficiency could be sufficiently compensated during the second phase by giving the students a minimum of 28 hours of dissection demonstration by an anatomist. This was subsequently accomplished. In her report, Miss White also recommended an exchange of visits between the physical therapy director at the school and the supervisors of the student's work during phase II in order to better integrate the first and second phases; however, because more propitious methods were possible, this recommendation was never acted upon.

[3] One of the eleven students had been dropped from the course.

[4] Report, Barbara White, Educational Secretary, American Physical Therapy Association, subject: Physical Therapy Course Conducted by the Department of the Army; Installation Visited 17–19 March 1949.

The course was approved by the Council on Medical Education and Hospitals, American Medical Association, in June 1949, 16 months after planning started. Undoubtedly, the experience gained by the Army in conducting previous physical therapy courses for many years contributed to the relative ease and speed with which the program was established and approved.

The year's educational efforts were climaxed by a conference on the physical therapy training program held in the Surgeon General's Office on 27 and 28 June 1949. Attending the conference were Lt. Col. Edna Lura, Chief, Physical Therapist Section, and Maj. (later Col.) Harriet S. Lee, Surgeon General's Office; Major Theilmann, Medical Field Service School; Maj. Elsie Kuraner, Chief Physical Therapist, Fitzsimons General Hospital; Maj. (later Lt. Col.) Agnes P. Snyder, Director, Physical Therapy Course; and Capt. Barbara M. Robertson,[5] Chief Physical Therapist, Walter Reed General Hospital. Col. Emmett M. Smith, MC, Chief, Physical Medicine Consultants Division, Surgeon General's Office, and Col. Emma E. Vogel, Chief, Women's Medical Specialist Corps, also participated in the conference.

In October 1949, 9 of the original 11 students in the first class were graduated and received their certificates from the Surgeon General's Office. In November 1949, 14 students were enrolled for the second class, thereby attesting to the prospect of the programs continuing for an indefinite time.

Curriculum

The curriculum of the Army Physical Therapy Course was designed to meet the requirements of a professional curriculum as outlined in the "Essentials of an Approved Physical Therapy School" by the Council on Medical Education and Hospitals.

As in all courses conducted at the Medical Field Service School, the curriculum was in the form of a "Program of Instruction," a detailed publication which included the title of each course subject along with the lesson plan number, the scope of each unit of instruction, the type of instruction, and the pertinent references. Course title terminology underwent several changes through the years. For instance, applied anatomy became functional anatomy and then kinesiology. Table 19 presents the curriculum content with changes for the years 1948–50, 1953, and 1959. The changes in title terminology are not shown.

Curriculum content remained relatively constant; however, changes in emphasis, coinciding with professional developments in the field, affected the distribution of hours. The shift in emphasis was especially noticeable in the therapeutic exercise course where procedures were increasingly directed toward total rehabilitation of the patient. Physical reconditioning, now administered by physical and occupational therapy, was also incorporated in the course.

[5] Later Lt. Col. Barbara R. Friz.

TABLE 19—*The Army Physical Therapy Course curriculum, 1948–50, 1953, and 1959*

Academic subjects	1948		1949		1950		1953		1959	
	Phase I (26 weeks)	Phase II (23 weeks)	Phase I (32 weeks)	Phase II (17 weeks)	Phase I (27 weeks)	Phase II (22 weeks)	Phase I (29 weeks)	Phase II (20 weeks)	Phase I (29 weeks)	Phase II (20 weeks)
Gross anatomy	200	.....	156	.....	156	.....	[1]150	.....	150	.....
Bandaging	23	.....	23	.....	24	.....	17	.....	17	.....
Clinical medicine	112	100	120	85	195	10	[1]117	.....	128	.....
Clinical observation and practice	38	626	85	489	.....	834	88	713	73	622
Electrotherapy and electrodiagnosis	65	10	70	10	70	10	80	.....	80	.....
Ethics and administration	.....	5	7	5	7	5	13	5	15	10
Hydrotherapy	25	.....	25	.....	25	.....	20	.....	25	.....
Journal club	.....	40	.....	40	.....	50	.....	50	.....	20
Kinesiology	.....	40	84	.....	84	.....	60	.....	60	.....
Massage	60	10	60	.....	60	.....	50	.....	50	.....
Medical physics	40	10	50	.....	50	10	40	.....	40	.....
Muscle testing	20	10	30	10	30	.....	40	.....	40	.....
Pathology	30	.....	30	.....	30	.....	[1]30	.....	30	.....
Phototherapy	30	.....	32	.....	32	.....	26	.....	28	.....
Physiology	63	12	75	.....	75	.....	[1]75	.....	[2]105	.....
Principles of occupational therapy	.....	10	.....	10	.....	10	.....	12	.....	12
Psychology	16	.....	15	.....	15	.....	16	.....	24	.....
Selected nursing techniques	10	.....	10	.....	10	.....	10	.....	8	.....
Tests and measurements	.....	.....	.....	.....	.....	.....	.....	.....	.....	38
Therapeutic exercise	97	23	105	15	105	15	115	.....	128	78

[1] Combined classes with occupational therapy students.
[2] This figure carries a 3-semester credit prerequisite.

In an effort to introduce the students to a clinical situation as early as possible, the didactic phase was kept at a minimum number of weeks. When the program was first implemented, the clinical practice period consisted of 23 weeks out of the total 49 weeks with 270 hours of formal instruction projected into the second phase, to be taught mostly by physical therapists. It was the intent of The Surgeon General that the residents in the physical medicine service at the two hospitals would also participate in the teaching program and be responsible for the following subjects:

	Hours
Roentgenology	10
Applied anatomy	40
Physical therapy as applied to—	
General medicine	10
Dermatology	10
General surgery	5
Orthopedics	30
Neurology and neurosurgery	25
Medical physics	10
Physiology	12
Psychiatry	10

Except for roentgenology, these hours were all supplementary to instruction previously presented in phase I. In reality, the courses were taught, for the most part, by medical officers in services other than physical medicine.

Despite the well-delineated scope of instruction presented in the program, the instructors in phase II encountered considerable difficulty in maintaining continuity in presentation of material. Further, as Colonel Smith noted at the June 1949 conference, the shortage of medical officers in general hospitals created problems which often prevented the instructors from appearing in the classroom at the designated time. These observations led to the transfer of the subjects in question to phase I instruction.

In 1950, when the Korean War created an immediate demand for stepped-up utilization of personnel, the Medical Field Service School responded by effecting an overall class time cut of 15 percent, thereby shortening phase I of the physical therapy course from 32 to 27 weeks. The total length of the course remained the same, however, and subjects which were slighted in the concentrated schedule of phase I were reinforced by supplemental instruction in the lengthened second phase. Paradoxically, 75 hours of the instruction taken from phase II were added to this accelerated first period, a change made possible only because the working week in Army training programs was increased to 44 hours during the emergency situation. The curtailment of phase I also canceled all clinical practice and the students were catapulted into phase II without any experience whatsoever in clinical situations —"it was like learning to type without a typewriter," declared one frustrated student. In 1953, the changing world situation again affected

training policy and permitted the restoration of 2 weeks to phase I as well as the incorporation of 82 hours of clinical observation and practice in that phase. During the critical period from 1951 to 1953, two physical therapy classes were conducted each year.

The 1953 Program of Instruction showed an unrealistic jump of from 5 to 38 hours in the course on physical medicine and rehabilitation.[6] The content, thereafter, was directed toward application of physical medicine procedures to the various conditions treated rather than procedures per se.

In 1955, the Council on Medical Education and Hospitals recommended an increased number of hours in both physiology, therapeutic exercise, and tests and measurements. To add more hours to an already bulging schedule would have expanded it to precarious proportions and was unthinkable to both students and faculty. It was decided to meet the additional requirements in physiology by adding 3 semester hours to the prerequisites for selection of students. Although the recommended additional hours in both therapeutic exercise and tests and measurements were in reality amply provided for in terms of supervised clinical experiences, they were not reflected as such in the Program of Instruction. These hours were, therefore, delineated and incorporated in the phase II curriculum.

Selection of Students

Students for the 1948 class were selected by a committee of officers designated by The Surgeon General from applicants who presented the following basic prerequisites:[7]

> *a.* Have completed a course and hold a degree with major emphasis on physical education from an accredited school or university.
>
> * * * * * * *
>
> *c.* Have reached their 21st but have not passed their 26th birthday on the date of appointment in the Women's Medical Specialist Corps of the Officers' Reserve Corps (fig. 125).
>
> *d.* Make an application for extended active duty for a period of two years * * *.

If selected, students were required to sign a statement of their intention to apply for a commission in the Regular Army after satisfactory completion of 2 years' active duty and if otherwise qualified. Such an obligation, however, proved to be a deterrent in recruiting students and was removed in February 1952.[8]

The requirement of a physical education major stemmed from the time physical therapy was emerging as a new specialty in the United States. Physical education was then considered the educational background of choice because (1) the physical education curriculum included science courses basic to the study of physical therapy and (2)

[6] The number of hours in this subject are included with those of clinical medicine, table 19, p. 449.
[7] See footnote 2, p. 446.
[8] Department of the Army Special Regulations No. 605–60–50, Changes 1, 12 Feb. 1952.



FIGURE 125—A new student officer, 2d Lt. Joicey Putnam is "pinned" by her parents, Brig. Gen. P. A. Putnam, USMC (Ret.), and Mrs. Putnam at a ceremony at Fort Myer, Arlington, Va. (U.S. Army photograph.)

many physical therapy techniques and procedures had been adapted from those used in physical education. From 1922 to 1943, the Army had consistently adhered to the prerequisite of a major in physical education. In the meantime, civilian schools were finding that other courses, especially those strong in the biological sciences, provided an excellent foundation for physical therapy. In 1944, the Army capitalized on this experience by liberalizing its prerequisites to include a major in the biological sciences (ch. VI, p. 172). In 1954 and in ensuing years, no definite major was stated as a prerequisite, although a specified number of hours in biological and physical sciences and in pyschology were required. As in other professional fields, the liberal arts subjects were considered particularly desirable.

The wide variance in academic standards of colleges and universities throughout the country presented a major problem in evaluating the scholastic record of the student. The rating of the school represented was taken into consideration whenever the information was available, but in many instances, it was impossible to accurately assess the scholastic standards of a specific school. Another considered factor in evaluating applicants' records concerned the misleading grade point average

of the physical education major. Because of the many subjects in the physical education curriculum which required mainly physical skills, the overall average often reflected a distorted picture of academic ability. To offset this possibility, a separate grade point average was computed from the science and psychology prerequisite courses.

Despite the pitfalls of evaluation, the scholastic record proved to be the single most valuable criterion in selection of students. It was observed that students whose academic records averaged below 2.5 (Scale: A=4.0) found great difficulty in maintaining the standards at the Medical Field Service School. Because the selection board was unable to interview applicants, it was dependent on comments by procurement officers and members of college or university faculties for information relative to personality traits and social acceptability. A photograph and an autobiography which accompanied the application supplemented other data and sometimes proved to be a deciding factor in selection of the student. Selection of students for the physical therapy course was restricted to women, because only Regular Army qualified individuals were accepted in the physical therapy course, and during this period under consideration, Regular Army commissions in the Army Medical Specialist Corps were extended only to women. Further, the limited quota of male physical therapists in the Army was easily filled by young men subject to the draft and the Army believed it imprudent to offer this costly program to men when qualified male physical therapists were readily available.

In January 1953, in compliance with policies recommended by the Council on Medical Education and Hospitals, the board of officers in the Surgeon General's Office decided that the selection of students should be made in cooperation with the medical and technical directors of the physical therapy course at the Medical Field Service School. The board was to convene on 12 February 1953. Although the meeting never materialized, the applicants' records were sent to the Medical Field Service School for review and evaluation as well as for recommended lists to be categorized as "principals," "alternates," and "not considered for appointment."

The entire idea was abruptly aborted the following year when the Chief, Personnel Division, Surgeon General's Office, wrote to the Commandant, Medical Field Service School, that "In view of the time factor and additional administrative procedures necessary to be accomplished in order to commission participants * * * it is not deemed feasible to forward applications to your command for review and recommendation." [9]

The entire responsibility for selection of students thereby reverted to the board in the Surgeon General's Office. By coincidence, since 1954, each Chief of the Physical Therapist Section had previously

[9] Letter, Col. H. W. Glattly, MC, Chief, Personnel Division, Office of The Surgeon General, to Commandant, Medical Field Service School, Brooke Army Medical Center, 22 Apr. 1954, subject: Recommendations for the Selection of Participants for the Physical Therapy and Occupational Therapy Course.

served as Director of the Army Physical Therapy Course. As a permanent member of the board, she contributed, on the basis of her experiences, pertinent and valuable information relative to the criteria of selection. If this situation no longer held, it was believed imperative that the incumbent director of the school participate in selection of students.

Phase I: The Medical Field Service School

Setting

The Medical Field Service School (fig. 126), home of the Army Physical Therapy Course, figures prominently in the gamut of memories for many officers of the Army Medical Service. Located in San Antonio, there were both attractions and distractions to divert the study-weary officer. Golfing, tennis, bowling, and swimming were among the activities easily accessible on the post. Tours to the many historical and uniquely beautiful spots in Texas as well as to the cities and haunts of colorful old Mexico were arranged by Special Services. Fort Sam Houston was also a crossroads for Army Medical Service officers and here old friends often met, making "socializing" an especially active pastime.

At the school itself, however, business and hard work were the order of the day and the challenge of its motto, "To Conserve Fighting Strength," was answered by a program of intensive study and research. Students spent long hours in the classrooms and laboratories (fig. 127), interrupted periodically by a frantic dash to "the pit" [10] for a gulp or two of coffee, the sustaining life force of the day.

At noon each day, all classes stood formation, followed by a brief period of drill. The physical therapy students with their colleagues, the occupational therapy students, performed intricate maneuvers in precision time—much to the delight of the balcony bystanders who assembled regularly to observe the activities in the quadrangle. To the Medical Field Service School audience, these lady soldiers were the "Rockettes." Surprisingly, the lady soldiers appeared to honestly enjoy this midday break—in fact, one former student was heard to comment that the marching was the one thing she missed most after leaving the school. It was the only active militaristic duty the physical therapy students were required to perform.

Students were required to wear uniforms only during the school day and occasionally to a formal military function. In practice clinic (fig. 128), they wore the hospital gown, slacks, or white shirts and shorts. Mornings when the students went to the hospital for clinical observation and practice, they always were pleased and proud to wear a gleaming white hospital uniform—it seemed to give them a feeling of being part of the professional group.

[10] Familiar name for the Medical Field Service School Officers' Club, located in a dimly lit and sprawling basement of one of the school buildings.

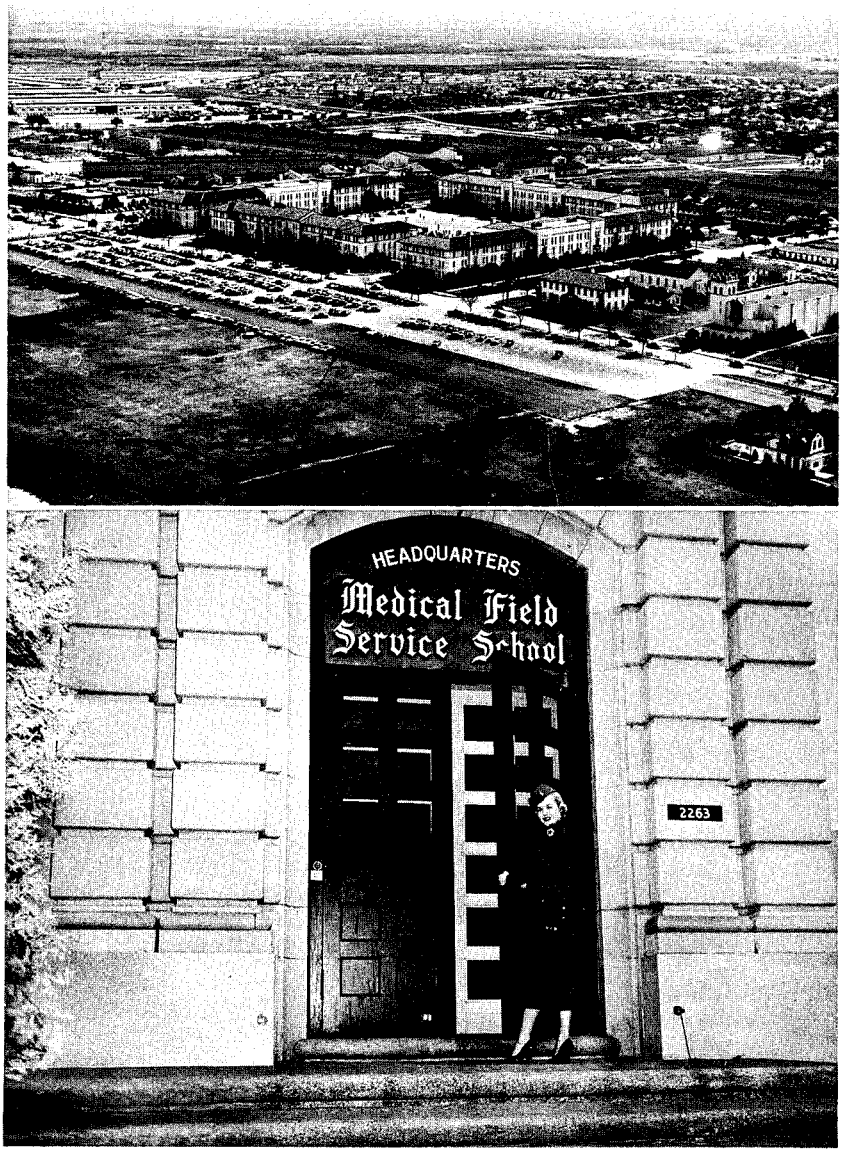


FIGURE 126—Background for a new career. (Top) The Medical Field Service School, Fort Sam Houston, Tex., location of the first tour of duty for physical therapy students. (Bottom) "The doorway to learning."

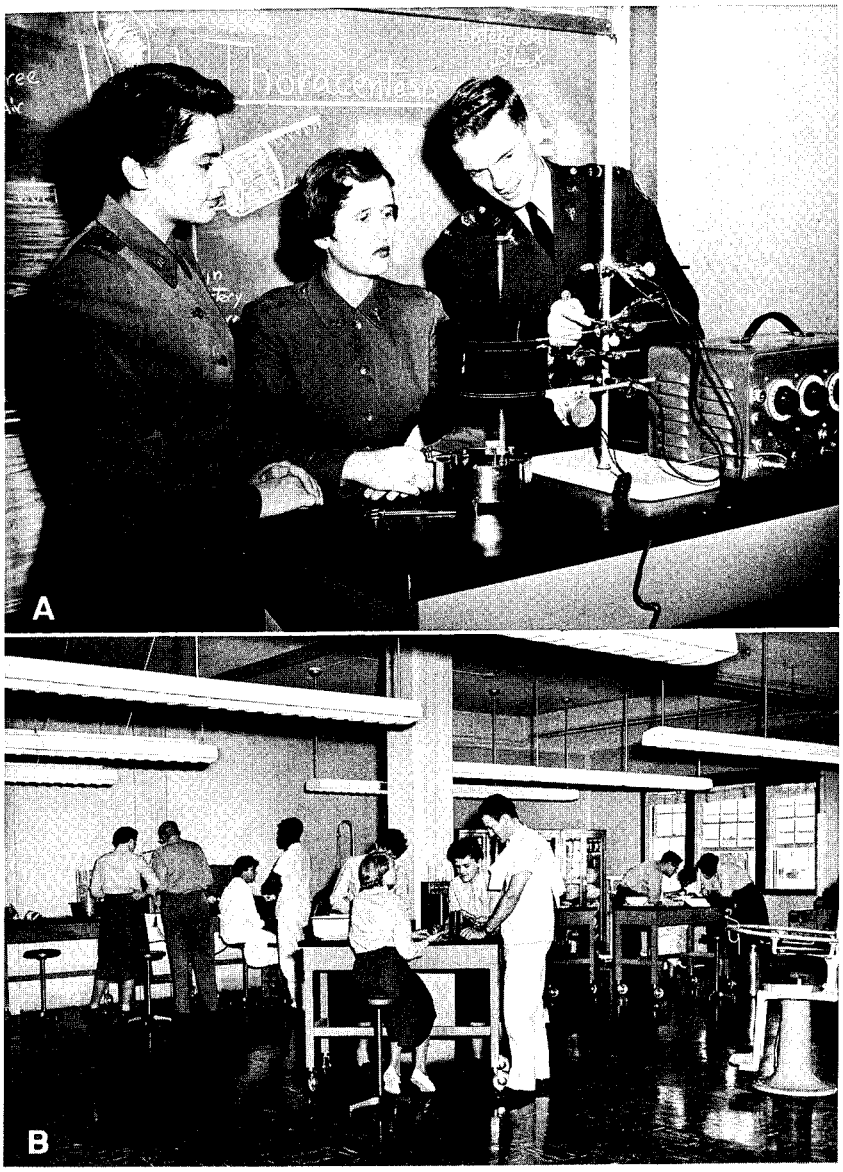


FIGURE 127—Classroom and laboratory activity, Medical Field Service School, Fort Sam Houston, Tex. A. The physiology instructor, 2d Lt. David G. Reynolds, MSC, demonstrates a point by use of a simple experiment. B. The physiology laboratory, 1957.

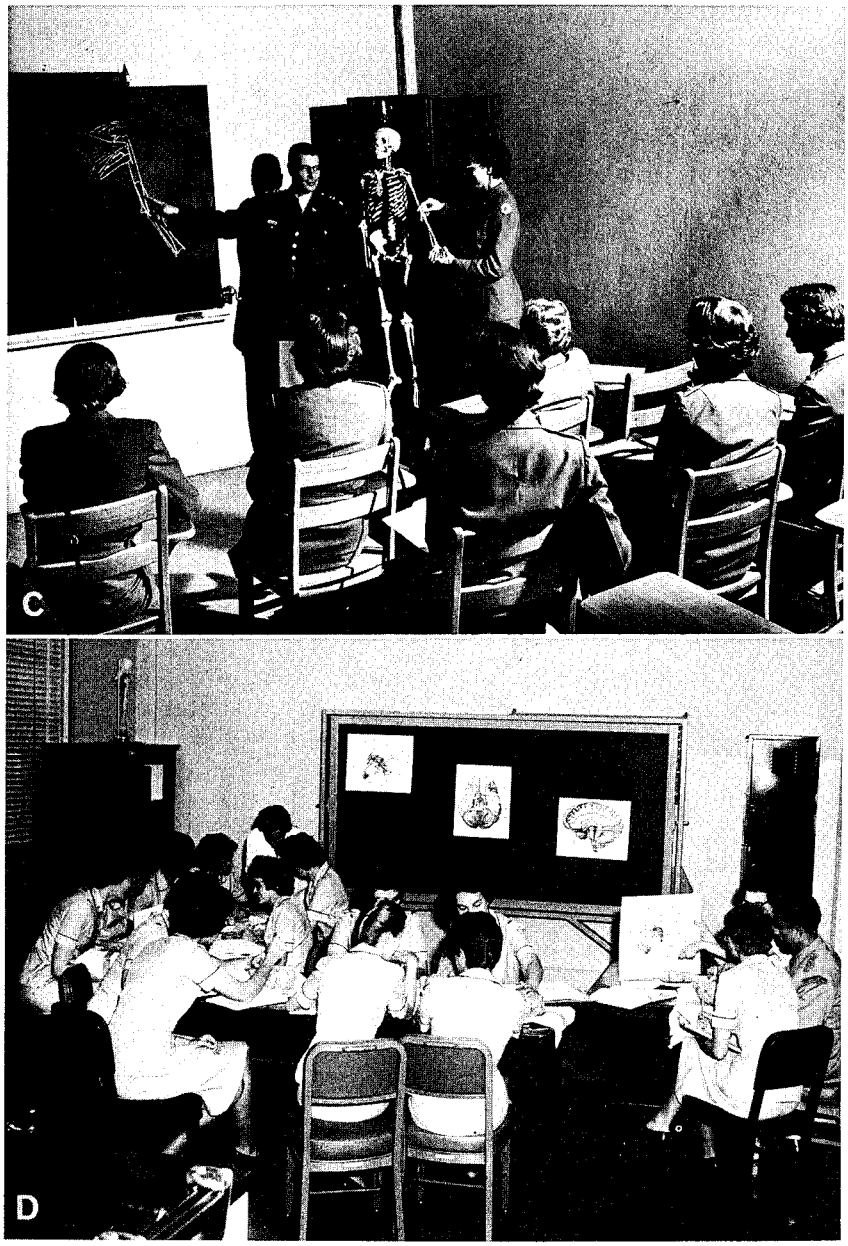


FIGURE 127—Continued. C. The anatomy instructor, Lt. Col. Archibald R. Buchanan, MC, whose talent for drawing helps illustrate a point. D. Neuroanatomy keeps students busy for many hours. A "lab" session. (U.S. Army photographs.)

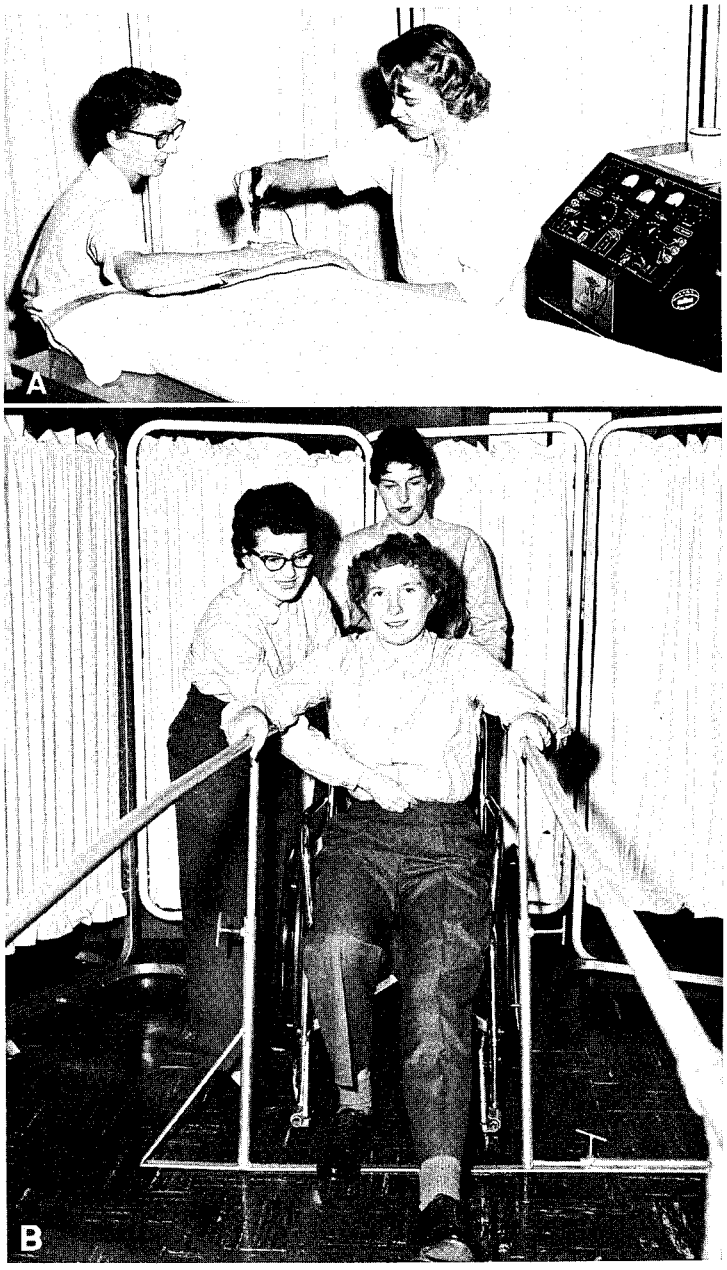


FIGURE 128—Students practicing and experiencing therapeutic procedures they will soon be applying to patients. A. Electrical stimulation being applied by a fellow student. B. Simulating a common physical disability, students practice transfer from sitting in a wheelchair to standing between parallel bars.

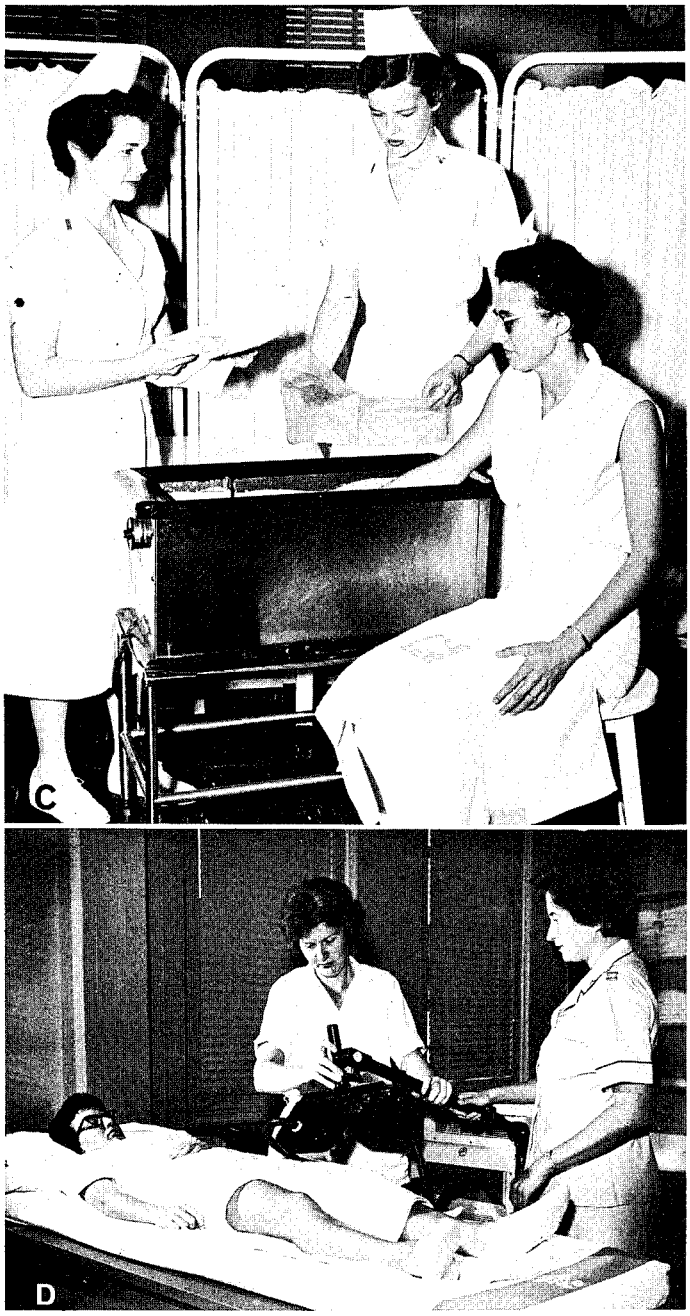


FIGURE 128—Continued. C. The paraffin bath provides a soothing and comfortable sensation. D. Diathermy is applied to "patient" as instructor observes. (U.S. Army photographs.)

The present-day Medical Field Service School originated in Washington in 1893 and was relocated at Carlisle Barracks in 1920. After it was moved to Fort Sam Houston in 1946, it was reorganized to incorporate and absorb all the independent Medical Department schools giving specialized instruction to Army personnel.

The Medical Field Service School provided systematic progressive training and educational programs for Army Medical Service personnel in professional, technical, administrative, and military subjects which pertained to the Army Medical Service. A large resident faculty selected from highly qualified officers was available to conduct the many courses of instruction for medical officers, dental officers, veterinary officers, nurses, dietitians, occupational therapists, physical therapists, and enlisted personnel. Supplementary teaching staff was procured from civilian sources and from other Army installations.

Basic training

Except for fiscal year 1954, attendance at the physical therapy course was preceded by a basic course in military instruction, known variously as the Medical Department Female Officers' Basic Course, Officer Orientation Course, Medical Service Women Officers' Basic Course, and the Army Nurse Corps Officers Orientation Course. In 1948, the course was 8 weeks in length. In September 1950, it was decreased to 4 weeks, and when the 8-week course was resumed in October 1952, the physical therapy students did not attend. Instead, 34 hours of military instruction was incorporated in the physical therapy curriculum, an ill-conceived plan which overburdened both student and faculty. As a result, an arrangement was made whereby the subjects which concerned physical therapy were presented within the first 4 weeks of the basic course and the physical therapy students attended only during this period.

This preliminary instruction provided the students with an orientation to the military and an adequate background of information to guide their military behavior and activities as U.S. Army officers. The students were introduced to subjects pertaining to military history, organization, and administration, as well as to practical lessons in military customs and courtesies and wearing of the uniform. Instruction in drill was presented during this time.

The weeks spent in basic training were generally carefree and the course required little outside preparation. With an abundance of available escorts, most students tasted liberally the joys of an unusually active social life, and many a physical therapy student met her future spouse during basic training at the Medical Field Service School. Professional ambitions, however, were temporarily thrust into the background and the abrupt transition to a program of concentrated study was sometimes frustrating and difficult. Eventually, the physical therapy faculty started a counseling system and regularly scheduled inter-



FIGURE 129—Capt. Beatrice Whitcomb points out to students the physical disabilities affecting this patient's walking.

views gave the student an opportunity to consider events in realistic perspective.

Faculty

Because the Army Physical Therapy Course was the primary source of physical therapists assigned to Army hospitals, it was considered of more than usual importance that the professional education of the students be of the highest quality possible, and because the faculty is generally conceded to be the most important element in an educational system, the selection of a faculty member was accomplished only after the most careful scrutiny of her qualifications. It was determined that this individual should be highly qualified in her professional specialty, must be interested in and motivated toward the field of teaching (fig. 129), must have the ability to function in the capacity of teacher according to sound principles of education, and should, preferably, have experience in the field of education.

All physical therapists who were selected for assignment at the Medical Field Service School had completed courses in graduate study. All physical therapy directors assigned to the school between 1949 and 1960



FIGURE 130—Capt. S. F. Moorehead, Jr., a medical officer at Brooke General Hospital, Fort Sam Houston, Tex., explains the goals of treatment for this patient.

held a master's degree. Of the 11 physical therapy instructors assigned since the beginning of the course, 7 had earned the master's degree, and by 1959, all physical therapy faculty members held the master's degree, indicating an upgrading in the educational qualification of these individuals. The majority had previous teaching experience ranging from a prolonged period of several years to a relatively limited amount, such as practice teaching.

The basic and medical sciences in the course were taught by specialists in these fields—physicians, physicists, anatomists, and physiologists—usually assigned to the Medical Field Service School and sometimes on a permanent basis with civilian status. Physicians from Brooke General Hospital also assisted in the medical sciences (fig. 130). Guest speakers of national and international renown were invited to give lectures in an area of their specialty. For instance, Colonel Vogel came regularly to the school to speak on the history of physical therapy in the Army. Among the many guest speakers were Khalil G. Wakim, M.D., physiologist from the Mayo Clinic, Rochester, Minn.; Marian Williams, Ph. D., physical therapist and anatomist from Stanford University, Palo Alto, Calif.; Miss Signe Brunnstrom, physical therapist; and Robert L. Bennett, M.D., Medical Director, Georgia Warm Springs Foundation, Warm Springs, Ga.; and James G. Golseth, M.D., Pasadena, Calif. (fig. 131).

Extracurricular professional activities played an appropriately im-



FIGURE 131—James G. Golseth, M.D., an authority in the field of electrodiagnosis and therapy, explains the operation of the electromyographic machine. Left to right: Maj. Vann S. Taylor, MC, Assistant Director, Department of Physical Medicine, Medical Field Service School, Fort Sam Houston, Tex.; Dr. Golseth; and Maj. Agnes P. Snyder, Director, Physical Therapy Course. (U.S. Army photograph.)

portant part in the educational advancement of the physical therapy instructor at the Medical Field Service School. By virtue of her assignment, the physical therapy director of the course assumed membership in the Council of Physical Therapy Directors, a national organization which met biannually to discuss trends and developments occurring in and affecting their professional and educational fields.

Each year one or two representatives of the physical therapy faculty attended an institute sponsored by the American Physical Therapy Association and the Office of Vocational Rehabilitation (now Vocational Rehabilitation Administration). The topics selected for discussion were of vital concern to all those engaged in physical therapy education.

The proximity of Brooke General Hospital allowed the school faculty

to take advantage of professional activities at that installation. Close liaison was maintained with the physical therapy staff at the hospital, particularly at the time the students were engaged in clinical observation and practice. During the late spring and summer months when there were no physical therapy classes in session, instructors were encouraged to work in the physical therapy clinic in order to retain proficiency in their skills, to gain insight into situations as related to teaching, and to keep attuned to changes and trends.

To conduct a completely professional course in a military educational institution is, admittedly, a unique and perhaps an incongruous situation. It proved to be a surprisingly compatible one. The application of certain military procedures in the conduct of the physical therapy course revealed both advantages and disadvantages and it would be difficult to say which outweighed the other.

The Medical Field Service School required that faculty members prepare lesson plans for each hour of instruction. Initially, the plans were to be written verbatim, a reflection of the methods used in the rigid military training necessary in the accelerated programs of World War II. This type of plan, however, was contrary to accepted educational principles, because its inflexibility precluded the exploration of free and creative thinking and limited the opportunity for the interchange of ideas essential to the vitality of a professional course. Another militant practice which distressed the faculty members was the oral presentation of examination questions to a board of officers, bearing the well-deserved label of "murder board." The questions had to be approved by this board before being given to the students. For a professional person to be cross-examined by individuals, who although excelling in their own field were usually unfamiliar with the specialty, was rightfully interpreted as uncalled for effrontery by those selected to fill teaching positions.

Fortunately, both the verbatim lesson plans and the examination of instructors were eliminated with the arrival of new directors who supported accepted principles of professional education. In fairness to the staff at the school, it must be stated that no pressure was put upon the physical therapy instructors to adhere unrealistically to the lesson plans.

Although the verbatim lesson plans were eliminated for the physical therapy course, detailed plans in outline form were still required. This in itself was a reasonable requirement in view of the necessity of long-term planning and possible emergency expansion. To the distress and frustration of the instructors, however, minor changes relating to format, numbering, and so forth were constantly being requested. With several hundred lesson plans to change, this became a time-consuming proposition and instructors felt strongly that this was detrimental to their own development and to their teaching proficiency because it deprived them of time that could have been spent more profitably in professional study and in diversified reading, essential activities in the development of the teacher.

Classes were scheduled 3 months in advance and posted by the instructor on boards which reflected the subject, date and hour, classroom, and instructor. Such a system assured not only careful planning but also a reasonable balance in the distribution of hours and the appropriate sequence of subject matter.

It is evident that the physical therapy instructors at the Medical Field Service School carried a heavy load of responsibilities other than those related to class preparation and actual teaching. The Program of Instruction became their responsibility following the initial writing. A bulletin for the course was prepared and published biennially. Course outlines for each subject were written and kept up to date. Compilation of extension courses also demanded considerable time. In 1951, a third faculty member was added to the staff because of the increased load of two professional classes per year. When the number of classes reverted to one per year in 1954, the third member remained in order to provide a faculty whose size was in keeping with the magnitude of the workload.

Time to develop standards of excellence in a program of this type called for tours of duty beyond the normal 2- or 3-year periods. Major Snyder served two separate tours for a total of 6 years and Major Robertson was assigned for 5 consecutive years.

The following is a roster of the physical therapy faculty at the Medical Field Service School from 1948 through 1960.

Directors	
Maj. Ethel M. Theilmann	1948–49
Maj. Agnes P. Snyder	1949–53
Maj. Barbara M. Robertson	1953–58
Lt. Col. Agnes P. Snyder	1958–60
Lt. Col. Elizabeth J. Davies	1960–
Instructors	
Capt. Beatrice Whitcomb	1948–49
Capt. Genevieve S. Beard	1949–50
Capt. Beatrice Whitcomb	1950–52
Capt. Frances M. Davison	1951–53
Capt. Martha M. Boger	1952–55
Capt. Mary S. Lawrence	1953–54
Capt. Mary E. Frazee	1953–54
1st Lt. Sarah B. Dempster	1954–56
Capt. Mary E. Frazee	1954–57
Capt. Rachel H. Adams	1957–60
Capt. Corrine L. Strong	1957–59
Capt. Patricia Wakefield	1959–
Maj. Joan H. Perry	1960–

Facilities and equipment

Until 1955, the practice clinic where the students spent almost half their time was located in a building about a half mile from the school,

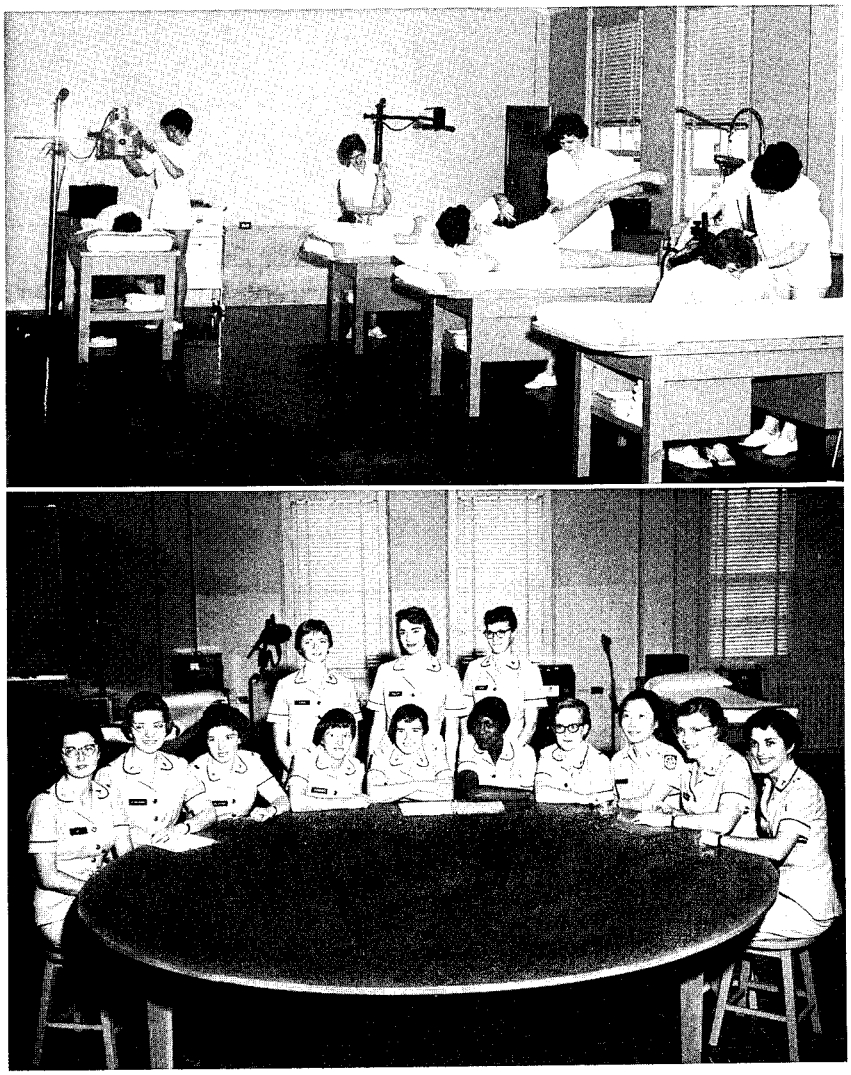


FIGURE 132—Practice clinic, physical therapy course, Medical Field Service School, Fort Sam Houston, Tex. (Top) Plinth area. (Bottom) Round table for discussion periods. (U.S. Army photographs.)

thus necessitating bus transportation. During World War II, this clinic had been an operating physical therapy department and was well equipped for teaching purposes. A large classroom was available upstairs. Another classroom at the school was assigned to physical therapy students for their exclusive use. Although the clinic itself was satisfactory, travel was time consuming and transportation was not always dependable.

In 1955, after many months of frustrating effort to get space for a practice clinic at the Medical Field Service School, the physical therapy faculty was delighted to learn that a large area (far beyond expectations) was available on the third floor of one of the quadrangle buildings at the school. Capt. (later Maj.) Martha M. Boger drew up the plans for renovation. They included a spacious clinic, an exercise room, an air-conditioned classroom, office, lounge, shower and lavatory, and storage rooms. When Captain Boger left, Capt. (later Maj.) Mary E. Frazee took charge of getting the work completed. The sparkling new clinic (fig. 132) was ready for occupancy in January 1956 when the students returned from their Christmas vacation. Since that time no complaints have been heard about facilities except perhaps an occasional groan from a faculty member wearily mounting the two long flights of stairs to the clinic.

Physical therapy equipment was always adequate at the school and became superior as the latest devices and machines were added from time to time. For the most part, training aids and visual aids were limited only by the instructor's lack of imagination. When the course was first started, the Armed Forces Institute of Pathology, Washington, D.C., constructed mockups of equipment to be used for practice. Later, training aids were supplied by the Graphic Arts Section at the Medical Field Service School which provided both simple and elaborate types. Even the platform behavior and mannerisms of the instructor were studied in order that colors complementary to his personality could be used in developing the training aids. Films, tapes, filmstrips, and slides had only to be ordered by number to have them delivered at the appropriate hour in the appropriate classroom and accompanied by a projectionist. Mimeographed material could be ordered and distributed to the students before class, during class, or any other time, as desired. A professional library was maintained in the students' lounge, but all students were free to use the well-stocked libraries at the Medical Field Service School and at Brooke General Hospital.

Although it took more years than expected, the school was eventually well supplied with cadavers. This was achieved only through exhaustive efforts on the part of the anatomists at the Medical Field Service School, especially Walter E. Sullivan, Ph. D., and Virginia Harrison, Ph. D. An enlisted physical therapy specialist was assigned to the clinic to assist the instructors in their teaching chores and to supervise policing the area.

Phase II: Hospital Clinic Experience Programs

Early clinical experience (fig. 133) may well be the most important and crucial period in the life of the professional person. It becomes a measuring stick against which future attitudes, procedures, standards of performance, and behavior will be evaluated. In this phase, the teaching process becomes more active in nature—the student participates independently, he observes, he sees changes as the result of treatment, and evaluates what he sees.



FIGURE 133—Clinical experience in the hospital. (Top) Students gather around while an instructor demonstrates a point in muscle testing, Brooke General Hospital, Fort Sam Houston, Tex. (U.S. Army photograph.) (Bottom) A student at Walter Reed General Hospital, Washington, D.C., experiences the satisfaction of helping this patient along the road to recovery.

With this in mind, the Army physical therapy program of the past decade increasingly stressed the importance of the clinical experience. Not only was clinical observation and practice started earlier in the school year, but more attention and planning were directed toward this area of instruction to insure continued application of sound teaching principles. Lecture courses were gradually disappearing in phase II, giving way to informal discussion-type classes with emphasis on student participation and independent study.

Selection of installation

The capacity of a facility to provide a rich and challenging clinical experience is a primary consideration in selection of the hospital where the student may pursue his professional studies following a concentrated academic program. To assure breadth of experience, the hospital must provide a group of patients representing a wide range of medical conditions; to provide depth of experience requires a large patient load; and to provide appropriate and stimulating learning experiences calls for a professional staff whose interests embrace both physical therapy and education.

In consideration of these criteria, a memorandum from the Surgeon General's Office to the General Staff, U.S. Army, dated 13 April 1948, stated that selection of Army general hospitals for clinical applicatory training was to be determined on the basis of (1) the exact numbers of students enrolled, (2) the location, number, and type of patients requiring physical therapy, and (3) the availability of physical medicine personnel qualified as instructors.

The Surgeon General's Office decided that Fitzsimons and Walter Reed General Hospitals met the specified requirements and these installations were subsequently selected to conduct the first clinical applicatory programs, starting on 23 May 1949.

Although criteria for selection appeared to be fully met at the time, a visit to Fitzsimons General Hospital by Colonel Smith, in 1951, prompted him to recommend discontinuance of the program at that installation because it did not provide sufficient experience in the treatment of orthopedics, amputations, and peripheral nerve injuries. This recommendation led to transfer of the program to Letterman General Hospital, San Francisco, Calif.

The stepped-up program at the Medical Field Service School following the outbreak of the Korean War resulted in the implementation, in 1952, of a third applicatory program at Brooke General Hospital. Since that date and until the present time, Walter Reed, Letterman, and Brooke General Hospitals continued to conduct the clinical applicatory phase. In 1952, 1953, and 1954, two classes per year were conducted at each hospital to accommodate the output of students from the Medical Field Service School.

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Personnel responsible for conduct of clinical applicatory phase

STUDENT SUPERVISOR

In charge of the students and the teaching staff at each of the three hospitals was the student supervisor, a physical therapist. Although the chief physical therapist in some instances acted in this capacity when the program first started, in more recent years a highly qualified physical therapist with educational as well as clinical experience was designated for this position. The student supervisor was responsible for the entire program, including administrative and organizational details, setting up classes, delegation of instructors, staff orientation, and counseling and evaluating students.

Experience has shown that the position of student supervisor must be filled by an individual of wide professional attainment in the field of physical therapy and at least a broad understanding of the principles of education. She must have ability to organize, to pull the efforts of the group together, to understand and observe teaching principles, and to be capable of creating learning situations for the student. Within recent years, a sufficient number of Army physical therapists had earned the master's degree to allow selection of instructors from this group. It appeared that the physical therapist who had just completed graduate study was unusually well suited to work with a group of students. She was imbued with enthusiasm, enjoyed a fresh or renewed insight into the nature of her profession, and brought stimulating ideas not only to the students, but to the staff as well.

STAFF

The importance of selecting physical therapists of the highest caliber to staff the hospital where the applicatory phase is conducted cannot be overemphasized. The relationship of the student to each staff member as well as to the staff as a unit constitutes one of the dominant influences throughout the second phase. In questioning physical therapists who were graduated from the Army course, one is amazed at the thoroughness and severity with which each staff member was scrutinized and judged in light of what the student expected a physical therapist to be. The students were especially sensitive to attitudes and behavior of the graduate, particularly toward the patient, the doctor, and the student herself. If the physical therapist did not measure up to the standards the student set for her, the impact was one which apparently was not easily forgotten. Years later,[11] an amazingly vivid and intact picture of shortcomings and imperfections was conjured up without difficulty. Most students, however, were forcibly impressed by the deep interest of all instructors in their well-being and success.

There has been a trend in Army physical therapy clinics within the past few years to involve every member of the staff in the teaching

[11] Survey of graduates (1947–60) conducted by the author.

program. Even the least experienced of the group was requested to teach a minimal number of 2 or 3 hours. This participation seemed to draw the group closer together and unite their efforts toward the professional advancement of the student. Further, it helped to earmark those physical therapists who had unusual aptitude for teaching and whose performance warranted further education. The attitude of the various staff members toward the student program is worth noting. Solicited comments from 21 supervisors and chiefs of sections pertinent to staff attitudes included "most enthusiastic," "excellent," "all worked hard," "most were stimulated," "eagerness and cooperation," and "excellent and enthusiastic."[12] Certainly these comments speak well, not only for the student supervisor, but also for the chief physical therapist whose support of the program must be complete and unchanging.

One of the important factors in staff acceptance of the students was the excellent orientation program conducted before their arrival (fig. 134). Staff physical therapists were sometimes given reviews in skill areas in which they felt insecure. The student program was presented and discussed in detail with members of the staff; outsiders were called in to speak on subjects related to education, teaching skills, and interpersonal relations. In one instance, young medical officers contributed to the planning and preparation of certain aspects of the program. Enlisted men assigned to the physical therapy clinic were also present at the meetings, so they would know what to expect and act accordingly. Pertinent written material was distributed to the staff, as indicated.

The medical officers of the physical medicine service contributed their services by teaching some of the classes. They instructed in the administration and application of physical medicine procedures and presented lectures in electrodiagnosis and electromyography. In several instances they conducted the Journal Club and assisted the students in overcoming any deficiency which might have occurred in the academic phase. The Chief, Physical Medicine Service, serving as the medical director of the program, worked with the student supervisor during implementation of the program. He helped to plan the curriculum, to set up the classes, and to coordinate instruction with other medical officers. When the overall program was well established, he acted more in the capacity of a consultant, and the student supervisor, for the most part, arranged the programing.

Throughout the years the medical officers in all services showed keen interest in the student program and were most cooperative and willing to assist. As has been noted previously, the only difficulty arose when busy doctors could not get away from emergent situations to conduct classes for which they had been scheduled. Other hospital personnel contributed generously with their time and talents in the training of these young students—especially those in the surgical service, the orthopedic service, the nursing service, the American National Red Cross, and in occupational therapy.

[12] Survey of chiefs of sections and student supervisors conducted by the author.



FIGURE 134—Physical therapists at Walter Reed General Hospital, Washington, D.C., preparing for incoming class of students, 1st Lt. Charles Hartman (left) and Maj. Corrine L. Strong (right).

Orientation to professional activities in the hospital

A good understanding of the overall management of the patient is essential as a basis on which the physical therapist can intelligently and understandingly exercise professional judgment. To provide this background of knowledge, the training program must include an opportunity for the student to observe and participate in certain activities other than those directly related to physical therapy.

In accomplishing this, a portion of the phase II program was devoted to such activities as attendance at ward rounds, clinics, and meetings. Ward rounds were attended by all students and provided real learning situations. The doctors conducting the rounds were usually pleased to include the physical therapy students in the discussion. This not only made the clinical experiences more meaningful, but alerted the student to areas of her profession in which she must be knowledgeable and proficient.

Students were permitted to observe surgical procedures. During the early hospital experience, it was considered desirable for them to see at least one orthopedic operation (usually an arthrotomy of the knee), one neurosurgical procedure, thoracic surgery, and in some instances,

plastic surgery. Some students observed brain surgery, some heart surgery, and some the introduction of an intramedullary nail.

The Journal Club which was held during the clinical phase promoted an interest in journals in the professional and scientific fields. Attention was given to use of the medical library, abstracting articles, and speaking before groups. Usually a project, such as a report on literature research presented before the staff, climaxed the activities of the course. Several students abstracted articles which were accepted by their professional journal. Students were encouraged to attend professional meetings and to participate in all activities related to the physical therapy or medical field. They assisted in making exhibits, in planning staff meetings, and in community activities. Under the direction of Maj. (later Lt. Col.) Elizabeth J. Davies, a group of students at Letterman General Hospital completed a research project, "The Use of Ice for Increasing Joint Range of Motion," later reported in the Student Section of *The Physical Therapy Review*. Orientation to the military was continued during the clinical affiliation. Students attended or participated in hospital and military activities, such as receptions, athletic activities, social functions, and military ceremonies.

To broaden their experience, the students made field trips to hospitals and rehabilitation centers in the area. Those at Fitzsimons General Hospital were assigned to local civilian hospitals for short periods of clinical practice. Although work with children greatly increased because of the increasingly large military dependent load, an attempt was made each year for the students to either visit or have some clinical experience at a civilian children's hospital.

Integration of Phase I and Phase II

Characteristic of professional educational programs is the need for effectively and smoothly integrating the theoretical with the applicatory aspect. In civilian physical therapy programs, the proximity of the school and the clinical affiliation lends itself readily to the achievement of this objective. In the Army, the far-flung geographic locations of the participating installations present the added challenge of overcoming a distance barrier. Recognizing this element of remoteness as a potential disadvantage, the Surgeon General's Office, early in 1948, evolved and implemented a carefully devised plan to facilitate integration of the two phases. Major Lee, representing the Surgeon General's Office, visited both the Medical Field Service School and the hospitals selected to conduct the applicatory phase and assisted in the establishment and coordination of the course. She also appraised all participants of the overall purpose, goals, principles, and relevant activities of the entire program.

To further insure a unified concept of the program and to assist supervisors and instructors on the clinical level, a manual entitled "Clinical Practice Guide for Physical Therapy Students" was compiled in the Surgeon General's Office and published early in 1950. It dealt

with supervision and evaluation of students, student interviews, and report forms.

Although not prepared specifically for the same purpose, the Program of Instruction required for all courses at the Medical Field Service School contributed significantly to the smooth coordination of the two periods. It served as a guide for the clinical teaching staff as well as the school staff, and provided both with an overall concept of the entire curriculum.

Educational meetings, both military and nonmilitary, afforded valuable guidance and instruction for those involved in the program. Each year at the conference of the American Physical Therapy Association, the School Section conducted well-planned meetings, many of which were geared to the needs of the clinical supervisors. Both student supervisors and school directors were invited to participate in several of the institutes sponsored by the association and the Office of Vocational Rehabilitation.

Probably the one thing that contributed most significantly to the successful integration of the student program was the annual meetings of the Medical Field Service School physical therapy faculty and the student supervisors and instructors from the three hospitals. Such a meeting was initially held in 1955 and was later made an integral part of the program.[13]

This 3-day meeting afforded a real opportunity for the participants to reiterate the basic philosophy of the school's educational goals, to discuss the conduct of the course and related problems, and to explore creative and visionary ideas and, in turn, the possibility of their realization. Student supervisors who at various times attended these meetings were: Capt. (later Maj.) Dorothy L. Kemske, Maj. Ethel Coeling, Capt. (later Maj.) Nannette Keegan, 1st Lt. (later Capt.) Esther Day, Major Davies, Maj. Ruth Ellinger, Maj. Amelia Amizich, and Maj. Dorothy Peterson.

Inasmuch as the physical therapy course was monitored by the Surgeon General's Office, visits to the Medical Field Service School and to all hospital affiliations by the Chief, Physical Therapist Section, Army Medical Specialist Corps, provided an opportunity for evaluating the program and encouraging a high level of instruction.

Discussion

Between November 1948 and January 1960, 15 classes of the Army Physical Therapy Course were conducted and 229 students were graduated. Of the 255 who entered the course, 26 failed to graduate, making an attrition rate of 10.4 percent, excluding the foreign students. Only one of the four foreign students who entered the course received a certificate of completion. Foreign students were enrolled in the school from time to time because of Army policy to accept these individuals for

[13] Administrative Letter No. 621–100, Office of The Surgeon General, 12 Oct. 1960.

training in selected courses. The school, therefore, was obligated to accept the students although their qualifications did not always meet Army standards. Usually they were given certificates of attendance. A total of 13 Air Force students were accommodated in four classes from 1950 to 1953, but this arrangement was no longer possible when an influx of Korean War casualties increased the demand for Army physical therapists. Four general hospitals conducted the clinical applicatory phase—Walter Reed, 14 classes; Brooke, 11; Letterman, 11; and Fitzsimons, 3.

The fact that the Army Physical Therapy Course was of necessity the primary source of physical therapists on active duty from 1948 to 1960 seemed justification enough for its existence. The wisdom of the Army's conducting a professional course of this nature was further borne out by a number of other factors which it seems pertinent to record here.

Whether palatable or not, it must be acknowledged that, except for male physical therapists subject to the draft, civilian trained physical therapists were generally not interested in coming into the military service. The reasons were complex and are inappropriate for discussion in this section. The fact remained, however, that any likelihood of an adequate supply of physical therapists from civilian sources was extremely remote as amply demonstrated by the futility of diligent efforts in this direction.

Periodically, the suggestion was made that physical therapists could be trained in civilian programs subsidized by the Army. In consideration of such a plan, it seemed prudent to first determine the nature of the product desired. The Army physical therapist must function in a dual role—that of (1) an Army Officer and (2) a professional person. Preparation for such a dichotomous function would seem best served by the unique combination of a professional program conducted in a military setting. Precisely such a program was the Army Physical Therapy Course. Students were oriented to the military throughout the entire educational period, thus providing them with an understanding of the basic concepts of military service not possible in civilian programs. Other than the initial basic course, the orientation was not time consuming—actually, it was provided largely by the military setting itself. Nor was there any reason why such a climate should detract from the professional excellence of the program.

There were other very practical reasons for retaining the physical therapy course. Army graduates, when released to a Reserve status, added to the pool of Reserve officers available for recall to active duty in the event of a national emergency. The value of this Reserve force was well illustrated at the outbreak of the Korean War. The constantly depleted number of officers in the Reserve pool weighed heavily in consideration of this point.

An ongoing progressive and dynamic program geared to the possibility of expansion was considered a distinct asset in the event of mobilization. An up-to-date curriculum upon which to build a new course was

considered far superior to one which was used perhaps 10 years ago, then put on the shelf, and never looked at since. The pool of instructors became larger, more experienced, and more diversified as the result of an ongoing course. These and other factors exemplified the readiness maintained when the educational program was in progress.

Distribution of teaching responsibilities to the three large hospitals had far-reaching effects on the entire Army physical therapy program, directly affecting approximately 25 percent of all Army physical therapists in any given year. The impact of the student program on the respective staffs resulted in a higher standard of performance as each tried to provide as model a program as possible. Quality of workmanship improved as the staff was challenged by the presence of students. Improvement in quality of patient care followed. This upgrading of performance was recently confirmed by a questionnaire requesting physical therapists in key positions to state the effects of a student program in the hospital. There was unanimous agreement as to the positive effects.

The patient load of the Army hospital has come more and more to resemble that of a civilian hospital thereby providing a wide range of experience. It should be pointed out that although the Army Physical Therapy Course was only 1 year in length, as far as its formal status was concerned, students remained in the Army for an additional year during which they either remained where they were or were assigned to another large hospital where supervision and in-training programs continued, a course of action which further insured superior preparation.

Summary

The years from 1948 to 1960 saw numerous changes take place in the Army Physical Therapy Course—most of them minor in nature and brought about through expediency or as a readjustment to external pressures. But upon closer inspection, another more intangible, consequently less obvious change could be discerned. Teaching "by the numbers" was gradually giving way to teaching by principles, teaching routines were slowly being replaced by problem-solving methods, the scholarly classroom lectures were heard less frequently, and more and more the students' voice could be heard, questioning, discussing, expressing opinions on subjects stemming from the learning experiences of the classroom and the clinic, or arising from independent study.

As the fifties wore on and numbers of Army physical therapists profited from the academic atmosphere and graduate study, the physical therapy faculty became, not only more sophisticated in principles of education and their application, but also more critical of the status quo and more aware and analytical of their own philosophy of education as well as that of mature educators in the field. Instructor knowledgeability in these areas became even more beneficial in terms of curriculum content. To delete subjects which were taught since the beginning

TABLE 20—*Program of instruction, physical therapy enlisted courses,*[1] *1949–51, 1954, and 1956–57*

Subject	1949	1950	1951	1954	1956	1957
Anatomy, kinesiology, physiology[2]	56	56	56	57	57	.....
Bandaging and sterile technique[2]	23	23	20	17	20	.....
Clinical medicine	41	41	42	39	39	12
Electrotherapy	20	20	15	22	25	19
Hydrotherapy	25	25	15	24	27	27
Introduction to physical therapy	12	12	10	10	10	10
Massage	45	45	40	42	47	43
Phototherapy	22	22	19	26	31	31
Therapeutic exercise[2]	30	30	28	21	24	.....
Property supply procedures	4	4	4	.....	.....	.....

[1] This table reflects only those hours taught at the Medical Field Service School, Fort Sam Houston, Tex., and not those taught subsequently at the various hospitals.
[2] Beginning in 1957, by directive from the Surgeon General's Office, these subjects were deleted from the program of instruction. Emphasis was restricted to clinical procedures.

of physical therapy; to change the character of curriculum and its content; and to make sweeping changes consistent with the findings in the fields of science and education took courage, confidence, and vision; attributes which were becoming increasingly noticeable among the instructors, especially the younger ones.

But to succeed in the pursuit of excellence takes time, so that little can be accomplished in this direction in a 2- or 3-year tour of duty, particularly by the neophyte instructor who must spend an exorbitant amount of time in preparation for classes. Nevertheless, the philosophic tone set by the faculty of the Army Physical Therapy Course at the beginning of the sixties was hopeful and visionary and seemed to herald bold and challenging changes in keeping with the unfolding developments of the time.

TABLE 21—*Physical therapy enlisted courses, 1949–60*

Course and year	Number of classes	Number of graduates
Elementary Physical Therapy Procedure Course:		
1949	2	27
1950	2	28
Total	4	55
Physical Therapy Enlisted Course:		
1951	2	54
1952	4	59
1953	3	47
1954	3	50
1955	0	0
Total	12	210
Physical Therapy Specialist Course:[1]		
1956	0	0
1957	2	49
1958	1	29
1959	0	0
1960	2	36
Total	5	114
Grand total	21	379

[1] Title of course changed.

Source: Statistics compiled from records maintained in the Office of the Chief, Physical Therapist Section, Army Medical Specialist Corps, Surgeon General's Office.

PHYSICAL THERAPY ENLISTED COURSE

In 1949, a course for enlisted personnel was implemented at the Medical Field Service School and the physical therapy staff assumed the responsibility for its conduct and instruction. The course was meant to relieve hospital physical therapists of the duties connected with on-the-job technicians' training which had been conducted in Army hospitals for many years.

Prerequisites for the course varied somewhat through the years. Initially, a score of 100 or higher in the Army general ability tests was required. By 1951, this was lowered to 90. Previous training or experience as either a medical or surgical technician was required. The applicants could have no record of emotional instability. Also considered was the applicant's interest in the care of patients and his ability to adjust to a hospital environment.

The underlying principle in conduct of these courses was to include in the course of study sufficient material of the right kind to enable the technician to assist the physical therapist in an intelligent manner. Technicians were trained to assume a wide range of clinical responsibilities which included clerical duties, maintenance of supplies, care of equipment, and elementary level treatment of patients.

The program of instruction (table 20) remained relatively unchanged during this entire period. The program developed into an extensive one, from which 379 students were graduated from 21 classes during the years 1949–60 (table 21).

CHAPTER XV

Occupational Therapy Educational Programs April 1947 to January 1961

Lieutenant Colonel Myra L. McDaniel, USA (Ret.)

Educational programs in occupational therapy are not foreign to the Army Medical Service because at three different periods in the history of Army occupational therapy training courses have been given.[1] Each course has been born of need—the need for qualified personnel to assist in the comprehensive patient care available to Army personnel and their dependents.

Army hospitals, by tradition and practice, are geared to the educational process: intern and residency programs are conducted in many of the large general hospitals, and courses for student dietitians and student physical therapists have been given almost continuously since 1922. The range in clinical material is comparable to that in most civilian hospitals inasmuch as men, women, and children of all ages comprise the hospital population.

The purposes of Army occupational therapy educational and training[2] programs are basically identical to those of similar programs given in civilian institutions, as these programs are established to meet the need for qualified personnel and to contribute to the development of the profession. The programs which concern the occupational therapy student are carefully coordinated with the requirements of the American Occupational Therapy Association[3] and the directors of occupational therapy curriculums in order that student eligibility for registration by that organization is assured.

Planning for Army occupational therapy educational programs is a responsibility of the Surgeon General's Office.[4] This responsibility includes the formulation of directives, indication of subjects and hours, selection and assignment of officer personnel to serve as faculty, determination with the Manpower Division of the number of personnel spaces authorized, and selection of hospitals to conduct the program. In addition, the Surgeon General's Office is responsible for the selection

[1] Course for Reconstruction Aids in Occupational Therapy, Walter Reed General Hospital, Washington, D.C., 1918; Postgraduate Course for Occupational Therapists, Army Medical School (now Walter Reed Army Institute of Research, Walter Reed Army Medical Center), 1924–33; War Emergency Course, participating civilian schools, 1945.

[2] Army Regulations No. 350–5, 14 May 1952, differentiates between "education" and "training" as follows: "(1) *Education* implies formal instruction and study leading to intellectual development to include the making of sound decisions. (2) *Training* implies instruction and supervised practice toward acquisition of a skill."

[3] Essentials of an Acceptable School of Occupational Therapy as prepared by the Council on Medical Education and Hospitals, American Medical Association.

[4] Plans are generated in the Occupational Therapist Section and then circulated to divisions such as Personnel, Professional, and Education and Training for comment and concurrence.

of students, their appointment, and call to active duty. The selected military installation is responsible for conducting the program which, in turn, is monitored by the Chief, Occupational Therapist Section, Surgeon General's Office.

AFFILIATION PROGRAMS

The professional preparation of occupational therapy students consists of a 4-year academic education which includes an approved curriculum of occupational therapy and leads to a baccalaureate degree. This period is followed by a minimum of 9 months' supervised clinical experience, known as the clinical affiliation, in a hospital or medical setting in specified areas of medical conditions. Although these clinical affiliation centers are not approved or accredited, some control is maintained through liaison with school and hospital center councils and by the curriculum directors through their selection of centers where their students affiliate. The Army Medical Service conducts supervised clinical experience in the treatment of patients with psychiatric, orthopedic, neurological, and general medical and surgical conditions.

The affiliation period is stimulating to both the student and the hospital teaching staff, for it is during this period that the theories learned in the classroom are tested and accepted or modified through the realities of practice. Many of the affiliates have had some previous experience[5] with patients (fig. 135) and hospital life, but the affiliation program for all is the setting for their final performance as students of the occupational therapy school curriculums.

During the period covered by this chapter, affiliation programs for civilian and military students were conducted in selected Army general hospitals. The training programs for the two groups were identical insofar as professional content and instructor interest and dedication were concerned. Because civilian occupational therapy students had little knowledge of Army and Medical Department organization, lectures on these subjects were included in their program.

From 1948 to 1958, the Army clinical affiliation program was structured around four basic areas of practice, as follows:

	Minimum period [6] *(weeks)*
Psychiatric conditions	12
Physical disabilities (surgical, neuromuscular, and orthopedic)	12
Tuberculous conditions	4
General medical and surgical conditions (other than physical disabilities)	8

A training guide, prepared in the Surgeon General's Office, was furnished to each hospital conducting the affiliation to assure uniformity

[5] Clerkship programs, one afternoon each week, included as a scheduled course in the academic phase or an affiliation program between the junior and senior year.

[6] The minimum periods are those established by the Council on Medical Education and Hospitals, American Medical Association. Experience in pediatrics was not offered in the Army program.



FIGURE 135—Students in academic phase at Medical Field Service School observing treatment procedures at Brooke General Hospital, Fort Sam Houston, Tex. (Top) 1st Lt. Norma Learned demonstrates use of sling suspension in treatment of patient with poliomyelitis to 2d Lt. Patricia Acuzar, 1952. (Bottom) Capt. Barbara M. Knickerbocker explains the benefit obtained from patient's use of bilateral sanding block. 2d Lts. Rosemary McEachern and Kathryn Goll observe, 1954. (U.S. Army photographs.)

in the Army program. Copies of the guide were furnished to the curriculum directors of occupational therapy to orient them to the program which was available to their students. The program was planned for a 40-hour week with approximately 80 percent of the affiliate's time to be spent in clinical practice, the remaining time to be spent in orientation and lectures pertinent to the administrative and professional knowledge needed in the training areas concerned.

The didactic portion of the hospital experience was delineated as to the lectures required, number of hours, and the scope of the material to be covered.[7] The programs were under the direct supervision of the chief occupational therapist of the hospital and under the professional supervision of the chief of the physical medicine service except in the fields of psychiatry and tuberculosis where professional supervision was vested in the chiefs of the services concerned in coordination with the chief of physical medicine.

The scope of the physical disabilities clinical affiliation in occupational therapy for 1948 is shown, as follows, to indicate subject coverage:

Subject	*Hours*
Orientation to hospital or section or both	2
Orientation to course of training	1
Pretesting	1
Review of anatomy and physiology	3
Review of kinesiology	3
Basic concept of—	
Orthopedic conditions	3
Neurological conditions	3
Patient-therapist relationships	2
Student conferences	12
Organization and function of a physical medicine service	2
Organization and administration of an occupational therapy section	2
Physical therapy application	2
Physical reconditioning application	1
Orthopedic application	6
Neurological application	6
Craft instruction	12
Shop practice	1
Required reading discussions	12
Professional and hospital ethics	2
Staff seminars	6
Field trips	As indicated.
Professional motion pictures	Do.
Final testing	2
Clinical practice	396
Total	480

The other affiliation programs followed much the same pattern except that subject matter pertinent to the area of affiliation was substituted.

In 1958, in line with the general trend of affiliate education, the scope of the program was focused on three major areas of practice: medical,

[7] Training guides, Occupational Therapy Clinical Affiliation Program.

orthopedic-neurological, and psychiatric conditions. The primary purpose for this change in focus was to emphasize concepts and common denominators in treatment and to deemphasize treatment of specific diagnostic entities. Compartmentalization of the training experience continued to exist, but the effort was made to stress similarities of patients' needs and problems and the similarity of techniques used in the different areas of practice. Instead of a formal lecture series, emphasis was placed on direct communication with each affiliate through the media of case presentations by the medical officers; daily discussion periods with the supervising occupational therapist and other affiliates; ward rounds, conferences on pulmonary diseases, or intake conference with the medical officers; weekly individual conferences with the supervising occupational therapist; and journal club activities. The affiliations were phased into three 12-week periods, and notification of the modified program was sent to both curriculum and affiliation directors.

Reports on the students' clinical performance in each affiliation area were made out by the appropriate training supervisor and sent through the Surgeon General's Office to the occupational therapy curriculum concerned. The report form, devised by the American Occupational Therapy Association, is a standard one used by all affiliation centers in the United States.

Civilian Student Clinical Affiliation Program

The program for civilian students authorized in December 1947 began in the fall of 1948 with 37 students.[8] To be eligible to participate, students at the time of application and appointment had to be enrolled in a curriculum of occupational therapy approved by The Surgeon General and, at the time of entrance to the Army program, had to have completed the didactic phase of the curriculum. Women under 27 years of age were eligible for appointment. Although preference was given to unmarried applicants, married applicants were accepted if they had no dependents under 14 years of age. Citizenship in the United States was required.

Students who were appointed were given a final Army physical examination upon reporting to the hospital for training. The primary reason for this examination was to insure that the student would be eligible for a commission if she wished to apply upon completion of her training. Notification of the physical examination was made to each curriculum director inasmuch as failure to pass it could result in cancellation of the student's affiliation in an Army hospital.

All requests for appointment in the Army program were made to the Surgeon General's Office by the curriculum directors who specified the areas of affiliation needed, the length of the affiliation, and, in many

[8] Circular No. 164, Office of The Surgeon General, 29 Dec. 1947. (Authorization continued under Circular No. 162, 19 Dec. 1949; Circular 220, 26 Dec. 1951; Administrative Letters Nos. 12–53, 16 Feb. 1953, 621–300, 2 Feb. 1956, and 621–300, 17 Dec. 1959, Office of The Surgeon General.)

instances, indicated the hospital preferred.[9] Appointments were limited to the number of training spaces available and were made for not less than 3 nor more than 12 months of training. The most frequent requests were for affiliations in the medical and orthopedic-neurological areas.

Although the student was classified as a civil service employee, the student positions were not counted against the hospital civilian ceiling authorizations because the appointments were obtained from the Civil Service Commission by the Surgeon General's Office. An estimated number of civilian student spaces was projected annually for each budget year.

The stipend paid to the student was a modest one. Students were furnished subsistence, quarters, and maid service, the cost of which was deducted from the stipend, leaving the student with approximately $5 per biweekly pay period for miscellaneous expenses. The students furnished their uniforms and paid their transportation expenses. In 1959, a change in the stipend calculation increased this amount to approximately $35 per pay period.

Evaluation of program

The Department of the Army determined, in March 1961, that all personnel spaces utilized by civilians for training programs would be counted against civilian personnel authorization. The decision had adverse effects upon the training program for civilian occupational therapy students as hospital commanders, understandably, were unwilling to give up civilian personnel spaces for training purposes. Nine to fifteen civilian students were annually receiving one or more phases of their clinical affiliation in Army hospitals. This decision resulted in the discontinuation of the program at that time.

To evaluate the civilian affiliation program, it is necessary to consider if it fulfilled the general purposes for which it was established: to meet the need for qualified personnel and to contribute to the development of the profession.

If the value of the program is to be determined from the standpoint of the numbers of commissioned occupational therapists this program brought into the Women's Medical Specialist Corps, its value is limited, for during this period, 1947–61, approximately 7 percent of the 230 civilian students who participated came into the Army.

Generally speaking, it is during the affiliation process that the student finds the area of practice in which she believes she wants to specialize upon completion of the affiliation. The civilian student observed that specialization at this early stage was not compatible with Army career

[9] Hospitals designated for the program were: Brooke General Hospital, Fort Sam Houston, Tex.; Fitzsimons General Hospital, Denver, Colo.; Letterman General Hospital, San Francisco, Calif.; Madigan General Hospital, Fort Lewis, Wash.; McCornack General Hospital, Pasadena, Calif.; Murphy General Hospital, Waltham, Mass.; Oliver General Hospital, Augusta, Ga.; Percy Jones General Hospital, Battle Creek, Mich.; Valley Forge General Hospital, Phoenixville, Pa.; Walter Reed General Hospital, Washington, D.C.; and William Beaumont General Hospital, El Paso, Tex.

management policy. Rotation among areas of practice is considered especially essential for the young Army occupational therapist to prepare her to assume leadership and supervisory responsibilities.

Through her experience in the Army, the civilian student also learned that military assignments are based on the needs of the service with consideration given to individual preferences whenever possible, and that as an officer she would have to take the chances that she would get the hospital and area of practice of her choice. It is understandable also that the 2-year commitment for active duty might have appeared to be an interminably long period to one who had just completed almost 5 years of education.

If the value of the civilian affiliation program is to be determined from the contribution made to the growth and development of occupational therapy, then its value is illimitable and the program can be rated high in comparison with other courses of training which are directed toward acquisition of competence and knowledge in a professional area. The training process was not stereotyped, and, through the process of instruction, both the instructors and students experienced educational growth. The training was of the highest quality and was continuously updated to include improved methods and techniques as these became known.

Military Student Clinical Affiliation Program

In 1948, the sluggish interest of occupational therapists in accepting commissions in the Women's Medical Specialist Corps stimulated an intensified procurement program directed toward graduate and student occupational therapists. Although the affiliation program for civilian students was to begin in the fall of 1948, it was anticipated that the majority of these affiliations might be of a minimum 3-month duration and, since no military obligation was incurred, no great increase in the number of Reserve officers could be assured. Some civilian occupational therapists were still on duty in Army hospitals, but as position vacancies occurred, these vacancies were to be filled by commissioned occupational therapists only, so that eventually all hospital occupational therapy staffs would be military.

A proposed solution to the problem of need for commissioned occupational therapists was to establish a program whereby an entire 12-month affiliation program[10] would be completed in Army hospitals by students who would be appointed as Reserve officers in the Women's Medical Specialist Corps. The student would be obligated to serve for a period of 2 years which would include the affiliation period and the basic orientation course at the Medical Field Service School, Fort Sam

[10] Areas to be covered were: Physical disabilities, 4 months; neuropsychiatric conditions, 4 months; tuberculous conditions, 2 months; and general medical and surgical conditions, 2 months. It will be noted that the length of the affiliation areas exceeds the minimum periods required. It was believed that the additional time spent in supervised practice would assure increased competence and knowledge for performance in the staff appointments which would immediately follow the affiliation program.

Houston, Tex. In this program, the student would not only receive all of her training, but would also have the opportunity to function in a staff capacity following her training period.

The proposal was tentatively approved in February 1948 by the Education and Training Division, Surgeon General's Office. The program was then presented to the Council on Education, American Occupational Therapy Association, which reviewed it at their 1948 midyear meeting. It was important to inform this council of the plan in order to gain support, interest, and cooperation from its members. Although this council had no authority to approve the clinical affiliation, it was directly concerned with all education of occupational therapy students.

In contrast to the civilian affiliation program in which the curriculum director requested the specific affiliations for the students, application for appointment to the military affiliation program would be made by the student herself with, of course, the knowledge and approval of the curriculum director and with the assistance of the Women's Medical Specialist Corps procurement officer in that particular Army area.

By the spring of 1949, a formal announcement of the program had been published,[11] and announcements were forwarded to all curriculum directors; by June 1949, seven students had been appointed to participate in the program which would begin in the fall. All students were required to sign a statement that they would apply for Regular Army commissions upon completion of the affiliation program. This requirement, however, was dropped in the spring of 1952 as it proved detrimental to the procurement of students for the program.

The application process did not differ greatly from that followed by a graduate occupational therapist who applied for a commission. The appointment process differed, however, in that all applications for the affiliation program were submitted to a board of officers in the Surgeon General's Office appointed specifically to select the military affiliates. The number of affiliates selected depended upon the number of spaces approved by the Manpower Control Branch, Personnel Division. Their figure was based on the estimated gains, losses, and requirements which would occur during the coming fiscal year.

In September 1951, the 12-month affiliation period was shortened to 9 months. The areas of affiliation were programed to meet the minimum time requirements of the American Occupational Therapy Association. Before 1958, an affiliate was assigned for the entire affiliation period regardless of any previous affiliation experience she might have had before entering the Army program. After 1958, the military affiliate took only those affiliation areas which she needed to complete the association's requirements. This, of course, was advantageous to the Army as the affiliate was available for staff assignment at an earlier date.

Upon completion of the affiliation program, it was considered desirable to assign the new staff occupational therapists to hospitals other

[11] Special Regulations No. 605-60-50, 4 Feb. 1949.

than the ones in which they had taken their training. This, of course, was not always possible and had to be governed by the availability of staff openings and staffing levels in the different hospitals.

Only three Army hospitals were originally used for the military program: Brooke General Hospital, Fort Sam Houston, Tex., Fitzsimons General Hospital, Denver, Colo., and Walter Reed General Hospital, Washington, D.C. (fig. 136). Effort was made to keep the number of students assigned consistent with the amount of clinical material available. These hospitals were among those used for the civilian affiliation program, thus careful coordination of the two programs was essential. Brooke and Walter Reed General Hospitals were used for the neuropsychiatric and orthopedic-neurological affiliations and Fitzsimons General Hospital was used for the affiliations in general medicine and surgery and tuberculosis.

As the number of military students increased, Valley Forge General Hospital, Phoenixville, Pa., was included in the military training program and was primarily used for the affiliations in general medicine and surgery and tuberculosis. With this addition, it was possible to use paired hospitals for training and thus concentrate the affiliates in two geographic areas: Walter Reed and Valley Forge General Hospitals in the East and Brooke and Fitzsimons General Hospitals in the West. When the number of students decreased to that which could be accommodated in one pair of hospitals, Brooke and Fitzsimons General Hospitals were used since the students were already in that geographic area, having attended the basic military orientation course at Fort Sam Houston.

In fiscal year 1956, the students were assigned to one of the four hospitals for the entire affiliation program. This freed the other hospitals for a similar type of assignment for the students completing the academic phase of the Army Occupational Therapy Course. In the previous 2 years, the groups had been scheduled for the same hospitals, and the different input dates involved imposed a heavy training burden for all concerned. In fiscal year 1957, assignment to paired hospitals was begun again since the Army course was discontinued and there had been a noted decrease in the amount of clinical material available in some of the hospitals (for example, tuberculous patients at Brooke and Walter Reed General Hospitals and orthopedic-neurological patients at Fitzsimons and Valley Forge General Hospitals).

As of 30 June 1959, 10 classes totaling 170 military students had completed the clinical affiliation program. (See Appendix P, p. 623.) The limited number of students who applied for the August 1959 affiliation program was a forewarning of greater procurement problems to come. Only five students entered that affiliation. An additional student entered the program in February 1960. This midyear affiliation proved so successful that the practice of commissioning students for a midyear affiliation became an established procedure beginning in 1962. Through this measure, the affiliation program would be available to students finishing their academic work at the end of the fall semester.

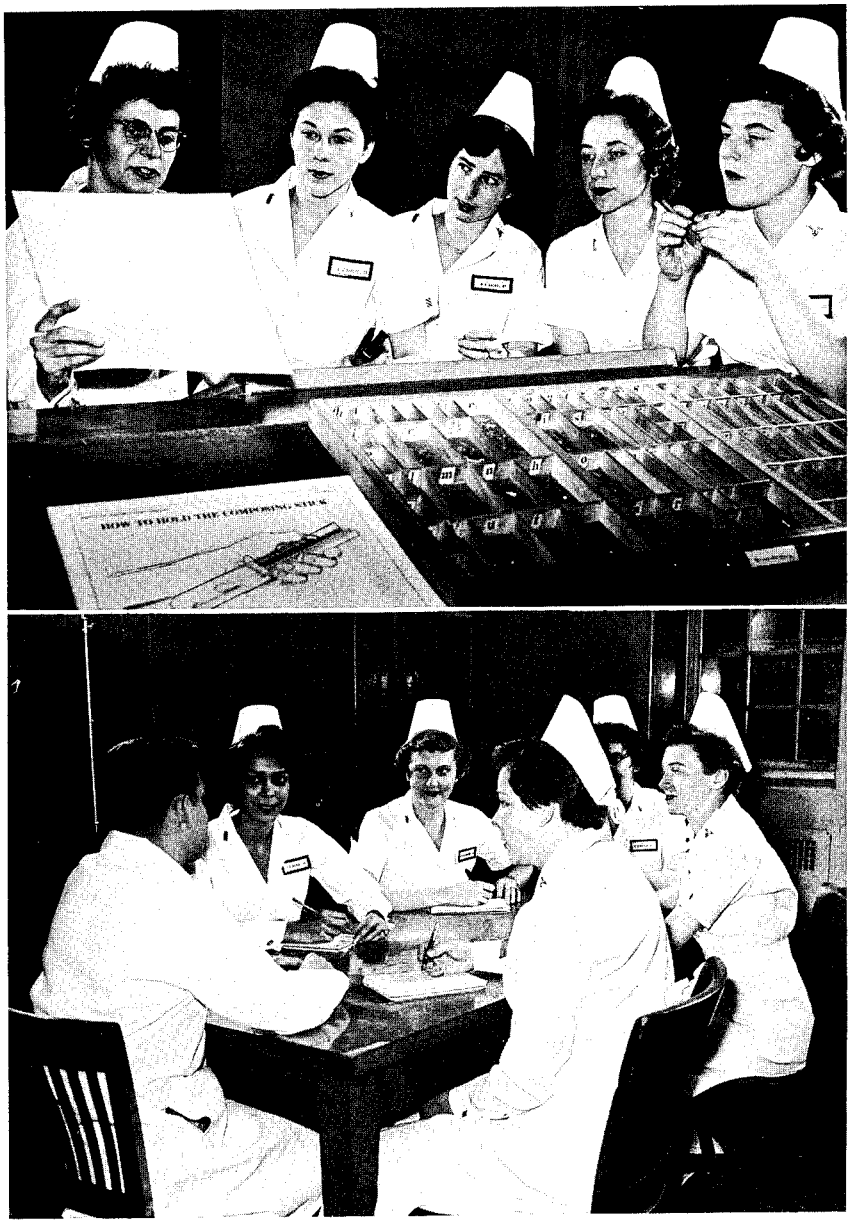


FIGURE 136—Military occupational therapy affiliates, 1953. (Top) Maj. Elizabeth M. Nachod reviews techniques of printing, Walter Reed General Hospital, Washington, D.C. (Bottom) A medical officer discusses treatment of pulmonary tuberculosis, Fitzsimons General Hospital, Denver, Colo. (U.S. Army photograph.)

Heretofore, it was necessary that they wait 7 months until the fall affiliation began. For some students, this was impractical and an unnecessary delay in completing their professional education.

ARMY OCCUPATIONAL THERAPY COURSE

In view of the seriousness of the Korean War, in July 1950, Lt. Col. (later Col.) Ruth A. Robinson, Chief, Occupational Therapist Section, Surgeon General's Office, recommended among other actions, that an accelerated training program for occupational therapists be implemented to assure smooth operation of any expansion of the Army occupational therapy program.

The experiences in World War II proved that (1) sufficient numbers of occupational therapists could not be recruited to meet an emergency need, (2) training programs to fulfill their purpose of providing trained personnel had to be initiated before the need for that specialized personnel became acute, and (3) a training program sponsored by the Army was feasible.

Proposed Course

The need for an accelerated program was obvious. The time required under normal conditions for a properly qualified college graduate to complete an occupational therapy course in one of the accredited schools was 1 academic hour plus a minimum period of 10 months of clinical affiliation. The program recommended by Colonel Robinson was similar in content and administrative procedure to the War Emergency Course for occupational therapists but was planned for 54 rather than 52 weeks in length: 18 weeks in civilian schools and 36 weeks in Army hospitals.[12]

It must be borne in mind that a course such as Colonel Robinson recommended had to be approved not only by the Army Medical Service, but by the American Occupational Therapy Association and the American Medical Association Council on Medical Education and Hospitals which had established the Essentials of an Acceptable School of Occupational Therapy in 1934.[13]

The content of the proposed accelerated course was approved by the Education and Training Division, but the plan itself was considered a matter which should be approved by the Personnel Division because of the anticipated input of personnel into Army hospitals with resulting impact on personnel ceilings and personnel costs, both of which would have to be projected and budgeted.

The Chief, Personnel Division, wrote the President, American Occu-

[12] The War Emergency Course is discussed in chapter VI, pp. 160–167. The proposed course differed from the War Emergency Course as follows: (1) Academic phase—addition of 2 hours in physiology and 2 hours in occupational therapy; decrease of 1 hour in rehabilitation, and 6 hours in manual skills. (2) Eighteen-week academic phase rather than 4 months. (3) No substitution of experience years for educational requirements. (4) Nine months' clinical practice required rather than 8 months.

[13] Hereafter the terms "Council" and "Essentials" will be used.

pational Therapy Association, to request that Colonel Robinson be permitted to meet with the association's Board of Management and Committee on Education at its annual meeting in October 1950 to discuss the problems created by the lack of occupational therapy personnel and the proposed accelerated course. Both of these groups unanimously recommended approval of the plan for the proposed course. The American Occupational Therapy Association recognized that this training would have to be subsidized if it was to be made available to the greatest possible number of participants and suggested two means of subsidization: (1) By paying tuition and maintenance costs as was done in the War Emergency Course, or (2) by appointing trainees as second lieutenants in the Women's Medical Specialist Corps Reserve.

By the end of 1950, the events in Korea indicated a lesser need for occupational therapists than had originally been anticipated. No further consideration, therefore, was given to the proposed course at that time.

By February 1951, an anticipated shortage of occupational therapists necessitated renewed consideration of the proposed accelerated course. At this time, the commissioning of the trainees as second lieutenants was added to the original recommendation. Before definite action could be taken in the Surgeon General's Office, approval of the proposed course by the American Medical Association Council had to be obtained. The American Occupational Therapy Association's request for this approval was channeled through the Council to the Committee on Physical Medicine and Rehabilitation, American Medical Association, and referred to its Advisory Committee on Education.[14]

The Advisory Committee on Education believed that the program was not a suitable one inasmuch as it did not account for all of the theoretical training required in the Essentials. They pointed out that the Council set standards for only one type of program—that outlined in the Essentials—and approval for any other type of program would require a change in the Essentials. The committee insisted that acceleration be achieved through shortening the time and not through reduction of course content.

It was the opinion of the Advisory Committee on Education that the civilian schools would not be in a position to assume responsibility for that part of the program which was not directly under their own supervision. In other words, approval had to be extended to the institution where the major portion of the training was to be carried out. In this instance, then, the Army would have to assume responsibility for the training if they conducted the 54-week course. It was the general feeling of the committee that the Army would be able to sponsor this course in occupational therapy utilizing the administrative facilities of the Medical Field Service School and selected Army general hospitals.

The Advisory Committee on Education, together with Dr. Miland E. Knapp, a member of the Council and Dr. Fritjof H. Arestad, associate secretary of the Council, proposed a substitute program in May 1951.

[14] Earl C. Elkins, M.D., Donald L. Rose, M.D., and Sedgwick Mead, M.D.

This program projected a total of 46 semester hours plus 36 weeks of clinical training, as follows: [15]

	Semester hours
Educational prerequisites, college degree including—	
Psychology	4
Sociology	3
Manual or creative arts or both	9
Electives	2
Total	18
Theoretical instruction (in approved civilian occupational therapy schools):	
Biologic sciences (anatomy, physiology, kinesiology)	14
Social Sciences (individual readjustment; social and educational agencies)	1
Theory and technique of occupational therapy	6
Technical instruction (in Army hospitals)	10
Clinical subjects (in Army hospitals):	
Clinical subjects (neurology, psychiatry, tuberculosis, orthopedics, medical)	7
Theory of occupational therapy as related to clinical subjects	8
Total	46
	Weeks
Clinical training (in Army hospitals)	36

Inasmuch as the Advisory Committee on Education's plan was not considered entirely suitable by members of the Committee on Education nor the Surgeon General's Office, Dr. Arestad requested that a meeting of representatives of all groups concerned be held on 6 June 1951 in Philadelphia, Pa., in order that he might be fully aware of all opinions before presenting the courses to the Council for action at their meeting on 8 June. Organizations represented at the meeting were the American Medical Association, the American Occupational Therapy Association, the Philadelphia School of Occupational Therapy, and the Surgeon General's Office.[16]

At this meeting, Colonel Robinson was asked to indicate the reaction of the Surgeon General's Office to the counter proposal from the Advisory Committee on Education. She pointed out that the program was too long and did not represent any acceleration which was the foremost objective of the original plan. She indicated that the Army was still interested in conducting the 54-week course, that it was interested in the possibility of establishing its own training course for occupational therapists within the Army, and that it was further interested in continuing to take clinical affiliates from the accredited civilian schools.

[15] Letter, F. H. Arestad, M.D., Associate Secretary, Council on Medical Education and Hospitals, American Medical Association, to Miss Helen S. Willard, O.T.R., American Occupational Therapy Association, 25 May 1951.

[16] The representatives were: *American Medical Association*—Dr. Fritjof H. Arestad, Associate Secretary, Council on Medical Education and Hospitals, and Dr. George M. Piersal, Director of Physical Medicine, Graduate Hospital, Philadelphia, Pa.; *American Occupational Therapy Association*—Miss Helen S. Willard, Chairman, Committee on Education, and Miss Wilma L. West, Executive Director; *Philadelphia School of Occupational Therapy*—Miss Clare S. Spackman, Assistant Director, and Miss Eleanor Kyle, Administrative Assistant; *University of Pennsylvania*—Dr. Wesley G. Hutchinson, Dean, School of Auxiliary Medical Services; *Surgeon General's Office*—Lt. Col. Ruth A. Robinson, Chief, Occupational Therapy Section, Physical Medicine Consultants Division.

The objections of the Army to the course were—

1. There were no basic biologic sciences in the prerequisites.

2. There was an unproportionate emphasis in the biologic sciences in the course, itself, and no provision was made for abnormal psychology or psychiatry.

3. The order of presentation of theory and clinical subjects as outlined had to be reversed. (In other words, theory of occupational therapy should follow clinical subject presentation. Without the clinical material for background information, theory lectures would lose their meaning.)

4. It was thought to be impossible to present 25 semester hours of clinical subject material, occupational therapy theory, and technical instruction in Army hospitals prior to the 36-week clinical training period.

The proposed 54-week course was not approved by the Council of the American Medical Association; therefore, representatives from the Surgeon General's Office (Education and Training Division and the Chief, Physical Medicine Consultants Division) met with members of the Council for further planning. The proposal which emanated from this group was that the Army should establish an 84-week occupational therapy course at the Medical Field Service School. As the length of this course negated its primary purpose of acceleration, after further discussion with the American Medical Association, it was agreed to reduce the 84-week course to 70 weeks: 34 weeks of didactic instruction at the Medical Field Service School, to be followed by 36 weeks of clinical affiliation in selected Army hospitals.[17]

Establishment of Course

The American Occupational Therapy Association had previously stated that it would have no objection to the Army establishing its own curriculum since the American Medical Association approval of the course outline had already been secured,[18] approval by the pertinent divisions in the Surgeon General's Office and subsequent final approval by the Department of the Army were all that remained to be obtained. Final approval was received early in 1952.[19] The first class of the Army Occupational Therapy Course (8–0–32) was scheduled for October 1952.

Medical Field Service School

Many courses for Army Medical Service personnel are given at the Medical Field Service School. The environment, although military, resembles that of any college or university campus. Students are enrolled

[17] Semiannual Report, Occupational Therapy Section, Physical Medicine Consultants Division, July–December 1951.

[18] (1) Report of Meeting on Accelerated Occupational Therapy Courses, 6 June 1951, Philadelphia, Pa. (2) It is a policy of the American Medical Association Council on Medical Education and Hospitals to withhold final approval of a course until the first class has been graduated. Its approval for the Army course was received in 1954.

[19] Special Regulations No. 605–60–52, 5 Mar. 1962.

in classes ranging from basic military and medical orientation to graduate study in hospital administration.

The setting was particularly suitable for the young occupational therapy officers for here they had the advantage of early orientation to military tradition and procedures while in the process of obtaining the knowledge essential to the practice of their chosen profession. If one had simultaneously observed a civilian occupational therapy course and the Army one, other than the uniforms worn by the military during class hours, the only basic difference that would have been apparent was that the Army students were required to stand military formation before their first classes in the mornings and afternoons. At these formations, announcements were made and necessary information was communicated to the students. One member of the class was the student adjutant and as such was the leader and spokesman for her group. As a rule, the Medical Field Service School band provided music for the short period of marching which followed the formation. The students grew proficient in marching and drill maneuvers and it was never long before keen competition would exist between the occupational and physical therapy students as to which group performed intricate drill maneuvers more precisely. It must be admitted that for the majority of the 3-year period that the two courses were coexistent, the physical therapists consistently outperformed the occupational therapists in drill techniques.

Selection of Students

Students for the Army Occupational Therapy Course were selected in the Surgeon General's Office by a board of officers appointed for that purpose. Information available to the board for their guidance included the transcript of credits, autobiographical sketch, references from college or university personnel, character references, the Army application, and, in some instances, correspondence from the Army area procurement officers.

The prerequisites included:

1. The general criteria for appointment as a Reserve officer, Women's Medical Specialist Corps.

2. Baccalaureate degree from a college or university acceptable to the Surgeon General's Office, with 15 semester hours of psychology and science or sociology or both.

3. Aptitude as a teacher, above average degree of manual dexterity, and a demonstrated interest and ability in the manual and creative arts.

Selections were made in the spring and students were assigned in late summer to the Medical Field Service School for basic training, followed by the academic phase of the course. The students signed a 3-year service commitment which included the entire educational program. Students could be removed from the course because of lack of interest, academic failure, or for disciplinary reasons.

Selection of Faculty

The occupational therapy officer faculty was selected on the basis of aptitude for teaching, knowledge, and experience in specialized areas, and experience with students either in the affiliation program or in the academic phase. Members of the faculty during the entire period of the course were:

1st Lt. Virginia Coffin	1951–53
Capt. (later Maj.) Maryelle Dodds	1951–54
Capt. Wilma L. West, Director	1951–53
1st Lt. (later Capt.) Lottie V. Blanton	1951–53
1st Lt. (later Capt.) Eileen O'Brien	1952–55
Maj. (later Lt. Col.) Myra L. McDaniel, Director	1953–55
1st Lt. (later Capt.) Barbara M. Knickerbocker	1954–55

The enlisted members of the faculty were selected on the basis of their aptitude for teaching, personal qualifications, and knowledge and experience in the workshop activities. A minimum of three were assigned.

The occupational therapists and enlisted instructors taught all craft and workshop activity classes. The occupational therapists included in their discussions and demonstrations the adaptations of activities for patient treatment and the analysis of activities for interest, exercise, and motion potential. It was believed that this approach was more meaningful and learning-centered for the student than the procedures followed in some of the civilian schools where activities were taught by skilled craftsmen and the analysis and adaptation taught by the occupational therapist in a separate class. Each craft and workshop activity in the Army course was planned to include a multitude of procedures in order to decrease the number of projects made in the limited time available (fig. 137).

Instructors for the medical and military subjects were drawn from the staff at the Medical Field Service School (Brig. Gen. James P. Cooney, MC, Commandant) and Brooke General Hospital (Brig. Gen. Martin E. Griffin, MC, Commanding General) (fig. 138). This arrangement was ideal in many respects and created increased interest in topic presentations as many of the medical officers had recent case material or current experiences with patients to which they could refer in their lecture series. Case presentations were used in selected lectures whenever possible.

In order to provide space for the workshop activity classes, a messhall was converted into an occupational therapy laboratory. Lathes, drill presses, power saws, looms, workbenches, soldering outfits, and shadow cupboards for small tools were installed in the dining area. The steamtables were boxed over with plywood to provide additional flat working surfaces. Cupboards for storage of dishes were ideal for storage of yarn and warp. The kitchen became the ceramic workshop



FIGURE 137—Woodworking project, Army Occupational Therapy Course. Specifically planned to include not only the usual woodworking construction and finishing processes but also woodcarving, lathe work, and doweling.

once the stove and ovens were covered and the kiln and potter's wheels were installed (fig. 139). Water and sink facilities, usually so sparse in occupational therapy clinics, were in abundant supply. Printing was the only activity not provided and experience in this medium was obtained in the hospital affiliation.

Curriculum

In general, the Army Occupational Therapy Course content remained relatively stable during its 3 years' existence. Changes made are shown in table 22, and also noted are the subjects taken with the physical therapy students.

Following the 34-week didactic phase, the students were assigned to

TABLE 22—*Curriculum, Army Occupational Therapy Course, Medical Field Service School, Fort Sam Houston, Tex., 1952–54*

[Didactic phase: 34 weeks]

Subject	Hours		
	Projected, May 1952	Class 1, 1952 (44-hour week)	Class 3, 1954 (40-hour week)
Medical:			
Anatomy [1]	78	93	150
Functional anatomy	0	0	75
Kinesiology	90	90	0
Medical lectures [1]	72	72	0
Medical terminology	0	0	3
Neuroanatomy [2]	40	25	0
Neurology [2]	18	18	0
Orientation to:			
Medical conditions	0	0	19
Neurological conditions	0	0	30
Orthopedic conditions [1]	0	0	30
Pediatric conditions	0	0	16
Surgical conditions [1]	0	0	15
Orthopedics [1]	36	36	0
Pathology [1]	18	18	30
Physical medicine and rehabilitation [1]	0	0	38
Physiology [1]	54	54	54
Psychiatry	36	36	54
Psychology	54	[3]54	5
Psychology of ill and handicapped	0	0	16
Rehabilitation in occupational therapy	54	54	31
Theory of occupational therapy:			
General medicine and surgery	36	36	36
Neuropsychiatry	36	36	36
Physical disabilities	36	36	36
Other:			
Administration of occupational therapy	4	4	4
Clinical observation and demonstration	0	0	24
Ethics	2	2	2
History of occupational therapy	2	2	0
Introduction to occupational therapy	0	0	7
Journal club	20	20	20
Nursing service in the hospital [1]	2	2	2
Remedial reading	30	31	0
Selected nursing techniques [1]	6	8	6
Workshop activities:			
Ceramics	72	72	60
Design	0	0	20
General crafts	180	131	53
Leatherwork	0	0	38
Metalwork and jewelry	72	72	76
Weaving	72	72	80
Woodwork and plastics	144	120	110
Military subjects [4]	0	0	0
Nonacademic subjects	232	302	184
Total	1,496	1,496	1,360

[1] Subject taken with physical therapy students.
[2] Included in anatomy in 1953 and 1954.
[3] Included basic and abnormal psychology and psychology of the ill and handicapped.
[4] Twenty-seven hours of instruction in military subjects were added to the curriculum in fiscal year 1953 in lieu of nonattendance at basic orientation course.



FIGURE 138—Instruction in the Army Occupational Therapy Course, Medical Field Service School, Fort Sam Houston, Tex., 1953. (Top) Lt. Col. John H. Kuitert, MC, Director, Department of Physical Medicine, Medical Field Service School, assists students in their study of neurology. (Bottom) Capt. Wilma L. West, director of the course, is assisted by a student in demonstration of supportive apparatus used in treatment of muscle weakness. (U.S. Army photographs.)

selected Army general hospitals to participate in the 36-week clinical affiliation phase. Upon successful completion of this program, certificates

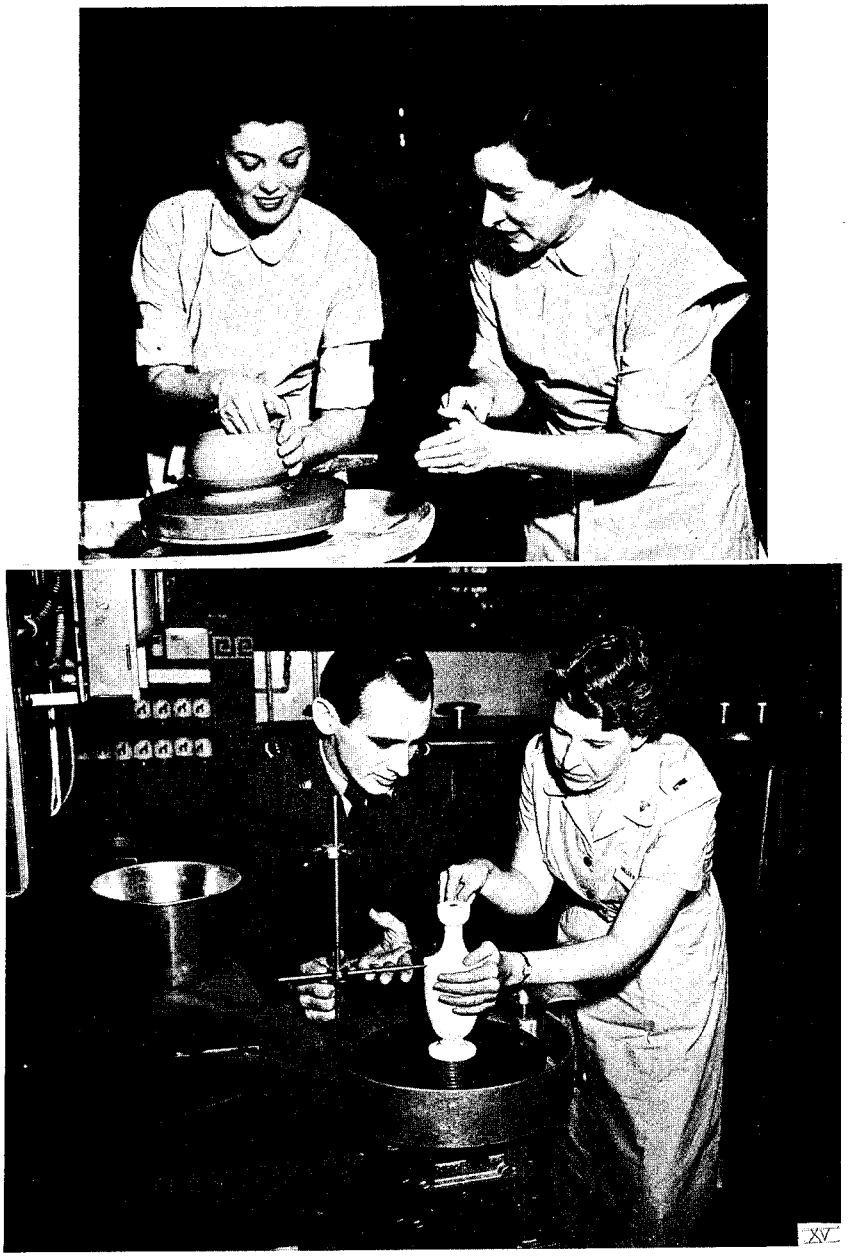


FIGURE 139—Ceramic workshop, Army Occupational Therapy Course, Medical Field Service School, Fort Sam Houston, Tex. (Top) Capt. Maryelle Dodds instructs 2d Lt. Rosemary McEachern in forming a bowl on the potter's wheel. (Bottom) Pvt. Robert Desjardin shows 2d Lt. Patricia Miller how to check for uniform contour without using a template. (U.S. Army photographs.)

of graduation from the Army Occupational Therapy Course were awarded by the Surgeon General's Office.

Living Conditions

The students received the pay and allowances of second lieutenants and while attending the course at the Medical Field Service School lived in quarters adjacent to Brooke General Hospital. The quarters varied greatly depending on what was available when the students reported for duty. Each student had a private room whether it was in dormitory- or apartment-type housing. There was no regimentation in their living other than that imposed by their neighbors.

Recreational facilities were abundant and were conveniently located on the post of Fort Sam Houston. Each week the students were required to participate in some form of physical training and it seemed that swimming, golf, and tennis were the most popular activities.

Discontinuance of Course

The Army course was discontinued following completion of the didactic phase in 1955. The responsibility for the clinical affiliation program being vested in selected Army general hospitals, the discontinuance of the course caused no disruption of the affiliation schedules for class 3.

The Army Occupational Therapy Course was discontinued because it was believed in the Surgeon General's Office that the military clinical affiliation program was not only a more productive procurement source but also a much more economical program. The economical aspect was determined primarily on the basis of the cost of the course as related to the number of Army course graduates who indicated they might remain in the Army program following completion of the required 3-year tour of duty. The determination to discontinue the course was made in November 1954. The 3-year obligated tour of duty for the first class did not terminate until November 1955, so there was no experience factor on which to rely, thus the judgment had to be partially based on opinions expressed by the hospital staffs as to the intentions of these Army course graduates.

The Surgeon General's Office had originally planned to put the course on a standby basis; General Cooney (fig. 140), however, did not concur in this action. He believed that the standby basis was neither feasible nor practical to contemplate over an extended period of time. This standby basis meant that the course could be reactivated in a short period of time and implied that all equipment and supplies would have to be either retained in storage or procured on short notice. Also a staff of instructors would have to be reassembled.

Evaluation of Course

Although the course was conducted over too short a period to permit

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FIGURE 140—Brig. Gen. James P. Cooney, Commandant, Medical Field Service School, Fort Sam Houston, Tex., observes a demonstration of shaping a footstool leg on a wood lathe. (U.S. Army photograph.)

reliable statistical analysis and evaluation, the course can be evaluated in other respects. Five of the Army course graduates were still on active duty as of 31 December 1960: Two were members of class 1: Capt. Nancy McKnight and Capt. Anna L. Rodriquez; one of class 2: Capt. Jean Pennucci; and two of class 3: Capt. Gloria Parrella and Capt. Danessa Wise.

All 40 students who completed the course qualified for the examination for registration with the American Occupational Therapy Association. 1st Lt. Patricia Miller, a member of class 1 who took the examination in 1954 with students representative of all of the occupational therapy curriculums throughout the country, was one of five students completing the examination with honors.

It might be believed that inbreeding of ideas and concepts would be fostered as a result of the all-military environment in which the Army course students lived and worked in both their training and staff assignments. This kind of educational and learning stagnation requires a fixed staff and a paucity of participation by the staff in other than military educational opportunities. Such is not the case in Army occupational therapy. The maximum length of tours limited the assignment

period at the Medical Field Service School and thus afforded continuous change in staff personnel. The scope of educational activities participated in by Army occupational therapists in specialized interest areas as well as in graduate study expanded each year. The policy of assigning staff who have had specialized or graduate education to the teaching hospitals where their increased knowledge and experience can be most effectively used provided a vitalizing influence in the Army programs.

The successful conduct of this course proved, as did the War Emergency Course, that acceleration of an educational program can be accomplished without sacrifice of course content or student achievement. Granted that these were selected groups of participants, these courses present an acceptable solution to the problem of personnel needs in time of emergency. The prime factor in successful production of qualified personnel to meet mobilization needs is early initiation of the training program. Classes could be run on a staggered schedule basis to increase output.

One element of administration in the course limited its maximum effectiveness. This was lack of communication between the school and the selected Army hospitals and between the selected Army hospitals themselves. Personal communication could, of course, be carried on, but this had no official connotation. What was needed and had been recommended,[20] but disapproved,[21] was an official meeting of the occupational therapy clinical directors from the hospitals with the school personnel. A mutual understanding of problems and their solutions would have been precipitated and the program itself would have been strengthened by the interchange of new ideas.

OCCUPATIONAL THERAPY TECHNICIANS COURSE

The shortage of occupational therapists necessitated scrutiny of every means by which their services could be most effectively extended. To this end, planning a course for occupational therapy technicians was begun in 1948. The course (8–E–23) was approved in 1950 with a quota established of 20 enlisted students per class. Class 1 began its training in May 1951 with an enrollment of seven males and one female.

The purpose of the course was to train enlisted personnel to assist occupational therapists in the treatment of patients.[22] Previous to this time, male enlisted personnel had received only on-the-job training in occupational therapy. As could be expected, this training had varied in scope and depth depending upon the individual hospital clinic in which it was given.

[20] Letter, Headquarters, Medical Field Service School, Fort Sam Houston, Tex., to The Surgeon General, 11 May 1953, subject: Inspection of Occupational Therapy Course.

[21] Disapproved on grounds that other than Army course students were involved with the clinical affiliation program; therefore, liaison between all curriculums and clinical training centers would be the responsibility of the Chief, Occupational Therapist Section, Surgeon General's Office.

[22] A course similar to this one, given during World War II to enlisted members of the Women's Army Corps, has been discussed in chapter VI, pp. 180–182.

It was anticipated that the formal course training would more adequately prepare the technician to assist the occupational therapist in (1) instruction of patients in workshop activities, (2) fabrication of assistive devices, (3) adaptation of equipment, and (4) nonprofessional administrative procedures.

Selection of Faculty

The faculty for the enlisted course was drawn from the officer and enlisted staff at the Medical Field Service School. 1st Lt. Virginia Coffin was the only occupational therapist assigned to the school for the beginning classes. In November 1951, she was assisted by Capt. Wilma L. West and Capt. Maryelle Dodds who were assigned to prepare the program of instruction and lesson plans for the Army Occupational Therapy Course.[23]

Selection of Students

The prerequisites for the Army Occupational Therapy Course included: (1) Standard score of 90 or higher on aptitude area III, (2) grade E–5 (sergeant) or below, (3) no record of emotional instability, and (4) qualification as a medical corpsman (5657) or medical aidman (3666).

Application for the course was made through organizational channels to the Adjutant General's Office where selection was made in accordance with the quota established for the course. Information concerning the selected applicants was then forwarded to the Medical Field Service School for screening, following which the Adjutant General's Office issued appropriate assignment and travel instructions.

In fiscal year 1951, Army Field Forces estimated that there would be a requirement for 183 additional occupational therapy technicians during fiscal year 1952. The Education and Training Division, Surgeon General's Office, to meet the need, proposed that a class of 20 student occupational therapy technicians be instituted in August 1951 and each month thereafter. Inasmuch as there was an insufficient occupational therapy faculty at the Medical Field Service School, such a schedule could not be initiated. Six classes, however, were scheduled for calendar year 1952.

Approximately 300 enlisted technicians were graduated from the occupational therapy course during the period 1951 to 1954.

Curriculum

The 12-week Occupational Therapy Technicians Course was divided into two phases: The 8-week didactic phase which was given at the Medical Field Service School and the 4-week clinical practice phase

[23] The formulation and use of lesson plans are discussed in chapter XIV, p. 464, in relation to the Army Physical Therapy Course.

which was given at selected Army hospitals. The curriculum for the didactic phase, 1951–54, follows:

Subject	*Hours*
Anatomy, physiology, and kinesiology	[1]56
Orientation to medical and surgical conditions	[1]28
Psychology	[1] 8
Neuropsychiatry	26
Introduction to physical medicine	[1] 6
Physical medicine records	[1] 2
Introduction to occupational therapy	2
Administration and organization of the occupational therapy section	4
Occupational therapy for—	
Neuropsychiatric patients	8
Physical disability patients	4
Tuberculous patients	2
General medical and surgical patients	6
Woodworking	20
Plastics	10
Printing	[2]10
Leatherwork	10
Jewelry and metalwork	14
Minor crafts	17
Care of tools and equipment	4
Use of electrical equipment	4
Observation in occupational therapy clinic	4
Military subjects	64
Nonacademic subjects	43
Total	352

[1] Courses taken with physical therapy and physical reconditioning students when these courses were scheduled concurrently.

[2] Given at Brooke General Hospital. No printing equipment was authorized for occupational therapy at the Medical Field Service School.

In the second phase, the enlisted technicians were scheduled for 130 hours of clinical practice, 10 hours of observation, and 20 hours of student conferences. Effort was made to distribute these hours between the four major areas of occupational therapy practice to familiarize the technician with patient care problems he might encounter on his permanent-duty assignment.

Malassignments [24]

One of the most serious problems that arose concerning school-trained enlisted technicians was malassignment. In many instances, they were not utilized in the specialty for which they had been trained. This was of particular concern to the Surgeon General's Office as it appeared to be a waste of funds, personnel, and time to train technicians for specialized assignments and then to learn that they were assigned by the

[24] Information for this section was obtained from the following sources: (1) Semiannual Report, Occupational Therapist Section, July–December 1952. (2) Semiannual Report, Physical Medicine Consultants Division, July–December 1951. (3) Semiannual Report, Physical Reconditioning Section, Physical Medicine Consultants Division, July–December 1951. (4) Personal knowledge of the author.

Adjutant General's Office to duty unrelated to their training or interest.

The Enlisted Section, Military Personnel Division, Surgeon General's Office, cooperated in providing information they had available on assignments. Remedial action could be taken if occupational therapy technicians were malassigned in Class II hospitals, as these hospitals are directly under the supervision of The Surgeon General, but they had limited influence on assignments of these technicians in Army areas or oversea commands.

As word spread about the possibility of duty assignment to other than occupational therapy, the morale and interest of the technicians were seriously affected. They seemed to feel that there was no advantage in making any effort to excel since even the top men and women in the classes had been malassigned as frequently as had those in the lower rankings.[25]

As the stress of the Korean War lessened, malassignment became less of a problem. To alleviate this problem in a future crisis, before the selection of candidates, the parent organization should reassess the needs, spaces, and authorizations within the command. The candidates' potential for immediate oversea assignment upon completion of training should also be carefully considered.

Discontinuance of Course

The Occupational Therapy Technicians Course was discontinued in June 1955. There were several reasons for its discontinuance: (1) There was a decreasing need for the course to be given on an annual basis, since there appeared to be a sufficient number of enlisted technicians already trained to meet any anticipated immediate requirement. (2) It was economically impractical to continue the course inasmuch as classes would be scheduled only as an anticipated need arose. If the enlisted course was not terminated at the same time as the officer occupational therapy course, this would necessitate keeping at least one officer and an enlisted technician on permanent assignment at the Medical Field Service School or assigning them on a temporary-duty basis for the scheduled course period. It also meant that the enlisted technicians work activity laboratory would have to be maintained. (3) It was believed that an on-the-job training program, similar in scope and depth to that given at the school, could be established in one or more Army general hospitals if the need arose.

ON-THE-JOB TRAINING PROGRAMS FOR ENLISTED TECHNICIANS

By 1960, it became apparent that a formal on-the-job training program was needed for the enlisted occupational therapy specialist to assure that

[25] Malassignment affected all technician groups at the Medical Field Service School; it was not limited to the occupational therapy technicians.

he was technically qualified for his military occupational specialty designation—923.1 (fig. 141). Because of the shortage of qualified enlisted assistants, untrained personnel were being assigned to occupational therapy clinics and were being given the occupational therapy specialist military designation on the basis of the position assignment.

A number of clinics, particularly in the station hospitals where just one occupational therapist was assigned, were unable to secure even untrained personnel for extended periods of time. In many of these instances, the patients were helpful in keeping the clinics clean and neat, but the lack of a qualified assistant posed a quandary for the occupational therapists insofar as they were concerned with attending ward rounds, treating bed patients, starting new patients on their treatment programs, preparing or adapting equipment for patient use, and attending to the many nonprofessional duties associated with clinic routine.

By the fall of 1960, on-the-job training programs for enlisted occupational therapy specialists had been approved by the Department of the Army and were established at Letterman General Hospital, San Francisco, Calif., and at Valley Forge General Hospital.[26] The 3-month courses were to be given several times a year, if indicated, and were generally limited to four students at each hospital in order that a maximum amount of supervised clinical experience could be accomplished.

A rough estimate of the division of time afforded to the different areas of training reveals 4 percent to orientation (hospital and department); 5 percent to anatomy, physiology, and kinesiology; 3 percent to orientation to the three major areas of occupational therapy practice; 14 percent to skills instruction; 2 percent to safety measures, maintenance, requisitioning of supplies and equipment, and reports; and 70 percent to clinical observation and application.

In contrast to the previous enlisted course in which all didactic material was taught first at the Medical Field Service School and the clinical experience was obtained last in a hospital setting, in the on-the-job training program, clinical observation and application were consistently offered throughout the entire training period.

Prerequisites for the course included a grade of E–4 (specialist) or below and completion of a basic medical training course. Priority in selection was given to former manual training instructors, personnel with an educational background in social work, and to Regular Army personnel. Many of the candidates entered the course directly upon completion of their basic medical training program.

EXTENSION COURSES FOR OFFICERS

Extension courses, available through the Medical Field Service School, provide nonresident military educational opportunities for both Reg-

[26] On-the-job training courses were also established for the physical reconditioning specialists at these hospitals.



FIGURE 141—On-the-job training for enlisted occupational therapy technicians, Walter Reed General Hospital, Washington, D.C. (Top) 1st Lt. Peter J. Couchman, AMSC, gives instruction in setting type and using a composing stick. (Bottom) Lieutenant Couchman shows enlisted technicians and patient how to change a blade in a table saw.

ular Army and Army Reserve personnel. For the Army officer on active duty, they provide a means to increase his knowledge of military activity and function and to acquire knowledge of managerial and related subjects which will aid him to perform his duties more effectively and efficiently. For the Reserve officer not on active duty, these courses provide a means of obtaining current information while at the same time earning point credits for retirement purposes.

The extension courses are designed to furnish current thought and doctrine on Army function in general with particular emphasis on the activities of the Army Medical Service. They offer the student the breadth of subject coverage found in the same courses taught in the resident program at the Medical Field Service School.

Four extension courses specific to occupational therapy were prepared in 1952 by Captain West from manuscripts prepared by selected chiefs of Army occupational therapy programs. The courses included material on the establishment of occupational therapy in oversea hospitals, organization and administration, and on-the-job training of enlisted personnel.[27]

Periodic revision of these extension courses was not possible because no occupational therapist was assigned to the Medical Field Service School. Some of the material became obsolete, and these courses, therefore, were suspended in 1960.[28] Occupational therapists, however, could take many of the Medical Field Service School subcourses for which they were qualified, so suspension of the specialty subcourses did not preclude their participation in extension course activity.

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[27] The extension courses were, as follows:
Subcourse No. 73—Army Occupational Therapy Section.
Subcourse No. 75—On-the-job Training of Enlisted Occupational Therapy Personnel.
Subcourse No. 77—Setting Up an Occupational Therapy Section in an Oversea Fixed Hospital.
Subcourse No. 82—Administration for the Chief of the Occupational Therapy Section of an Army Hospital.

[28] In 1951, Lt. Col. Helen R. Sheehan was assigned to the Medical Field Service School and, in addition to her other duties, prepared new extension courses for use by Army Medical Specialist Corps officers.

CHAPTER XVI

Professional Services and Activities of Dietitians April 1947 to January 1961

Lieutenant Colonel Helen M. Davis, USA (Ret.)

Hospital food service has undergone revolutionary change since World War II with an attendant gradual and steady increase in the scope of responsibility of the Army dietitian. The food service program established in 1943 [1] was revived in February 1947.[2] Emphasis placed by this program upon the improvement of food service throughout the Army and the attainment of Regular Army status by dietitians gave impetus to the reorganization of hospital food service.

The Quartermaster General was made responsible for the Army food service program. Army commanders were delegated the responsibility for many activities of Class II installations and reported directly to the War Department concerning these.[3] The food service program in the general hospitals was included among these activities. The restriction of The Surgeon General's authority caused concern and he requested that food service in general hospitals be made the responsibility of his office.

The Surgeon General's request was denied. By 1961, however, he had the responsibility for staff and technical supervision over the organization and operation of patient messes and the formulation of requirements for these messes. He was also responsible for the formulation of training doctrines and policies peculiar to patient feeding.[4]

Since food service played such a vital part in patient care, the Medical Department always had a prime interest in the proper control over it. To accomplish this, regulations were published which defined responsibilities and duties of food service personnel and established administrative procedures. The training of military food service personnel was the responsibility of The Quartermaster General and schools were operated for that purpose. Further training of enlisted food service personnel assigned to Army hospitals, as well as the training of civilian employees, was the responsibility of the head dietitian (later designated chief dietitian).[5] A 1946 report of Army subsistence activities named Brooke General Hospital, Fort Sam Houston, Tex., and Fitzsimons Gen-

[1] Risch, Erna, and Kieffer, Chester L.: The Quartermaster Corps: Organization, Supply, and Services. Volume II. United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1955, p. 69.
[2] War Department Circular No. 50, 21 Feb. 1947.
[3] War Department Circular No. 47, 21 Feb. 1947.
[4] Army Regulations No. 30-11, 22 Mar. 1960.
[5] Circular No. 3, Office of The Surgeon General, 3 June 1947.

eral Hospital, Denver, Colo., as the exceptional messing installations of all the field and hospital messes visited.[6] The investigating committee stated that these might well serve as models for food service activities in future planning.

Early in 1946, the Medical Department began studies of the food service operation of general hospitals with the intent to extend the investigation to station hospitals.[7] A survey team consisting of representatives of the Medical Department, Corps of Engineers, and the Quartermaster Corps visited hospitals and with the assistance of local personnel drew up plans for the renovation and re-equipping of mess facilities. Lack of funds and limitations placed upon construction hampered progress in this undertaking.

REORGANIZATION

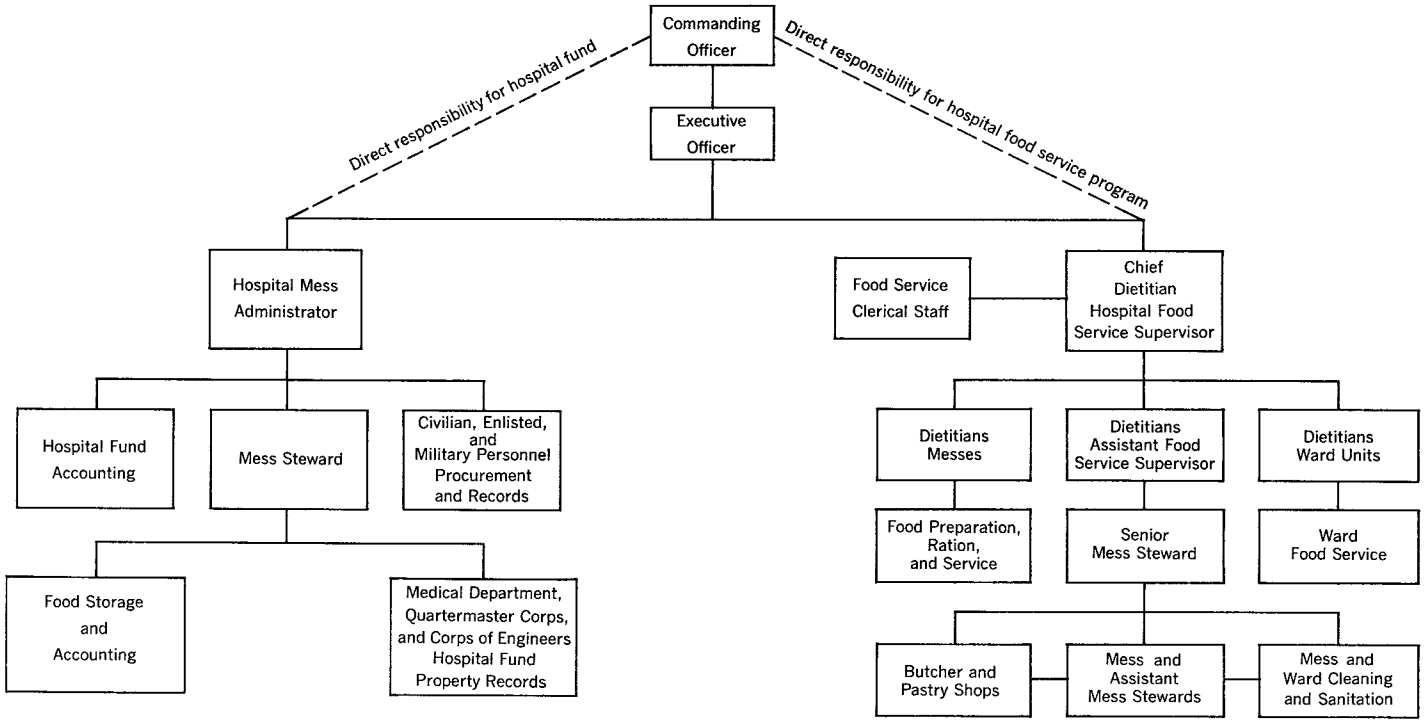
To implement the food service program at general hospitals, The Surgeon General directed a complete reorganization of the messes in these installations in June 1947.[8] The chief dietitian (hospital food service supervisor) was made directly responsible to the commanding officer for the supervision and direction of the hospital food service program (chart 10). The titles of mess officer and director of dietetics were abolished, and for the first time, a hospital mess administrator was designated. This Medical Administrative Corps officer was directly responsible to the commanding officer for the proper administration of the hospital fund, the procurement of supplies, equipment, and personnel, central food storage, accountability for property, and the maintenance of pertinent records. Several general hospitals, following an earlier recommendation of The Surgeon General,[9] had been functioning under this organizational concept. This achievement was due to the spearhead work and support of Col. Harry A. Bishop, MC, Hospital Division, Surgeon General's Office, and to the progressive leadership of Maj. (later Lt. Col.) Helen C. Burns,[10] Chief, Dietitian Consultants Division. Credit, too, was due to the work of Maj. George R. Allan, MSC, also of the Hospital Division, a staunch champion and constructive critic of the dietitian.

To expedite the implementation of the new organization, a 6-day training symposium for all chief dietitans at general hospitals was held in Philadelphia, Pa.[11] Capt. (later Lt. Col.) Katharine E. Manchester, Surgeon General's Office, conducted the meeting. Emphasis was placed upon the establishment and maintenance of adequate training programs and the standardization of forms which could be used in all Army hospitals.

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[6] Extracts, letter, John L. Hennessy and eight committee members, to Secretary of War, May 1946, subject: A Report of Army Food Service Activities.
[7] Hospital Food Service Program, Bull. U.S. Army M. Dept. 8 (No. 9): 756–758, September 1948.
[8] Circular No. 70, Office of The Surgeon General, 3 June 1947.
[9] See footnote 5, p. 511.
[10] Later Maj. Helen B. Gearin, WMSC.
[11] Training Symposium for Army Dietitians, Philadelphia, Pa., 13–18 Oct. 1947.

CHART 10—*Hospital mess organization, 1947*



This period might well be considered a period of transition. It provided opportunity for managerial development of dietitians as Regular Army officers. Dietitians qualified by training and experience were ready to assume the new duties. The 136 dietitians who attended the Advanced Course in Mess Administration at the Medical Field Service School, Fort Sam Houston, Tex., in 1946 and 1947 had received valuable training in hospital food service management.

The changed organization was not entirely satisfactory. Conflict was inevitable with the dual control. Effectiveness was dependent upon full cooperation and understanding between the hospital mess administrator and the chief dietitian and, unfortunately, these did not always exist. Some hospital commanders were reluctant to accept the dietitian in her new role. In giving the dietitian added responsibility some authority was taken from the mess administrator. One recommendation is indicative of the apprehension regarding the future of the mess officer (mess administrator): "In the manner of assignment, it should be borne in mind that no male officer with the MOS 4110 (Mess Officer) should be assigned to a general hospital, since the duties of Hospital Mess Administrator do not utilize this mess experience. The result is that it may produce a dissatisfied, well qualified Mess Officer who feels stultified in his efforts to properly utilize his abilities. The Hospital Mess Administrator should be considered a routine administrative position to be occupied by an officer having an MOS 2121."

The 1947 regulation prescribing the food service program had redesignated titles and established a military occupational specialty designation for mess personnel. The duty title Food Service Supervisor, MOS 4114 (later redesignated Food Adviser),[12] was established. Since it appeared that the duties of the hospital food service supervisor were similar to those outlined in the regulation, authorization was given by The Surgeon General to adjust the personnel records of chief dietitians to include this classification.[13]

Later, it appeared that only graduates of food service courses prescribed by The Quartermaster General would be awarded the military occupational specialty designation 4114. When The Surgeon General suggested that the requirements for this specialty be modified to include the chief dietitian who functioned as the hospital food service supervisor, The Quartermaster General did not agree on the basis that it would lead to a variance in the training of food service supervisors and a lack of standardization in operating procedures and inspections. It was further pointed out that the dietitians lacked 142 hours in military food service training. When the Advanced Food Service Course became a requirement for the award of MOS 4114, the deficiencies in military food service training would be even greater.

In order to determine whether the 9-month Advanced Food Service Course, taught at Camp Lee, Va., would be of value to dietitians in the

[12] Special Regulations No. 30-11-1, 31 Jan. 1952.
[13] See footnote 8, p. 512.

Medical Department, Capt. (later Col., USAF) Miriam E. Perry, Capt. Evelyn M. Girard, and Capt. (later Maj.) Nancy L. Huston were assigned to this course in September 1947. These three dietitians successfully completed the course and were awarded the MOS 4114. Their experience showed that many subjects were basic to the undergraduate education of the dietitian. As a result, it was not considered to be the best interest of the Army Medical Service to send other dietitians to this course. The Quartermaster General stood firm on the requirements for the award of MOS 4114. Except for the dietitians who had completed the Advanced Food Service Course, other Army dietitians were not, under existing regulations, eligible for MOS 4114.[14] Records of dietitians were adjusted to delete this military occupational specialty requirement.

The Commanding General, Camp Lee, Va., found it difficult to obtain officers qualified by education, background, and experience to instruct in the Advanced Food Service Course. There was also a need for qualified instructors for the Quartermaster Corps Subsistence Course, taught in Chicago, Ill. The Quartermaster General requested that two of the dietitians attending the Advanced Food Service Course be assigned as instructors upon their graduation. Captain Girard was assigned to the Advanced Food Service Course. In addition, she acted as liaison officer for the Quartermaster School and the Surgeon General's Office on all matters pertaining to hospital food service. She served in this capacity until October 1950. No assignment was made to the Quartermaster Corps Subsistence Course because of the shortage of dietitians.

MANAGEMENT RESEARCH AND DEVELOPMENT

Although reorganization in varying degrees was an accomplished fact, efforts continued for the improvement in standards of hospital food service. In May 1949, The Surgeon General established a hospital food service committee to develop standards, determine policies and procedures for hospital food service, and to prepare an appropriate and inclusive publication for their implementation.[15] This committee met at Fitzsimons General Hospital in late June 1949.

Army dietitians on the hospital food service committee were: Capt. Lydia L. Romersa, Medical Plans and Operations Division, Surgeon General's Office, Chairman; Maj. Myrtle Aldrich, Fitzsimons General Hospital; Capt. Gladys T. Edwards,[16] Percy Jones General Hospital, Battle Creek, Mich.; Capt. (later Maj.) Nannie R. Evans, U.S. Army Hospital, Fort Knox, Ky.; Captain Girard, Camp Lee, Va.; Major Perry, Brooke Army Medical Center, Fort Sam Houston, Tex.; and Capt. (later Maj.) Velma L. Richardson, Letterman General Hospital, San Francisco, Calif. Other members of this committee were: Capt. Mary

[14] War Department Circular No. 152, 13 June 1947.
[15] Manchester, Katharine E.: History of the Management Research Program as Pertained to Hospital Food Service, March 1952. [Official record.]
[16] Later Maj. Gladys T. Hook, AMSC.

C. Horak, Air Force dietitian stationed at Fairfield-Suisun Air Force Base, Calif.; and Major Allan, and Maj. Ersel E. Martin, MSC, representing the Medical Plans and Operations Division.

The committee's recommendations to The Surgeon General were to establish a new organizational structure for hospital food service, to establish a permanent committee to periodically review all policies and procedures for Army hospital food service, and to set a deadline of 31 August 1949 for the final draft of the publication. It was also recommended that the new organization, procedures, and forms be field tested at Valley Forge General Hospital, Phoenixville, Pa. This hospital was set up and served as a pilot installation to test the new organizational pattern for Class II hospitals.[17] Later, U.S. Army Hospital, Fort Meade, Md., was used as a test installation to determine if the organizational pattern, procedures, and forms developed for general hospitals would be applicable to station hospitals. The results were most favorable. A permanent committee was established to complete a draft of the required publication. This committee was terminated in September 1949 when the completed draft was given to Major Manchester, who was assigned to the Management Research Program of the Surgeon General's Office.

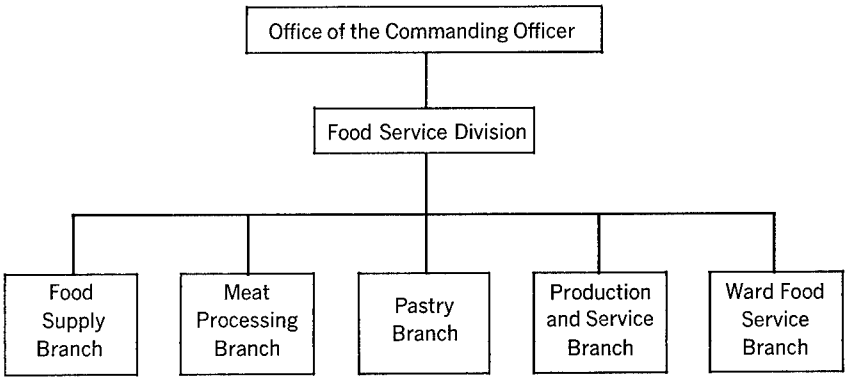
Before implementing the new organizational structure, policies, and procedures in all general hospitals, Walter Reed General Hospital, Washington, D.C., was selected in February 1950 as the second testing site. Dietitians in general hospitals were kept informed as to developments so that they could analyze their food service operations and would thereby be prepared to contribute to the total program. Ideas were gleaned, sent to hospitals for comment and, if sound, were accepted. Cooperation was easy to obtain for all dietitians felt a keen need for standard operating procedures and for forms to facilitate efficiency of operation. Every effort was made to utilize both military and civilian personnel in the positions for which they were best qualified. Training of individuals to meet their increased responsibilities was essential.

The management research team, consisting of administrative officers (management engineers), an Army nurse, and a dietitian visited all general hospitals by September 1950. Implementation of the new program at all general hospitals was made easier by the fact that the services and divisions throughout the hospitals were undergoing reorganization at the same time. Participation by a member of the Army Nurse Corps made the changes in the ward food service organization and procedures much more acceptable to the nurses in the hospitals.

The work at Valley Forge General Hospital was the nucleus from which the organizational pattern of all hospitals was developed. The first tangible result of the research effort was the publication in 1950 of a directive establishing the food service division (chart 11) in general hospitals.[18] This division was to be headed by a dietitian who was re-

[17] See footnote 15, p. 515.
[18] Circular No. 119, Office of The Surgeon General, 15 Sept. 1950.

CHART 11—*Food service division organization in general hospitals, 1950*



sponsible for all food service operations. This gave her all of the duties previously assigned to the hospital mess administrator with the exception of the custodianship of the hospital fund. This latter responsibility was assigned to the hospital treasurer. The position of hospital mess administrator was abolished. Dual control over hospital food service activities ceased to exist.

The functions of food service were classified under five branches: production and service, meat processing, pastry, ward food service, and food supply. Because of the dietetic internship, a training branch was added to the organizational structure of Walter Reed and Brooke General Hospitals. In 1955, the functions within the five branches were consolidated into three branches: food supply which included meat processing, production and service which included pastry preparation, and ward food service.[19] Fixed general hospitals at oversea areas were authorized to make use of such parts of the directive as were applicable.

The adoption of the hospital food service organization and functions was well underway in January 1951 when one hospital in each Army area and U.S. Army Hospital, Fort Belvoir, Va., were set up as pilot station hospitals. As these hospitals became operational according to the new organization, personnel (including dietitians) from hospitals within an Army area participated in a workshop and, in many instances, visited a pilot hospital to obtain information. The organization and functions of each branch was defined by regulation for Class I hospitals in January 1952.[20] Capt. (later Maj.) Elna Petersen, assigned to Valley Forge General Hospital in April 1951, supervised this program.[21]

Policies and procedures developed during the organizational research period were incorporated into a tentative procedural manual

[19] Army Regulations No. 40–22, 29 Apr. 1955.
[20] Special Regulations No. 40–610–5, 16 Jan. 1952.
[21] Major Petersen, as a member of The Surgeon General's team, represented the food service division at the hospital management conferences conducted by the Surgeon General's Office and Army Area headquarters.

which was published on 18 February 1952.[22] This manual served as a guide to general hospitals and authorized certain forms for use by the food service division. All information was made available to station hospitals. Individual hospitals proceeded with the reorganization as authorized locally. There was no official publication directing this action. Policies and procedures for all Army hospitals were established in September 1956.[23] The first directives were specific as to how food service was to be administered. Later, the philosophy of allowing hospital commanders more freedom in the control of their operation came into existence and continued throughout the period covered by this chapter. The dietitian, however, had gained a sound background in accounting procedures and food supply control and was prepared for management responsibilities.

Hospital commanders generally were receptive to the new organization which authorized the dietitian to be chief of the food service division. The efficiency reports for a few officers reflected some lack of acceptance. They were commended for their work only to have this praise negated in the numerical rating and by the statement of the commander's belief that only a male officer should be in charge of food service activities with supervision over enlisted personnel.[24] To some, lack of male supervision meant disaster. One headquarters' document credited the mess steward with contributing to the success of the change in organization of that command.[25] This document firmly stated that the director would have to be an outstanding person or else have a strong mess steward.

Reluctance to accept the dietitian in her new role usually changed to satisfaction. The firm background laid in bringing about the new organization was responsible for the high degree of acceptance by hospital commanders and for the readiness of the dietitian to accept full responsibility. Full support of The Surgeon General contributed greatly to the rapid and effective transition. The Army dietitian had now attained the same professional status as was being enjoyed by her civilian counterpart.

THERAPEUTIC NUTRITION

Throughout the years there has been no question as to the dietitian's role in the dietary treatment of the patient. She, at all times, worked closely with the professional staff of the hospital. To facilitate co-

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[22] Tentative Procedural Manual No. 3, Hospital Food Service, Office of The Surgeon General, 18 Feb. 1952.

[23] Army Regulations No. 40–333, 19 Sept. 1956.

[24] Annual Report, 10th Station Hospital (Korea), 1950. "It is the considered opinion of the undersigned that insofar as this Theater is concerned a male Officer should head the Mess Department and not a member of the WMSC, and it is doubtful as to whether the Mess Department of any numbered unit should be headed by a woman. The hours are long and strenuous, requiring travel to ration dumps in cold and inclement weather. Strict disciplinary control and supervision over some 40 enlisted men is another requirement more suited to a male Officer."

[25] Annual Report, 98th General Hospital, 1952.

ordination with the staff and to update hospital diets, the guide for prescribing Army hospital diets was revised in 1951.[26]

The Surgeon General, responsible for insuring the nutritional adequacy of the ration, requested the Food and Nutrition Board, National Research Council, to submit an expression of opinion and recommendations for the nutritional therapy of Army patients suffering or recovering from various types of injury or disease. The report entitled "Therapeutic Nutrition" was released in 1952 in response to this request.[27]

The report contained the following indictment concerning the quality of dietary care provided Army patients:

> Dietary practices in hospitals have not kept up with the recent advances in the field of therapeutic nutrition. The majority of therapeutic diets outlined in the various hospital manuals, including the military, do not supply the nutrients necessary to maintain good nutrition during the acute phase of an illness, and insufficient attention is given the extra requirements for the convalescent and rehabilitation phase of medical care.

A recommendation was made that there should be an adequacy of calories, vitamins, and other constitutents of the diet and that most sick and injured patients should be given at least 150 grams of protein per day.

During 1954 and 1955, nutritional surveys were conducted in Army hospitals by the Medical Nutrition Laboratory.[28] These studies revealed that the average patient on the regular diet consumed approximately 2,800 calories with a protein intake of 105 grams. This was below the standard recommended by the National Research Council.

Further studies indicated that the protein requirement for patients should be established at two levels: (1) 150 grams of protein daily for those experiencing sufficient metabolic insult to result in a protein "catabolic phase" with a concomitant nitrogen loss and (2) 110–115 grams for those requiring a lesser amount of protein daily. The basic dietary standards prescribed by The Surgeon General were usually considered adequate for previously well-nourished individuals who required only brief periods of hospitalization.[29]

Therapeutic diets were developed and tested at U.S. Army Hospital, Fort Belvoir, from 1 April 1955 through 30 June 1956, in order to establish a firm basis for the nutritional standards for Army hospital diets. Capt. Nannie R. Evans, assigned to this hospital, assisted with the feeding studies. Based upon recommendations of the National Research Council and upon the findings of this study, the manual for hospital diets was again revised to reflect increased allowances of protein and calories.[30]

[26] Technical Manual (TM) 8–500, 4 Jan. 1951.

[27] Pollack, H., Halpern, S. L.: Therapeutic Nutrition. Publication 234, National Academy of Sciences–National Research Council, 1952.

[28] The Medical Nutrition Laboratory is a Class II activity of the Surgeon General's Office, located at Fitzsimons General Hospital, Denver, Colo.

[29] Department of the Army Circular No. 40–6, 14 Apr. 1955.

[30] Technical Manual (TM) 8–500, 4 Dec. 1957.

From time to time, requests were received in the Surgeon General's Office for dietitians to assist in research projects. They have been assigned to the various research units to participate in studies and to assist in writing reports and articles for publication. These assignments included nutritional surveys on various categories of personnel, irradiated food studies conducted by the Medical Nutrition Laboratory, Quartermaster Depot, Chicago, Ill., and by the Medical Nutrition Laboratory, Fitzsimons General Hospital; studies on hepatic and metabolic diseases conducted by the Department of Metabolism, Walter Reed Army Institute of Research, Washington, D.C.; metabolic studies on severe burn cases conducted by the Surgical Research Unit, Brooke Army Medical Center; and, more recently, nutritional studies of Puerto Rican diets conducted by the Department of Metabolism, U.S. Army Tropical Research Medical Laboratory, Fort Brooke, San Juan, Puerto Rico. The studies in Puerto Rico carried the research personnel to isolated areas where they lived among the Puerto Ricans in order to observe them closely and gather data on their food habits.

LIAISON WITH THE QUARTERMASTER GENERAL'S OFFICE

An officer from the Nutrition Branch, Preventive Medicine Division, served on the Quartermaster Menu Board as the official representative of The Surgeon General. The Chief, Dietitian Section, Women's Medical Specialist Corps, usually attended the meetings of this board as well as the preliminary meeting where the menu was discussed and revised before presentation to the board. This officer was thus able to maintain close liaison with representatives of the Food Service Division, Quartermaster General's Office. Dietitians served as the post surgeon's representatives on the post menu boards to insure that changes made in the master menu prescribed by The Quartermaster General did not adversely affect the nutritional content of the menu.

In March 1949, The Surgeon General recommended that the Quartermaster General's Office, with the cooperation of his office, conduct a study of rations for enlisted members of the Women's Army Corps. The current ration was too concentrated a source of energy for women and therefore tended to cause obesity in these individuals. 1st Lt. (later Capt.) Helen R. Barefoot was assigned to The Quartermaster General's Food Service Division for a period of 6 months to assist with this study.[31] Although information from this study proved valuable in later modifications to the master menu, a further nutritional survey was recommended to ascertain the exact nutrient intake required for women performing various types of duty. Nutrition officers were not available for assignment to this proposed survey and it was never initiated.

[31] Disposition Form, Maj. Carl J. Koehn, MSC, Chief, Nutrition Branch, Preventive Medicine Division, Office of The Surgeon General, to Lt. Col. C. A. Rogers, QMC, Chief, Food Service Division, Office of The Quartermaster General, 16 Mar. 1949, subject: Assignment of Dietitian to OQMG to Study WAC Menus, with comments thereto.

Although several dietitians rendered valuable service to the Quartermaster Corps, Maj. Helen T. Klemm was the only dietitian to be recognized by having her portrait placed in the Quartermaster Association Hall of Fame, Camp Lee, beside other outstanding individuals who have distinguished themselves with the Quartermaster Corps. This honor was awarded in January 1960.[32]

ADMINISTRATION

Patient's Food Service

Before 1950, the nurse, as well as the dietitian, had definite responsibility for ward food service.[33] It was not unusual for the ward nurse to prepare eggs and toast for patients' breakfasts and to serve all trays. When the dietitian was given full responsibility for all food service, the nurse was relieved of this nonprofessional responsibility. Some nurses were reluctant to relinquish this portion of the patients' care, but generally the release from nonprofessional duties was welcomed. In a few isolated instances, the transfer of ward kitchens to the food service division was extremely slow because of difficulty in obtaining necessary personnel spaces to staff the ward kitchens.

Infants' formulas

Although the preparation of infants' formulas had usually been the responsibility of the nursing service, at times the question arose as to whether this was the responsibility of the hospital food service. In 1947, The Surgeon General directed that this function be assigned to the nursing service.[34] The need for rigid aseptic conditions was stressed and such conditions did not exist in the ward or main kitchen areas. Hospital construction planning today follows the concept that the formula room should be convenient to and under the supervision of the nursing service.

Centralized ward food service

A centralized ward food service project was initiated by The Surgeon General as part of the Management Improvement Program in November 1951 at Valley Forge General Hospital. The purpose of this project was to test airline-type equipment and service in order to effect improvements in hospital ward food service. Many civilian hospitals were visited to observe systems of centralized food service. Of particular interest was the adaptation of commercial airline equipment to hospital feeding at Barnes Hospital, St. Louis, Mo.

Various types of equipment were tested. Six food carts were constructed locally. Each had an 18-tray capacity and consisted of cold

[32] *The Forge,* 5 Feb. 1960. (Published at Valley Forge General Hospital, Phoenixville, Pa.)
[33] See footnote 5, p. 511.
[34] Circular No. 84, Office of The Surgeon General, 25 June 1947.

and heated sections. Because of weight consideration, the airlines were using plastic tableware. For this reason, plastic tableware from several commercial firms was tested.

From 1951 to 1955, Captain Petersen was the project officer for the centralized ward food service study. In order to evaluate the advantage and economies effected by a centralized system, a section of the kitchen was devoted entirely to this type of food service system. A daily average of 125 bed patients were fed from the centralized system while the other bed patients were fed from the ward kitchens, a decentralized service. Captain Petersen planned the centralized service layout, investigated and procured proper equipment, and worked with equipment manufacturers to assist with the development of a satisfactory cart for the centralized ward food service.

On 25 March 1954, a feasibility study was made by the Chief, Hospital Methods Improvement Branch, Medical Plans and Operations Division, Surgeon General's Office, to determine the advantages of using the new system in Army hospitals. It was found that centralized ward food service was an improved method of feeding patients on the wards. Because of central tray loading, better portion control, and the use of a selective menu, a 25-percent reduction in food losses resulted. It was recognized that a centralized system could be adapted, by the use of mobile equipment, to existing Army hospitals with little or no modification in buildings or facilities.

The project conducted at Valley Forge General Hospital pointed out many advantages of centralizing ward food service activities into the main kitchen instead of serving all trays from widely dispersed ward kitchens (fig. 142). Since this hospital, although two stories high, was constructed on a horizontal plan, the test did not provide data as to the efficiency of operation or the problems incident to this type of food service in a vertical-plan hospital. The latter type was approved for new hospital construction.

In December 1955, The Surgeon General authorized a centralized ward food service test to be conducted at Brooke General Hospital.[35] All data, reports, and equipment lists from Valley Forge General Hospital were made available to Brooke General Hospital. Twelve new hot and cold food service carts were shipped to this hospital so that the test could be expanded to a multistory building. This was considered desirable in order to conclusively demonstrate the practicability and economy of the new system.

The main hospital building at Brooke General Hospital was completely converted to centralized ward food service (fig. 143), while the Annex IV mess, serving approximately the same number of trays, remained on a decentralized system. Therefore, it was possible to make some definite observations relative to the advantages and disadvantages of the two food service systems. No traffic problem arose in the

[35] Smith, S. G.: Report on Central Ward Food Service Test at Brooke Army Hospital. Mil. Med. 121 (No. 5): 291–296, November 1957.



FIGURE 142—Decentralized ward service. Food, prepared in the main kitchen, is brought to the diet kitchen in a food cart and is served from trays which were set up by diet kitchen personnel prior to the meal hour.

multistory building with two elevators. Since the food carts did not have to go up and down steep ramps, the weight of the cart and spillage of food was no problem at this hospital. In this test, standard Medical Department china, silver, and trays were used and were found to be satisfactory.

As a result of the test at Brooke General Hospital certain advantages were evident. With the centralized system, it was possible to supervise and check each tray. This degree of accuracy was most difficult with decentralized tray service. The institution of selective menus improved patient satisfaction. An approximate 80-percent decrease in food waste was noted, mainly due to reduction in the quantity of modified diet foods prepared for the wards, as well as a minimum of plate waste because patients on regular diets were permitted to make a selection of food items and portion sizes and patients on modified diets were given consideration as to their food preferences. A reduction of approximately $50 to $100 per week was effected in the maintenance and operation of the ward kitchens. Centralized tray service also reduced the cost of nourishments approximately 70 to 80 percent. Estimating the cost of hospital space at $25 per square foot, the hospital gained $77,500 in space with the closing of seven ward diet kitchens.

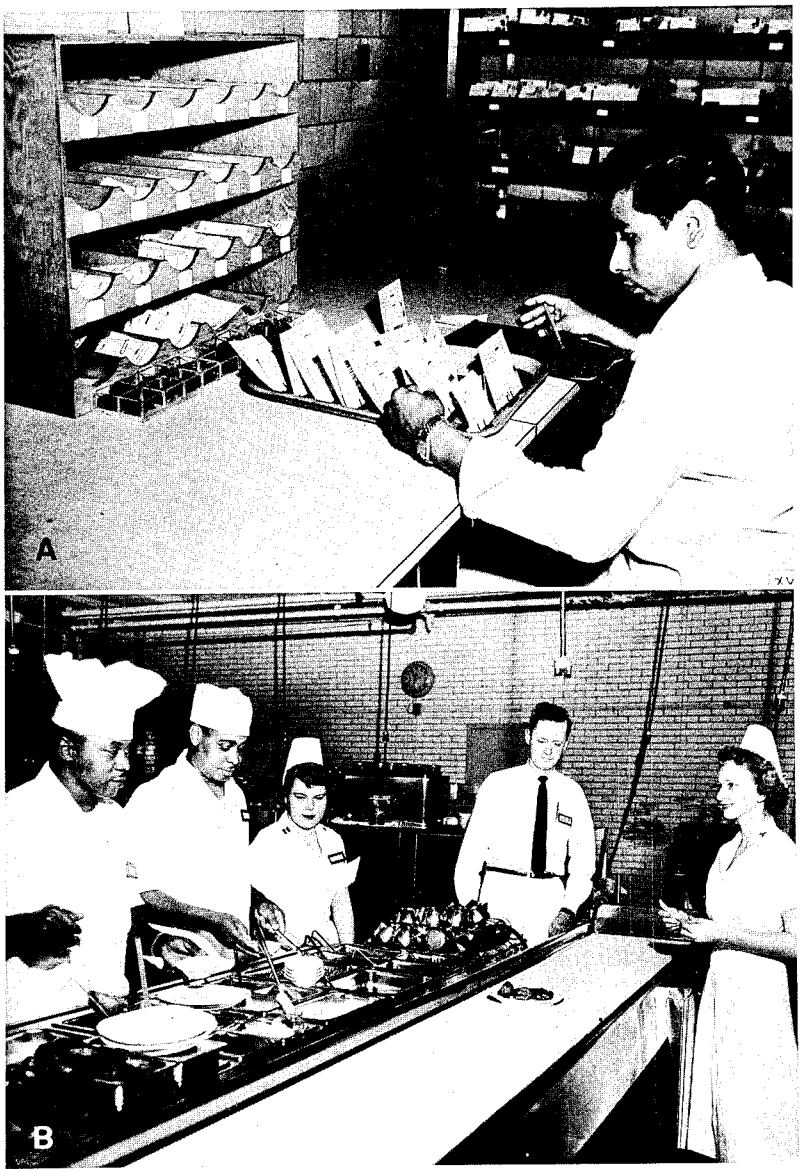


FIGURE 143—Centralized tray service. A. Dietary aid checking menus and tray tags against the nurses' roster. This is done before each meal as a means of picking up changes, deletions, and additions. Menus and tags are taken to main kitchen centralized tray service area where they are used to identify the food requested by the patient and the tray itself. B. Hot food line. As the plate is filled on the moving belt according to individual diet instruction, it is placed in the heated compartment of an electrically powered cart for delivery at the patient's bedside.



FIGURE 143—Continued. C. Overall view of cold assembly area showing positions of servers. The caller and the carrier are loading. Tray racks are utilized to hold dishes, glassware, and food where space is limited. Cold food is placed on a previously set up tray and loaded into area of food refrigerated. D. Food cart on the ward. Tray is removed from cold section. Dietary aide on right is pouring desired hot beverage. Soup can also be served from this liquids area. Hot food is last item to go on the tray and remains in the heated lower right compartment of cart until tray is ready for the patient.

In view of the excellent results of the centralized tray service tests, certain hospitals were encouraged to implement the system. Officers from the Hospital Methods Improvement Branch, Medical Plans and Operations Division, visited hospitals and made recommendations for the implementation of centralized service. The chiefs of the food service divisions visited one of the two test hospitals for 2 to 5 days to observe and study the new system. Procedural manuals were developed and revised as new procedures were established. Copies of these were given to the visiting dietitians to assist them in implementing the program at their hospital.

One of the principle difficulties encountered in the development of a centralized food service system was the design and construction of a satisfactory food carrier. As equipment companies became engaged in the manufacture of a combination hot and cold food service cart, new models were evaluated at Brooke General Hospital to determine which ones were most acceptable to Army hospitals. Field user evaluations were also made at the U.S. Army Hospital, Fort Meade. There being more interest by hospital commanders in converting to centralized service, a procurement document was developed to serve as a guide for local procurement of carts. After these carts were in use for a period of time, reports were submitted to The Surgeon General as to the advantages and disadvantages of the carts obtained under the procurement document. As a result of unsatisfactory equipment reports, The Surgeon General developed specifications for a one-time central procurement of food carts. The number of carts to be procured was based upon the hospital requirements at that time. Carts were not stocked at depots.

Financial Management

Financial management of Army hospitals has always been of primary concern to The Surgeon General. Subsistence funds, in particular, have been singled out for special scrutiny. Hospital commanders have been directed to supervise messes constantly and to exercise every precaution to prevent waste.

In January 1946, the central hospital fund in the Surgeon General's Office and hospital funds in the field were authorized as nonappropriated funds. The central fund was administered under the direction of The Surgeon General and local funds were under the commanding officer of the hospital to which they pertained. The purpose of the hospital fund was to handle financial transactions for both subsistence and patient welfare.[36] Hospital commanders could make expenditures for nonfood items from the hospital fund, but such purchases had to contribute directly to the welfare, comfort, and pleasure of the patient.

Subsistence income for patients was based upon the value of the

[36] Army Regulations No. 40–590, 21 Jan. 1946.

garrison ration[37] plus 25 percent for nontuberculous patients and 50 percent for tuberculous patients. Money received for subsisting patients and nonpatients at hospital messes was paid into the hospital fund. The maintenance of the hospital fund on a sound financial basis was primarily dependent upon the efficiency of the mess operation and patient welfare expenditures. In July 1950, the prescribed rates allowable as subsistence reimbursement for paid patients and military dependents were established by the Bureau of the Budget. This resulted in a considerable reduction in the subsistence income at each hospital. At this time, the central hospital fund had insufficient working capital to subsidize hospital funds. Strict economy and efficient management of food service activities was of utmost importance.

July 1952 was a critical point in the management of subsistence funds. Beginning with this date, money for subsisting patients and nonpatients at hospital messes was no longer to be paid into the hospital fund.[38] Welfare funds were similarly affected. Dietitians generally welcomed this change, for now funds were specifically designated for the purchase of subsistence. Under the hospital fund system, it was not unusual for the dietitian to save in order that items needed elsewhere in the hospital could be purchased. To what extent this was done depended upon the interests of the hospital commander and upon the total amount of money available. Under these circumstances, it was impossible to determine hospital food requirements. The inevitable result, at the insistence of the Bureau of the Budget, was the development of a system whereby food expenditures were isolated and would more nearly represent requirements.

The new system brought several changes.[39] The allowance for subsistence was now the value of the garrison ration. Hospitals having 10 percent or more tuberculous patients were authorized an additional 15-percent allowance for these patients. The garrison ration value was computed monthly by the local commissary officer and was based upon prescribed quantities of specified food items.[40] Ration cost was based upon the dollar value of food issued to the messes and the number of rations earned. The requirement continued for the requisitioning of all food items from the commissary serving the installation.

It was recognized that the loss of the hospital fund might result in a decrease in subsistence funds. To prepare hospitals, a directive was issued in January 1952 directing the practice of certain economy measures and the gradual reduction of expenditures so that by 1 June 1952 the cost of the hospital ration would be the same as the garrison

[37] A ration is "the allowance of food for the subsistence of one person for one day." The garrison ration is that prescribed in time of peace for all persons entitled to a ration, except under specific conditions for which other rations are prescribed, and consist of specific allowances of certain food items. (Army Regulations No. 30–2210, 15 Mar. 1940; *See also* Risch, Erna: The Quartermaster Corps: Organization, Supply, and Services. Volume I, United States Army in World War II. The Technical Services. Washington: U.S. Government Printing Office, 1953, pp. 174–207.)

[38] Army Regulations No. 40–630, 12 June 1952.

[39] Special Regulations No. 40–630–1, 12 June 1952.

[40] Army Regulations No. 30–2210, 15 Mar. 1940.

ration.[41] Admonition was given to continue to satisfy the dietary requirements of patients and nonpatients subsisting in hospital messes.

Although hospital commanders were forewarned as to the changes in subsistence procedures there was a period of confusion and adjustment. The regulations and circulars pertaining to the new accounting system were in some instances received after the effective date of 1 July 1952. General hospitals had to change their cost accounting procedures. For many station hospitals, with no established cost accounting system, it was a most difficult transition because of lack of personnel trained in cost accounting. One problem for the oversea hospital was the difficulty in establishing a new system of commissary accounting. Previously these hospitals had drawn the field ration and the supplement for patients. It was now necessary to establish commissary accounts and requisitioning procedures.

There was gradual acceptance and appreciation of this system of subsistence accounting which required strict control over the procurement and issue of food supplies. Educating duty personnel to the limitations placed upon food expenditures was a perplexing problem. Few people really understood the impact of the loss of the hospital fund on the food service operation and the welfare activities. The ingenuity and the managerial ability of the dietitian were heavily taxed to provide acceptable nutritious meals for patients and personnel while experiencing sudden changes and reductions in subsistence funds.

The Bureau of the Budget appeared satisfied that Army hospitals were taking a step in the right direction in the accounting of subsistence funds. This satisfaction did not last. Food service management in federal hospitals continued to be evaluated and compared and the comparison was not always favorable to the Army Medical Service. The ration pattern and the method by which rations were counted were of particular concern to the Bureau of the Budget.

The Veterans' Administration had established a ration pattern which favorably impressed the Bureau of the Budget. This pattern was the result of 5 years' intensive study and served in ascertaining the nutritional level of feeding. It consisted of a specified allowance of food items such as meat, milk, and vegetables per individual served. There was no standard ration pattern within the military service, although, in 1949, consideration had been given to proposing legislation for a common ration.[42] In May 1958, a committee,[43] reporting on a study of ration allowances for military hospitals, stated that there was need to establish a standard ration pattern for military hospitals in terms of the number of ounces of each major food category and standards for pricing out such a pattern. No positive action was taken on this matter.

The fact that the cost of the Army hospital ration was based upon

[41] Department of the Army Circular No. 9, 29 Jan. 1952.
[42] Memorandum for Record, Lt. Col. Frederick H. Gibbs, MSC, Executive Officer, Medical Plans and Operations Division, Surgeon General's Office, 8 Jan. 1949.
[43] Report, Study of Ration Allowances for Military Hospitals, 26 May 1958.

the number of rations earned rather than on those actually served was of concern to the Bureau of the Budget. By counting rations earned, credit was received for personnel who were authorized to subsist but were not actually present for all meals. The amount of credit for extra rations varied among hospitals; therefore, a comparison of food costs was unrealistic. Hospitals with a wide variation between the rations earned and the rations served could more easily stay within the monetary allowance. The fact that this was accomplished was not a true indication of operational efficiency nor of the service of high quality food. Generally, the larger installations had a distinct advantage while the small hospitals on isolated posts had a distinct disadvantage.

The disparity in rations continued to be a problem. In order to have information available to support the medical care budget, The Surgeon General required hospitals to report on the total number of rations served for the period 1 July 1954 through 28 February 1955.[44] In 1956, the monthly statement of food service operations was changed to include a report on the number of rations served by category of personnel subsisting.[45] No change was made in the method of arriving at hospital food costs. Finally, effective in July 1959, Army hospitals were required to use rations served rather than rations earned in determining food costs.[46]

Two events affected hospital food costs after the initiation of the hospital ration system in 1952: the supply of surplus dairy products and the change in pricing the local master menu. The supply of surplus dairy products resulting from legislation enacted in 1954[47] was a boon to the dietitian. Restricted quantities of butter at 4 cents per pound and cheese at 2 cents per pound, plus an authorization to exceed the hospital ration rate by the cost of milk used in excess of the normal allowance, made it possible to provide a more acceptable menu within established allowances. The normal allowance of milk was first established as that amount above the average authorized by the installation menu for July, August, and September, 1954. Later, the normal allowance was established at 8 ounces per ration.[48] The boon turned into a boomerang for the surplus milk cost was reflected in the total food cost which was considered excessively high by the Bureau of the Budget.

Additional funds for hospital expenditures resulted from a change in the pricing of the local master menu. Beginning in January 1957, the master menu as planned, rather than food components of the garrison ration, was priced by the local commissary officer. By so doing the value of the garrison ration represented the actual cost within the geographic area of food required for the menu. There was no change at the Quartermaster General's Office in pricing components of the

[44] Department of the Army Circular No. 40–5, 6 Apr. 1955.
[45] Special Regulations No. 40–630–1, Changes No. 1, 26 Apr. 1956.
[46] Army Regulations No. 40–333, 27 May 1959.
[47] Public Law 690, 83d Congress, 28 Aug. 1954.
[48] (1) Department of the Army Message No. 428879, 19 June 1956. (2) Circular No. 111, Office of The Surgeon General, 29 Oct. 1956.

ration as a basis for overall cost control of the master menu. The following statement from a hospital report is indicative of the benefit derived from this change: [49]

> With the changes effective 1 January 1957 in the pricing of the Master Menu and the subsequent raising of the hospital ration rate, our Food Service Division is now able to maintain a menu considered to meet the nutritional and acceptability needs of our patients.

In January 1958, because of the gradually rising costs of Army medical service, The Surgeon General sent an economy letter to hospital commanders. Raw food costs were pointed out as one of the serious problem areas. Almost immediately a more drastic measure was taken by ordering hospitals to achieve a flat reduction in food costs. Hospitals experiencing a cost for raw food, including excess milk, above $1.15 per ration served for January 1958 were ordered to take steps effective on 1 April 1958 to reduce this cost by 10 percent or to $1.15 per ration served, whichever was higher. Installations operating below the $1.15 figure were cautioned not to raise costs.

This strict reduction in ration allowance unfortunately came at a time when the value of the garrison ration was increasing. In some instances, hospitals had to operate at a level below that authorized for subsisting troops in the same area and on the same posts. Since surplus milk was now considered a part of the raw food cost, some hospitals immediately limited the quantities of milk served. To complicate the situation further, the diet manual prescribing increased levels of protein was being received by hospitals.

A newspaper article appearing on 16 April 1958 set off a reaction.[50] According to this article, troops were having all the milk they desired but the hospital was restricting the consumption of milk. The Surgeon General had not directed the reduction of any component of the diet but had placed a limit on total food costs. To resolve the inequities brought about by the establishment of a flat rate for all hospitals and to provide an average cost per ration served which would fluctuate in direct relationship to the local value of the garrison ration, the original order was rescinded and new instructions were issued.[51] Hospitals were authorized the local value of the garrison ration or field ration A, plus the increment for tuberculous patients and plus the local cost of 1½ pints of fresh whole or recombined milk.

Throughout this period of drastic change in the hospital ration rate, a detailed system on food cost accounting was in effect. Daily food issues were costed by the food groups and daily and accumulative comparisons were made. In hospitals where the cost accounting system was working effectively, the cost of food issued to the mess was known to the dietitian on the day following the actual issue of food. With this accurate and current food cost data, the dietitian could

[49] Essential Technical Medical Data, Headquarters, United States Army, Europe, Medical Division, for April–June 1957, dated 29 Aug. 1957.
[50] *The Denver Post,* 16 Apr. 1958, "U.S. Buys Huge Milk Surplus But Army Hospital Rations It."
[51] Army Regulations No. 40–330, 5 June 1958.

more scientifically make changes in future menus to control food expenditures. Under this cost accounting system the dollar value of the food inventory was carried as part of the net working capital. Daily and weekly fluctuations in the monetary value of the inventory were relatively unimportant, but every effort was made to maintain a fairly constant monthly monetary value for the inventory. Food issues as well as increases or decreases in the dollar value of the food inventory were reflected in the ration cost at the end of the month.

Effective on 1 July 1959, food purchases and rations served rather than food issues and rations earned were established as the basis for determining the cost of the hospital ration.[52] The change to food purchases was brought about by the fact that the food service division was the only segment of the hospital not operating on an item-purchased basis under the current hospital accounting system. Other changes concerning financial management were effected. Weighted values were given each meal thereby more nearly reflecting the cost of the meal. The food inventory, no longer a part of the net working capital, was not considered in determining ration cost. The food service report was required quarterly rather than monthly. Except for the last quarter of the fiscal year the reports from station and oversea hospitals were consolidated by the command of which they were a part. Hospitals were authorized to exceed the monthly hospital ration rate, but were cautioned to carefully watch costs so that the ration value for the fiscal year would not be exceeded.

The simplification of food cost accounting met with different receptions. Dietitians and individuals responsible for cost records were reluctant to relinquish any controls because they were accustomed to checking daily costs. Purchases did not reflect actual day-to-day costs. The elimination of daily posting of food issues on the stock record cards and of the food inventory gave concern to the dietitians. Previously established controls did not have to be discontinued for authority was given for the establishment of such controls as were believed necessary to afford adequate protection over subsistence supplies. There continued to be divided opinion as to whether the prescribed controls were adequate for efficient operation. Financial responsibilities have been accepted and administered by the dietitian in a highly commendable manner. The one person who gave the dietitian the greatest assistance during this period of financial turmoil was Nephtune Fogelberg, Comptroller, Surgeon General's Office. He understood the dietitian's problems and was always available to give counsel and encouragement concerning the financial management of the food service division.

Food Procurement

In 1947, at the beginning of the period covered by this chapter, the procurement of food supplies through the Quartermaster Market

[52] See footnote 46, p. 529.

Center was not entirely satisfactory. Many complaints were received by the Dietetic Consultants Division about the quality of produce, meats, dairy products, and poultry. Surveys by representatives of The Surgeon General verified these complaints. After months of investigation and presentation of facts to the Quartermaster General's Office, standards of service to Army hospitals were defined.[53] Much improvement was noted. Procurement of special food items for patient feeding is probably the area which needs the greatest attention at this time. The ration or supplement for hospital patients, without doubt will be affected by developments in the troop ration, which now includes precooked and prepackaged foods.

Equipment and Facilities

Because of wartime emergency conditions and the shortage of supplies, hospital equipment and facilities in 1947 were not of the standard desired by The Surgeon General. Items such as steam tables, cold counters, coffee urns, toasters, and dish tables were substandard and needed replacement. Some hospitals were still using coal ranges which were time consuming to fire, dirty, and lacking in temperature control. The Drinkwater Cart, an insulated food conveyor, was still in service.

In January 1947, specific recommendations were made by The Surgeon General for the replacement of inferior-type equipment.[54] Later in that year, the use of nonstandard items such as paper tray covers and souffle cups, napkin dispensers, diet identification tags, and tray card holders were recommended by The Surgeon General.[55]

Metal compartment trays were gradually replaced by plastic trays and china. This greatly improved the attractiveness of food service (fig. 144). With the use of china for bed patients came the development of a bed tray to take the place of the wooden bed tray. This tray was of metal and so designed as to be used as a bookrest, a desk, or as a stand for the patients' tray. It was to be left in the ward for the patient's convenience. Nursing service was unreceptive to this procedure for storage of the tray was a problem. After hooks were made available on the ward to accommodate the tray, this problem was eliminated. In spite of the effort to upgrade equipment, some wooden trays are still in use.

A plastic tray 15¼ by 20½ inches came into use with the metal bed tray. This plastic tray was larger than the standard tray in order to accommodate the dishes required for bed patient food service. This tray was too large to go through the dishwashing machine. Hand washing was a laborious and unsatisfactory process. This situation was

[53] (1) Memorandum, Field Headquarters, Quartermaster Market Center System, Office of The Quartermaster General, for All Officers in Charge, Quartermaster Market Centers and All Marketing Specialists, 26 May 1947, subject: Standards of Service—Army General Hospitals. (2) See footnote 34, p. 521.

[54] See footnote 5, p. 511.

[55] See footnote 34, p. 521.

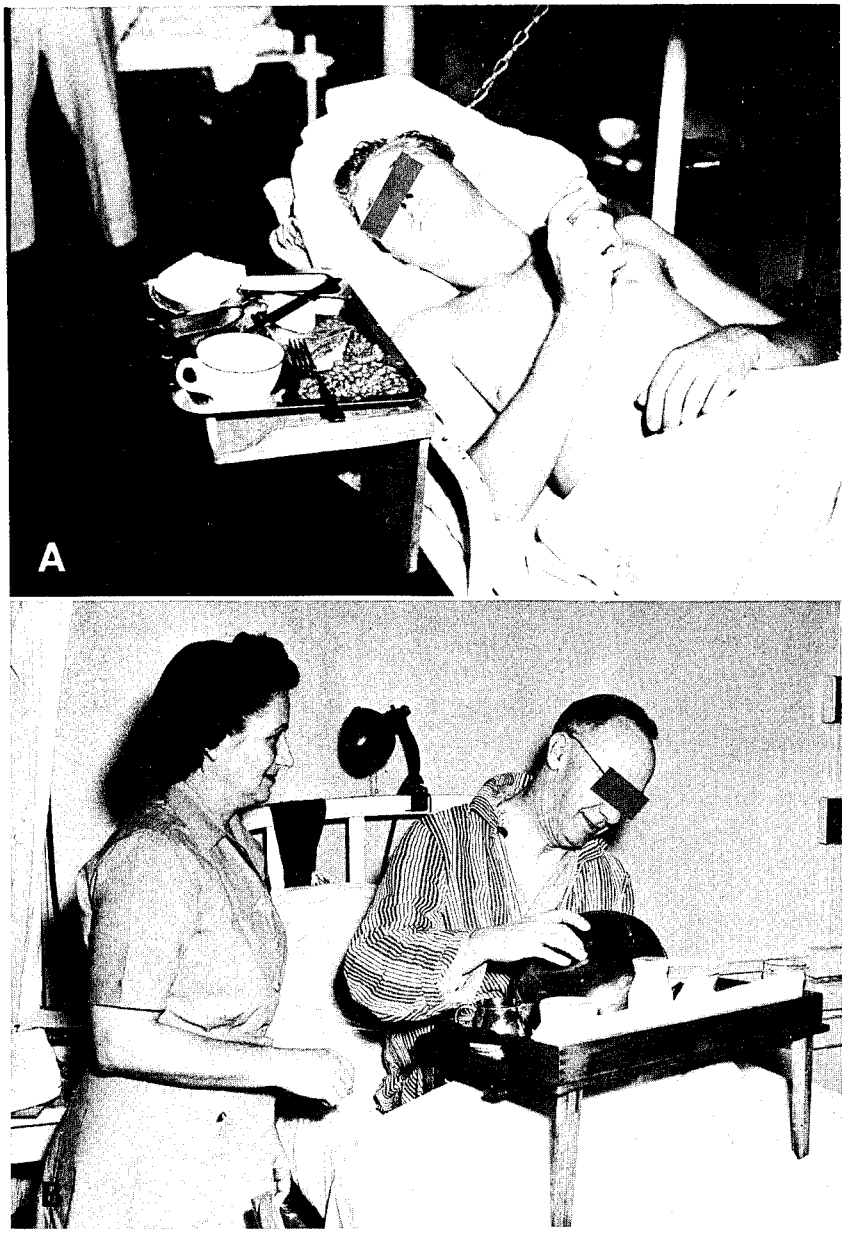


FIGURE 144—Tray Service. A. Metal compartment tray widely used in all hospitals. In use here on hospital ship. B. Wooden tray. (U.S. Army photograph.)

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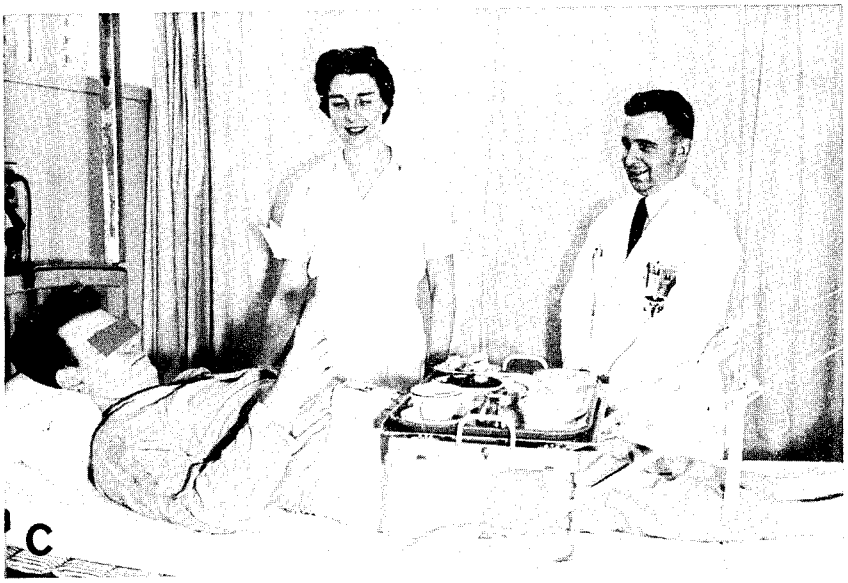


FIGURE 144—Continued. C. Metal tray. (U.S. Army photograph.)

alleviated to some extent by the authorization of a dishrack to hold the tray. Because of excessive warping, the tray was never entirely satisfactory. Action was taken in 1959 to standardize a more durable tray which could be obtained from more than one commercial source. This action was not accomplished during the period covered by this chapter.

After the transfer of the responsibility for Medical Department china to the Quartermaster in 1959, hospitals encountered difficulty in obtaining standard items of china. Because of the depletion of stocks in the Quartermaster depots, purchases had to be made on the open market. This resulted in unmatched china on the patient's tray and usually an increased cost to the purchaser. This problem was not resolved by January 1961.

Along with the action to replace obsolete equipment came the modernization of facilities. With the passing of time, cantonment-type hospitals in particular were deteriorating. As funds were made available, layouts were rearranged and new equipment replaced those pieces judged to be unservicable or obsolete. Replacement of the eight-place table with swinging stools by the four-place table with separate chairs contributed to make the dining room less institutional in appearance and atmosphere (fig. 145). Harold Hasle, Food Service Section, Quartermaster General's Office, rendered invaluable service in the matter of facilities planning and equipment procurement.

Early in the period covered by this chapter, renovation of the ward



FIGURE 145—Dining room area. (Top) Eight-place table with swinging stools. (U.S. Army photograph.) (Bottom) Four-place table with separate chairs.

serving kitchen was stressed. Wooden cabinets were replaced by stainless steel cabinets, dishwashing machines took the place of sterilizers, a combination stove and griddle was provided, and kitchen space was enlarged. With the adoption of centralized tray service, the equipment and space requirement for ward food service changed.

As hospitals are planned and constructed, changes are taking place to improve facilities. Requirements, of necessity, will have to be reevaluated in the light of experience and of information gained concerning developments in equipment. The food service section of the newly constructed hospitals received fewer complaints than many other areas. Among the difficulties encountered, however, was the amount of kitchen floor space and the quantity of installed equipment in hospitals built on a chassis for future expansion. This extra space and equipment meant additional cleaning for which personnel spaces were not authorized. Storage and office space were generally inadequate. Dietitians were unhappy with offices where there were no windows. It is recognized that there will be differences of opinion as to layout and equipment and that there will be problems concerning space allocation and placement. Planning for Army hospitals is done years in advance of construction, and sound forecasting of requirements is therefore imperative.

Personnel

Military personnel

Enlisted personnel presented a special problem throughout the period covered by this chapter. The using service often had little or no voice in the selection of enlisted men, as their assignment came through normal requisitioning channels of the Quartermaster. Enlisted men trained and experienced in hospital food service management were often transferred from the Medical Department after their tour of duty in a hospital was completed. It was felt that identification would aid in obtaining and retaining men experienced in hospital food service. Throughout World War II and later, requests were made for the establishment of military occupational specialty designation for hospital food service enlisted personnel. The Air Force has been authorized to identify their hospital food service enlisted personnel, but similar authorization has yet to be attained by the Army Medical Service.

Because of this situation, the training of enlisted men with no previous hospital experience in all phases of hospital food service was of utmost importance. Training of military cooks was conducted continuously in each hospital. It has been estimated that approximately 3 months were required to train an enlisted man to be effective in hospital food service management. His loss to the Medical Department was costly in time and effort expended in training. Probably one of the greatest disadvantages for the untrained men was their lack of

experience in dealing with civilian personnel. The complicated and detailed civil service regulations and the need for more effective techniques in management of civilian employees made their orientation most difficult.

In 1946 and 1947, efforts were made to establish a separate 6-week course for hospital cooks and hospital ward diet cooks. Its purpose was to furnish practical experience to enlisted men in regard to patients' diets and to familiarize them with the general administration of the hospital mess. Diet food preparation and food service in the ward diet kitchen would thereby be more efficient. The course was to be 240 hours and was to include: organization of the dietetic department, 3 hours; personal hygiene, 1 hour; equipment use in hospital diet kitchens, 2 hours; nutrition and diet therapy, 8 hours; principles of diet cookery, 6 hours; menu plans for special diets, 4 hours; food service for special diets, 5 hours; on-the-job training, 210 hours; and examination, 1 hour. This course was to be conducted in a general hospital. These efforts recognized the requirement in the Medical Department for hospital food service trained enlisted personnel, however, no favorable action was taken. In 1950, and again in 1955, similar courses were submitted for approval to The Adjutant General. These, too, were disapproved.

With the emphasis on efficiency and economy of hospital food service during the period covered by this chapter and with the shortage of dietitians, it was obvious that a formal training program would have provided the Medical Department with trained personnel. These individuals could have been used not only in the cooking and serving of hospital diets, but also in the management, supervision, and training of other personnel. With a limited number of personnel and limited money for subsistence, it was increasingly evident that noncommissioned officers responsible for management and supervision of dining rooms and ward kitchens would require additional training to develop skills over and above their basic Quartermaster military occupational specialty requirement.

Hospital reports during later years have specifically mentioned the deterioration in the quality of enlisted food service personnel. One headquarters stated that over a period of 2 years there had been a trend downward in experience, interest, initiative, and overall capabilities in the food service personnel assigned to hospitals.[56]

Today the career field for food service personnel is not especially attractive to the ambitious enlisted man. The food service program of 1947 gave promise of a rewarding future for the food service man. This promise has not materialized and prospects grow even dimmer in view of the great emphasis placed upon skills in electronics and missiles. For the maintenance of high standards, it is imperative that physically able and mentally alert men be assigned to and be retained in the food service field.

[56] Essential Technical Medical Data, Headquarters, United States Army, Europe, Medical Division, for January–March 1957, dated 27 May 1957.



FIGURE 146—On-the-job training session for civilian food service employees.

Civilian personnel

Problems relating to civilian personnel have also been perplexing. From time to time, reduction in force of civilians has created havoc in well-organized hospital operations. Each time this has occurred, qualified individuals have been lost and a period of adjustment and training followed. Hiring of civilian employees, when restricted to selection from a registry, has complicated the selection of qualified individuals. A few dietitians have been able to establish specific job standards which have assisted in the elimination of a large percentage of those believed undesirable and resulted in a reduction in labor turnover. The older worker with decreased capabilities for hard physical labor is often a dilemma to the dietitian. The service and loyalty of these workers is recognized, but there is little room for sentiment when personnel spaces are authorized on the basis of work measurement rather than on individual ability.

The need to establish job standards for food service workers has been evident for some time. The U.S. Army Hospital Management Research Unit conducted a study of the food service division at Brooke General Hospital. The purpose of the study was to develop performance standards for work units in work areas which were determined to be measurable and to develop a method by which performance standards could be applied to food service activities so as to

measure the effectiveness of manpower usage and the personnel requirements for any sustained workload. A report of the study,[57] which is believed to be one of the few made in the field of hospital food service, was made in 1958. Findings from this study were used in the development of a staffing guide for Army hospital food service.

Training of civilian food service employees was emphasized (fig. 146). For some time a program of ward and mess attendant training had been established.[58] On-the-job training of these employees was conducted in all hospitals. To assist in the training of military and civilian food service personnel, a four-part film entitled "Training Hospital Food Service Personnel" was made and released in 1951.[59] Revision had been made in accordance with changes in food service organization and procedures except that centralized tray service had not been included. The film was widely used and continues to serve as a useful training tool.

[57] Report, U.S. Army Hospital Management Research Unit, Brooke Army Medical Center, 1958, subject: Work Measurement in Army Hospitals, Food Service Division Study, Brooke Army Hospital.

[58] Special Regulations No. 40-590-75, 10 June 1949.

[59] Part I, "Introduction," was filmed at Fitzsimons General Hospital, Denver, Colo., with Capt. Lydia L. Romersa acting as technical adviser. Part II, "Sanitation," and Part III, "Equipment," were filmed at Valley Forge General Hospital, Phoenixville, Pa. Part IV, "Serving Food" was filmed at the Signal Corps Photographic Center, New York, N.Y. Maj. Helen M. Davis served as technical adviser for the last three parts. Capt. Katharine E. Manchester and Capt. Dorothy Adams, ORC, were responsible for the original script and served as advisers prior to the filming at Fizsimons General Hospital.

CHAPTER XVII

Professional Services and Activities of Physical Therapists April 1947 to January 1961

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The major professional service of Army physical therapists from 1947 to 1961 was that of treatment of patients within a hospital situation. The administrative procedure for accomplishing this service was established in June 1949.[1] Where a physical medicine service was part of the hospital organization, physical therapy was one section of that service. Others included occupational therapy, physical reconditioning (until 1955), and the administrative and diagnostic sections. In small hospitals, the commanding officer was authorized to place physical therapy, occupational therapy, and physical reconditioning in the professional service he deemed appropriate.

The Army general hospital was similar to a university hospital or medical center in that patients were referred for special consultation or treatment. In addition to the local community, it served a worldwide area. The station hospital served as a feeder unit to the general hospital and was comparable to a community hospital for an Army post. Routine illnesses were usually found in these smaller hospitals. If a patient was expected to return to duty within a certain time period, he remained in the station hospital. Long-term patients or those requiring additional specialized services, however, were normally transferred to the general hospital.

GENERAL HOSPITALS

Physical Medicine Service

A physiatrist was chief of the physical medicine service at each of the general hospitals until 1955.[2] He was responsible to the commanding officer of the hospital for all physical medicine activities. The chief physical therapist, under the direction of the physiatrist, was generally in charge of all professional and administrative physical therapy activities.

[1] Army Regulations No. 40–705, 16 June 1949.

[2] After 1955, a shortage of physical medicine officers precluded their assignment to each general hospital, and by December 1960, physiatrists were assigned only to Brooke General Hospital, Fort Sam Houston, Tex.; Fitzsimons General Hospital, Denver, Colo.; Letterman General Hospital, San Francisco, Calif.; Madigan General Hospital, Fort Lewis, Wash.; Tripler General Hospital, Honolulu, T.H.; and Walter Reed General Hospital, Washington, D.C.

The staff physical therapist was responsible to the chief physical therapist for patient treatment, and senior staff physical therapists were frequently responsible for a definite treatment division of the clinic.

Enlisted Personnel

The last echelon of responsibility rested with the noncommissioned officer in charge and his staff of enlisted personnel, all of whom were directly responsible to the chief physical therapist. The duty of these people was the care and maintenance of the clinic and the administering of patient treatment as directed by the chief physical therapist. This group of men and women was due much credit for their contribution to the professional services rendered by physical therapy. They frequently were highly skilled and conscientious technicians, and the normally superior appearance of the clinics attested to the pride the enlisted staff took in the work for which they were responsible.[3]

Enlisted physical reconditioning personnel became a part of this staff after 1955 as a result of pilot studies conducted at Letterman General Hospital, San Francisco, Calif., and Fitzsimons General Hospital, Denver, Colo., during the summer of 1954. The position of physical reconditioning officer was eliminated and the enlisted specialists were generally placed in either the physical or occupational therapy section, whichever was appropriate. It was believed that effective use could thus be made of the enlisted men's special training while supervision was shifted to already established programs. Several years later, it became apparent that use of physical reconditioning in physical therapy was declining. Ward programs for medical and surgical patients dwindled perceptibly and physical reconditioning clinic activities for these patients were almost on a patient-volunteer basis. Physical therapists' lack of interest in physical reconditioning was probably the major cause of this decline.

Physical Therapy Clinic

Although the actual physical layout differed from one treatment clinic to another, the same general divisions were found in all. In the division usually referred to as the main clinic, treatment by heat, cold, electrotherapy, and massage was given.

A second area known as the therapeutic gymnasium or exercise room contained exercise equipment for patient use under the close supervision and assistance of the physical therapist. The usual exercise equipment could be found here: barbells, pulleys, exercise mats, stall bars, weights, posture mirrors, shoulder wheels, and finger ladders. In addition, equipment and space were usually allocated for gait training

[3] Enlisted personnel were called technicians until 1955 after which time the title "specialist" was used. In this chapter they are referred to as specialists.

and mat work. The size of the gymnasium varied with the available space. In most instances, it was a busy and necessarily large section of the physical therapy clinic.

Other lesser divisions included hydrotherapy rooms, ultraviolet rooms, and usually a few private rooms or booths for selected types of treatment. Some departments had separate clinics for women patients, while others provided private rooms or booths in the main clinic for their treatment.

In several instances, general hospitals maintained detached subdivisions. Walter Reed General Hospital, Washington, D.C., staffed a physical therapy clinic at its Forest Glen Section, Silver Spring, Md., until February 1955. Although a number of the patients were amputees, the majority of patients treated there were ambulatory convalescent patients with peripheral nerve injuries. Brooke General Hospital, Fort Sam Houston, Tex., had a physical therapy clinic in the main hospital building, a small separate clinic in an area designated for convalescent patients, and a large clinic at Annex IV (later called Beach Pavilion). At Walter Reed General Hospital, a former physical reconditioning gymnasium became an area specifically used for advanced rehabilitation. Known as the Activities of Daily Living Clinic, its value was apparent as the influx of geriatric patients increased the need for teaching self-care. A somewhat similar gymnasium was developed at Brooke General Hospital. At first, it was called the Combined Activities Clinic because the program was a combination of physical therapy and physical reconditioning activities.

Equipment

Equipment in one hospital clinic differed very little from that in every other. Maj. Genevieve Pearson, using various sizes and lengths of rubber tubing, devised exercise apparatus which was widely used in Army physical therapy clinics. This equipment was economical, easy to construct, and highly functional. Tilt tables were improvised from discarded radiology tables at both Letterman and Brooke General Hospitals (fig. 147). Improvised equipment was necessary until the mid-fifties when manufacturers began incorporating many of the ideas in their rehabilitation equipment.

Clinics were adequately supplied with short wave diathermy apparatus, radiant heat lamps, bakers, ultraviolet lamps, paraffin baths, whirlpool baths, and low voltage stimulators. New or improved equipment, including Hydrocollator packs, ultrasound generators, microwave diathermies, constant current impulse stimulators, and Elgin tables, was added as it became available and was approved by the Surgeon General's Office [4] (fig. 148). New plinths became a standard item of issue but the chosen model was to have a stormy course before being ac-

[4] In the early fifties, a new diagnostic tool—electromyography—came into general use by the physiatrist as an aid in the determination of the location and extent of nerve lesions.



FIGURE 147—Tilt table improvised from X-ray table, Letterman General Hospital, San Francisco, Calif., 1959. (U.S. Army photograph.)

cepted by the physical therapists.[5] Objections ranged from dislike of the brown paint to the inconvenient and inadequate shelving. Changes in these were authorized and accomplished in many clinics.

Among the outmoded equipment most universally discarded was the passive vascular exercise boot, a machine for producing intermittent vascular occlusion, elaborate hydrotherapy equipment, and carbon arc lamps. Long wave diathermy apparatus was outlawed by

[5] The old model plinths were still in use in the physical therapy clinic at Walter Reed General Hospital, Washington, D.C., in 1960.

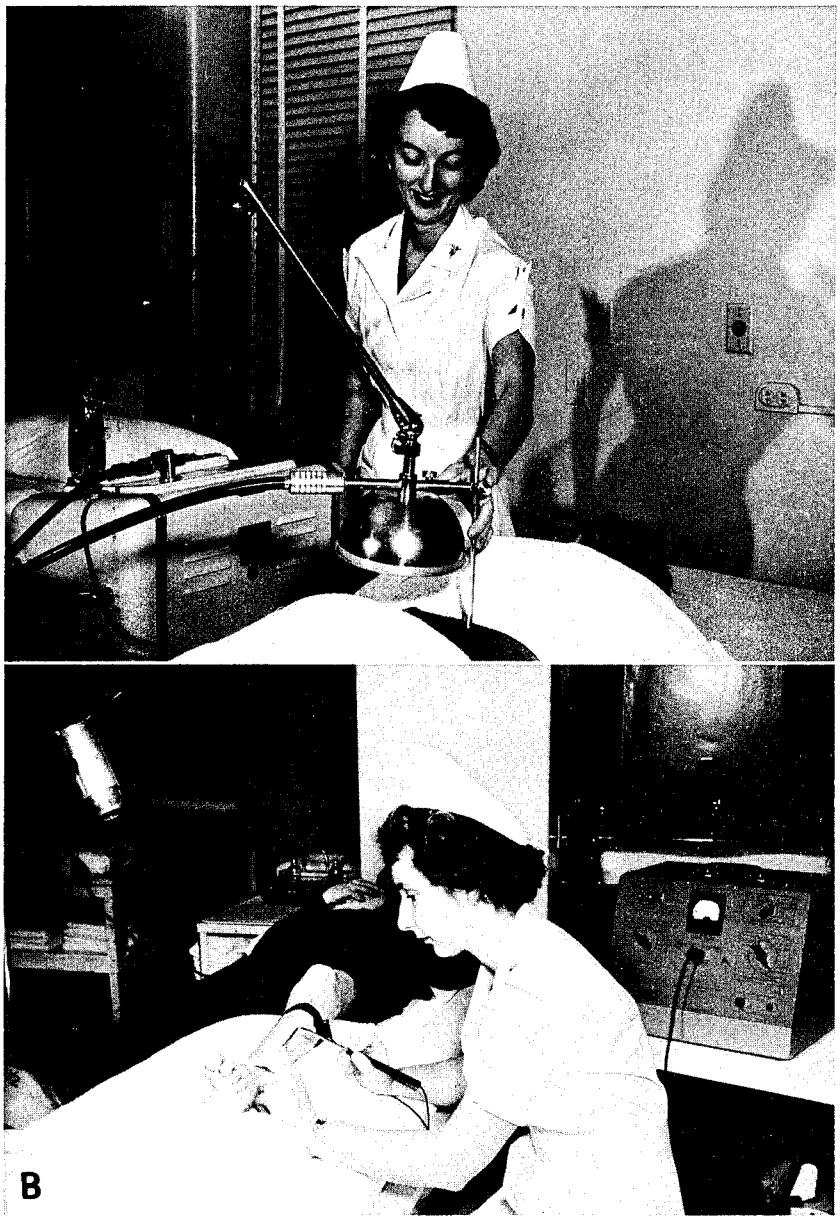


FIGURE 148—Physical therapy equipment. A. Microwave diathermy. B. Constant current impulse stimulator.



FIGURE 148—Continued. C. Ultrasound generator.

the Federal Communications Commission and short wave diathermy apparatus was assigned specific wave bands in 1947. Medical maintenance crews with special training converted the existing short wave diathermy machines, manufactured before 1 July 1947, to the proper operating frequencies. The use of Moistaire cabinets decreased largely because they were cumbersome and there were other equally effective forms of treatment.

STATION HOSPITALS

A physical medicine service was normally nonexistent in a station hospital.[6] One of the physicians, usually the chief of the orthopedic service, was appointed to give medical direction to the physical therapy section. Occasionally, occupational therapy was available, depending upon the size of the hospital. Physical reconditioning per se was usually not found in a station hospital because peacetime requirements and length of patient stay did not warrant this program. If one or two enlisted physical reconditioning specialists were assigned, they were normally utilized in their specialty under the supervision of the phys-

[6] During the Korean War, several station hospitals were designated as specialized treatment centers and staffed with a complete physical medicine service. As the need for expanded facilities decreased, these hospitals were closed or reverted to their normal patient load, for example, Camp Atterbury, Columbus, Ind.; Fort Campbell, Ky.; Fort Carson, Colo.; and Fort Gordon, Augusta, Ga.

ical or occupational therapist, depending upon the treatment program.

Old Construction

During World War II, the standard station hospital was a frame cantonment structure built to last for an expected occupancy of 7 years. Physical therapy clinics occupied one or more ward buildings. Fortunately, these were usually located near the center corridor of the hospital so that as the hospital census dropped and wards were closed, the clinics remained in a convenient location. During the years following the war, there was much fluctuation in the number and size of hospitals required. The wooden buildings which had been expected to last for 7 years were repaired and remodeled many times. Some of these were still in use, nearly 20 years after construction. Physical therapy clinics of this type still operational in 1960 were located at Aberdeen Proving Ground, Md.; Fort Benjamin Harrison, Ind.; Fort Devens, Ayer, Mass.; Fort Eustis, Va.; Fort Gordon, Augusta, Ga.; Fort Huachuca, Ariz.; Fort Hood, Tex.; Fort Jackson, S.C.; Fort McClellan, Ala.; Fort Ord, Calif.; and Fort Rucker, Ozark, Ala.

New Construction

As of May 1960, 10 new Army station hospitals were completed, 4 were under construction, and 3 were funded, with promise of early construction.[7] The physical therapy clinics in these installations were impressive and attractive in appearance and equipment but, as often happens in new construction, deficiencies in planning became apparent with use.[8] The most common criticism was that air conditioning did not compensate for the small number or lack of windows, and that space was inadequate for the workload. In addition, such space, as there was, was divided into many small treatment areas which made supervision more difficult. Army physical therapists have long felt that they can operate more effectively and efficiently in a large open treatment area with a minimum of private cubicles reserved for those whose treatment requires privacy.

Composition of Patient Load

In addition to treating the usual number of hospital patients, physical therapists in station hospitals treated an even larger number of outpatients. From 1952 to 1960, the reduction in the size of the Active Army reduced the number of outpatient visits of Active Army personnel (table 23). Surprisingly, the number of visits of military dependents almost doubled during this period. Figures of physical therapy visits reflected a similar picture. This trend has produced a patient load in Army physical therapy clinics similar to that seen in civilian clinics (fig. 149).

[7] Department of the Army Technical Bulletin (TB) 8–1, 1 May 1960, pp. 3–7.
[8] Personal correspondence of the author, 1961.

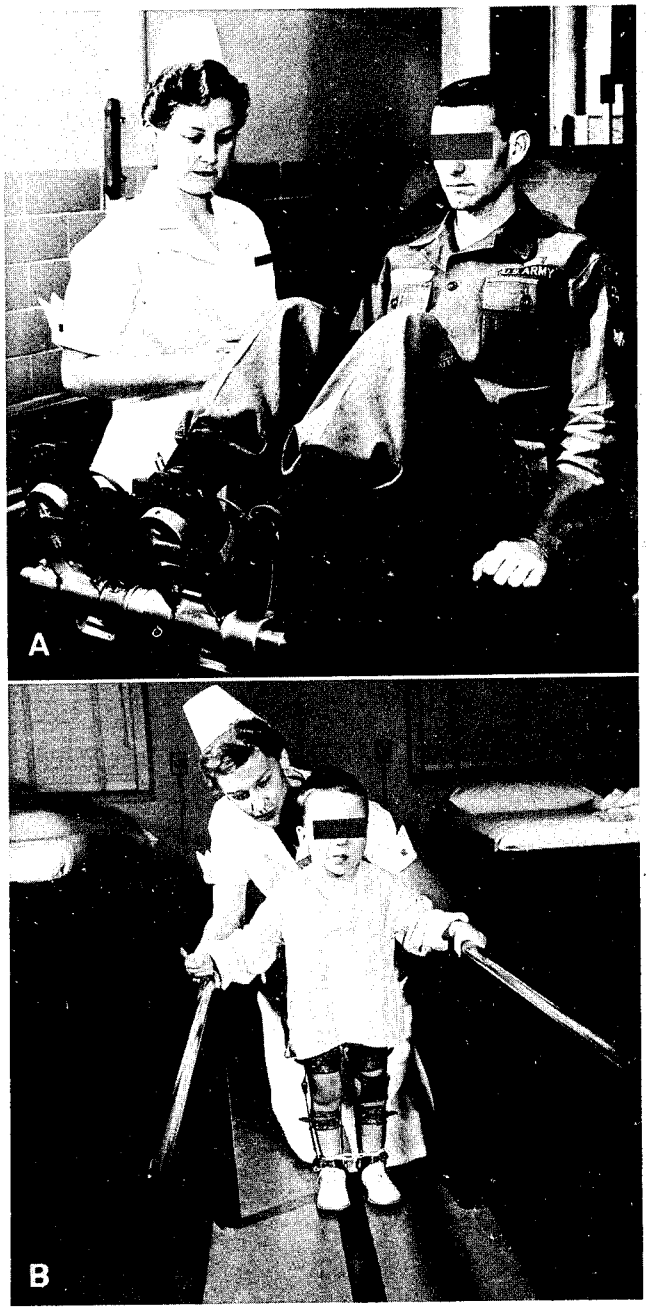


FIGURE 149—Variety in patients treated by Army physical therapists. A. A paratrooper exercising to increase strength of leg muscles. B. A child who is learning to walk. (U.S. Army photograph.)

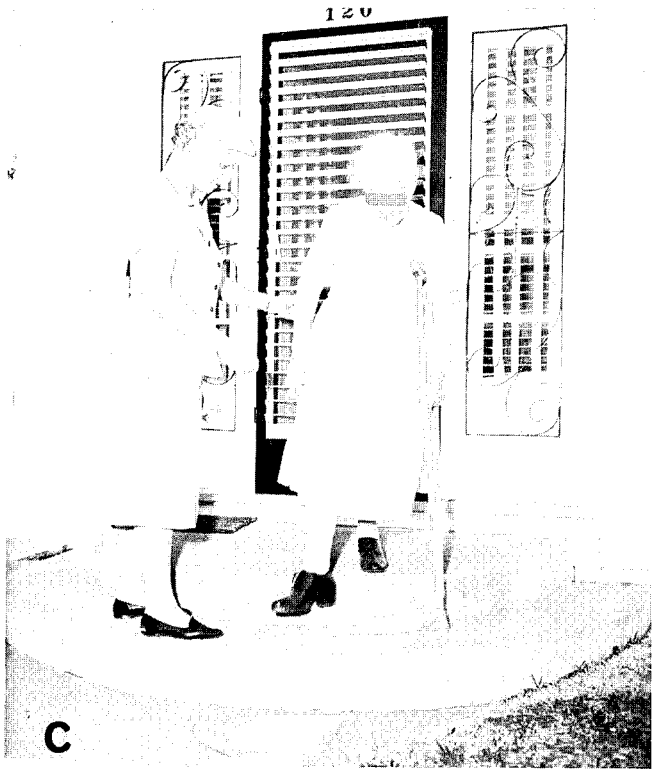


FIGURE 149—Continued. C. A geriatric patient, an elderly dependent, is taught to walk down the front steps of her home.

TABLE 23—*Number of outpatient visits to Army hospitals, 1952 and 1960*

Year	Active Army strength	Outpatient visits	
		Active duty personnel	Dependents
1952	1,596,000	9,972,000	3,047,000
1960	873,000	5,170,000	5,942,000

Source: Medical Statistics Division, Surgeon General's Office.

Solutions to Handling Patient Load

Handling a large patient load at the station hospitals frequently taxed the ingenuity of the one or two physical therapists assigned there. At training centers, trainees were penalized for missing training, whether or not the reason was due to an injury. Therefore, immediate, simple, and effective treatment was indicated. In some clinics, the physical therapists concentrated on providing treatment whenever the patients could come—1 or 10 at a time; one installation implemented a dispensary program where patients could step from the physician's office next door to a small but adequate clinic where they received

physical therapy; one physical therapist supervised a well-trained staff of enlisted specialists in administering the simple procedures required. The assignment of a physical therapist to the orthopedic clinic to give the patients instruction in self-exercise was found to be an effective method which helped particularly in handling the large outpatient load on clinic days.

CONTINUING EDUCATION

Opportunities for the continuing education of the Army physical therapist were available through a number of channels, the inservice educational program being one of the most valuable. Because of large staffs in general hospitals, the program was perhaps more formalized than in station hospitals. Also characteristic of the general hospital was the wide variety of patients and the concentration of unusual cases, both of which created a learning situation which was further enhanced by a system of rotation of clinical assignments. Working with many types of patients was of especial value to the young physical therapist who sought to identify with a particular type of condition or patient.

The physical therapy staff meetings in a large hospital provided opportunity for discussion of the many professional and administrative problems that arose in the everyday operation of the clinic. At times, a physician discussed subjects pertaining to the interests of physical therapy or a staff member reviewed basic sciences or basic techniques. A disease entity was sometimes reviewed. For example, as the poliomyelitis season approached, this disease was discussed in terms of etiology, pathology, physical findings, management, and the practice of therapeutic procedures. Staff members who attended specialized courses reported their experience and shared their knowledge with the staff, a procedure which vitalized the physical therapy program, bringing to it the most recent thinking, methods, and developments from outside sources.

Experience in administration was provided by giving staff physical therapists the opportunity of supervising the clinic. They scheduled and assigned patients and, in general, were responsible for a smoothly coordinated clinic day. Such an arrangement gave the physical therapists an insight into many of the administrative procedures, helped them develop good interpersonal relationships, and to mature as physical therapists and supervisors. This responsibility, once referred to as "on the desk," was later dignified in some of the larger hospitals by the title "clinic coordinator."

The physical therapists in the smaller hospitals, although deprived of the stimulus of association with their professional peers, nevertheless were privileged to participate in an educational program of broader scope and interest. In the small hospital, the physical therapists learned more about other members of the hospital staff, became fa-

miliar with emergency measures, and, because of fewer numbers both of patients and personnel, developed a better insight into the comprehensive care and management of the patient. Since they usually knew more about physical therapy procedures than any other hospital personnel, it was not unusual for them to present an orientation program on physical therapy to the hospital staff. They had a closer relationship with more physicians in more specialties, thereby being exposed to unending professional learning experiences.

TREATMENT OF SPECIFIC CONDITIONS

In order to note treatment changes and trends from 1947 to 1961, various conditions will be discussed separately and briefly. Omission of discussion of a condition implies only that there was no basic change in the treatment procedures from the World War II period.

Amputations

Amputees made up a large part of the physical therapy patient load during the periods following World War II and the Korean War. Most amputees were treated at Brooke, Letterman, and Walter Reed General Hospitals.

Except for minor changes in treatment procedures, physical therapy management of most amputees remained the same (fig. 150). The relatively new kineplastic procedure was frequently seen in some of the clinics, and physical therapy was used routinely in the program of treatment.

The development of the kineplastic procedure presented a new problem, that of harnessing intact muscle power to activate a prosthesis. This procedure was most commonly performed for the upper extremity amputee, utilizing the pectoralis major or biceps muscle. On lower extremity below-knee amputees, it was performed occasionally on the rectus femoris muscle. The procedure for exercise was the same in all respects in addition to special exercise for the muscles involved in the kineplasty. A small rod was inserted through the tunnel so that each end protruded on either side of the tunnel. By applying resistance to the rod, counter to the line of pull of the muscle, resistance was applied to the tunnel and consequently to the muscle. This encouraged a gradually increased excursion of the tunnel. A maximum excursion of the tunnel was needed for good control of the prosthesis. By 1960, because of the limited applicability of this procedure, it was used very little.

The suction socket, used on above knee prostheses, came to be widely used and required no new physical therapy procedures other than instruction in the use of the prosthesis. Phantom limb pain continued to present a problem which retarded the progress of some amputees. Although no effective treatment had been determined, an Army phys-



FIGURE 150—An amputee receiving gait training.

ical therapist reported the successful use of ultrasound on four patients.[9]

Brain Injuries

Hospitalized because of injuries sustained in automobile accidents, cerebral vascular disturbances, and birth injuries, patients with brain injuries were found in every Army hospital. No one age group monopolized this classification, for geriatric as well as pediatric patients were represented. As would be expected, the number of patients with brain injuries increased as a result of the Korean War.

[9] Anderson, M. J.: Four Cases of Phantom Limb Treated With Ultrasound. Phys. Therapy Rev. 38: 419–420, June 1958.

Physical therapy played a major role in the treatment and rehabilitation of the patient with an upper motor neuron lesion. Several new techniques were employed at various times in efforts to improve the function of these patients.

Proprioceptive neuromuscular facilitation, developed by Herman Kabat, M.D., and Margaret Knott, P.T.,[10] came to be used widely in Army clinics and variations of this method became almost routine in treatment. Patterns of motion elicited by proprioceptive stimulation were the basis for muscle re-education, a departure from the traditional methods of individual muscle re-education. During a tour of duty in Japan, Capt. Mary Jane Torp completed a study related to the use of proprioceptive neuromuscular facilitation techniques in the exercise program of patients with hemiplegia.[11]

The Rood concept was based on the exteroceptive stimulation of nerve, muscle, and bone to produce and reinforce muscle contractions. Stroking, positioning, kneading, brushing, pounding, and ice applications were used for this stimulation.[12]

The Bobath method utilized posture and positioning as a means of stimulating muscle contractions.[13] This method was especially developed for use in the treatment of the child with cerebral palsy. 2d Lt. Donald Tresch, AMSC, demonstrated that its principles could also be utilized for treatment of the adult patient with hemiplegia and illustrated its use in a film[14] made at Valley Forge General Hospital, Phoenixville, Pa.

Signe Brunnstrom, long a leader in treatment of amputees, turned to neuromuscular disabilities and combined many existing concepts of neuromuscular function which were used in treatment of the brain injured.[15]

Capt. Walter J. Treanor, MC, physiatrist at Letterman General Hospital, advocated nociceptive stimulation combined with peripheral nerve blockage to overcome disabilities following brain injury.[16] A description of these procedures with the adjunctive physical therapy program provided the basis for a complete session of the annual conference of the American Physical Therapy Association in 1954.

All of these techniques were complex and required precise application. Physical therapists attended courses to learn the various methods and returned to their clinics to instruct others. It can be safely said

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[10] Kabat, H., and Knott, M.: Proprioceptive Facilitation Technics for Treatment of Paralysis. Phys. Therapy Rev. 33: 53–64, February 1953.

[11] (1) Torp, M. J.: Adaptations of Neuromuscular Facilitation Technics. Phys. Therapy Rev. 36: 577–586, September 1956. (2) Torp, M. J.: An Exercise Program for the Brain-Injured. Phys. Therapy Rev. 36: 664–675, October 1956.

[12] Rood, M. S.: Neurophysiological Reactions as a Basis for Physical Therapy. Phys. Therapy Rev. 34: 444–449, September 1954.

[13] Bobath, K., and Bobath, B.: Spastic Paralysis; Treatment of by Use of Reflex Inhibition. Brit. J. Phys. Med. 13: 121–127, June 1950.

[14] PMF 5347: Physical Therapy in Treatment of the Adult Hemiplegic, 1960 (35 mm., color, sound).

[15] Brunnstrom, S.: Associated Reactions of the Upper Extremity in Adult Patients With Hemiplegia; An Approach to Training. Phys. Therapy Rev. 36: 225–236, April 1956.

[16] Treanor, W. J., Cole, O. M., and Dabato, R.: Selective Reeducation and the Use of Assistive Devices. Phys. Therapy Rev. 34: 618–625, December 1954.

that discerning physical therapists had, in the past, utilized many of the principles of muscle function set forth in these techniques, but until these skills were organized into definite methods and procedures, widespread usage did not result.

The general pattern for treatment of a patient with a central nervous system lesion was to encourage early motion in the extremities followed by standing and ambulation as soon as feasible. Training in activities of daily living was often a joint project of occupational and physical therapy with return to duty the goal for some and self-care in the home as a satisfactory achievement for others. Large numbers of patients with hemiplegia were retired elderly persons for whom a home program was indicated.

The child with cerebral palsy did not appear in large numbers in any Army clinic. For several years in the early fifties, a Cerebral Palsy Clinic was operated at Brooke General Hospital. Working closely with the Child Guidance Clinic, it was staffed by both occupational and physical therapists and was fully equipped for treatment of the child with cerebral palsy. Inasmuch as local public school systems provided treatment for most of these children, the Army physical therapist in some situations lacked experience in treating this type of patient.

Burns

In 1946, the Surgical Research Unit at Brooke General Hospital began to investigate the problems of mechanical and thermal injuries and the complications arising from such trauma. The Surgical Research Unit implemented this by caring for patients with such injuries, thus providing clinical research material for studies and teaching. Its clinical facilities, within the new building of Brooke General Hospital, occupied half of one floor. By 1949, the emphasis for clinical investigation had shifted to thermal injuries, so much so that the ward was referred to as the "burn ward" and the unit as the "burn unit."

Patients presenting burns of such seriousness as to contribute to research findings were admitted regardless of their status, civilian or military. The Surgical Research Unit utilized physical therapy both in ward and clinic treatment. In this way, many physical therapists and physical therapy students obtained valuable experience in this highly specialized work. The experience proved useful in treatment of isolated burn patients at other hospitals.

At the request of the Surgical Research Unit, a physical therapist, 1st Lt. JoAnne K. Gronley, was assigned full time to the unit for the purpose of providing improved patient care and also to investigate methods whereby deformity of the burned patient might be decreased or prevented.[17] Early in this assignment, Lieutenant Gronley improvised a Hubbard tank from a discarded steam table. This piece of equip-

[17] 1st Lt. JoAnne K. Gronley was assigned to the Surgical Research Unit in July 1959. In January 1962, spaces were authorized for one physical therapist and one occupational therapist.



FIGURE 151—Wand exercises for the young and older patients.

ment was located on the burn ward, allowing the ward patient to receive treatment several times a day and the clinic patient to receive supplementary ward treatment. Prevention of deformity was attempted through early functional positioning and early exercise of the patient. Immobilization was permitted only during the first 5 to 10 days following the burn (while eschar was intact) and during grafting.[18]

Chest Conditions

The treatment of thoracic injuries changed somewhat from the program carried on during World War II, although the basic exercise programs for preoperative and postoperative patients remained essentially the same (fig. 151). There was increased use of pressure chest-expansion exercises which were accomplished in many different posi-

[18] Gronley, J. K.: The Positioning of Severely Burned Hands When Treated by the Exposure Method. Phys. Therapy Rev. 40: 521–522, July 1960.

tions. The patient's need for deep breathing was increased by gradually increasing the activity of the whole body.[19]

Use of new drugs in the treatment of tuberculous patients greatly reduced the requirements for surgery. Improved surgical techniques caused less drastic tissue destruction in these patients and thus a shorter period of physical therapy was required. Combat wounds and chest tumors comprised the large majority of nontuberculous surgical patients. Open heart surgery was perfected during this period and these patients followed the general physical therapy routine for the thoracic surgery patients although the progression in treatment was much slower.[20] Frequently, these patients were children with congenital heart deformities.

Still another type of chest condition was the nonoperable one, such as that of the patient with asthma, cystic fibrosis, bronchiectasis, or emphysema. Since there was no dramatic episode to impress these patients with the importance of changing their breathing habits, motivation was frequently difficult. Postural drainage and breathing exercises emphasizing controlled exhalation were routinely taught to them. In addition, parents of children with cystic fibrosis were given specific instructions and demonstrations of tapping which helped the children to expel the mucus. Usually one or two sessions of instruction in the clinic were adequate for the patient to start a home program. Written instructions were given in most instances as reinforcement and reminder of the exercise program.

Low Back Pain and Herniated Nucleus Pulposus

Herniated nucleus pulposus was recognized as one of the frequent causes of back pain which radiated into one or both extremities. Patients with low back pain were initially treated conservatively with physical measures and medication. Bed rest and traction were augmented by physical therapy. The generally accepted routine stressed mild back flexion exercises to relieve tightness of low back musculature and exercises to strengthen the abdominal muscles. Heat or cold applications often preceded the exercise but massage was seldom employed. In addition, the patient was taught good body mechanics in the hope of preventing a recurrence of symptoms.

The patient with severely involved herniated nucleus pulposus who found only temporary or no relief from pain by conservative treatment usually entered a general hospital. If a final attempt at conservative treatment failed, surgery was indicated. Following surgery, protective body mechanics and a continued exercise program were emphasized.

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[19] Anderson, M. J., and Aronstam, E. M.: Intermittent Positive Pressure Breathing; An Adjunct in the Rehabilitation of Thoracic Surgery Patients. Dis. Chest 30: 168–171, August 1956.

[20] Cruickshank, H. E.: The Role of Physical Therapy in the Surgical Management of Heart Disease. Phys. Therapy Rev. 35: 641–644, November 1955.

Obstetrical Conditions

Interest in physical therapy for the obstetrical patient in Army hospitals was initially generated in 1948 by 1st Lt. (later Capt.) Willie R. Harvey in her work at the U.S. Army Hospital, Fort Meade, Md. She taught simple abdominal strengthening and low back flexion exercises following delivery in order to prevent later complaints of back pain from poor posture.[21]

During the period from 1949 to 1961, many Army hospitals instituted exercise programs for either the prenatal or the postpartum period. For the former, relaxation, breathing, and postural exercises were the most commonly stressed.

Orthopedic Conditions

The rehabilitation of the orthopedic patient presents problems which utilize almost the entire gamut of physical therapy facilities. Pain, edema, atrophy, muscle weakness, incoordination, and limitation of joint motion are the common problems seen in most orthopedic patients.

Heat has long been the treatment of choice for relieving pain and swelling but in recent years the use of ice therapy has been added. Ultrasound treatment has become widely used for many types of orthopedic conditions.

During the period covered by this chapter, there was increased recognition of exercise as the essence of the rehabilitation program for the orthopedic as well as other patients (fig. 152). The DeLorme technique of progressive resistance exercise increased in popularity and was a valuable method of improving muscle function. Progressive resistance exercise came to be universally used for strengthening the quadriceps muscle in the cases of knee injury and surgery. Because of the adaptive possibilities of the Elgin table, it became possible to apply the technique of progressive resistance exercise to practically any muscle group.

Exercises incorporating isometric contractions against heavy resistance came to be widely used. Maj. Mary S. Lawrence was an early investigator in this area.[22] This method was found to be especially effective for those conditions requiring an increase of strength with a minimum of joint motion, as in chondromalacia of the patella.

Facilitation techniques, though most commonly employed in neurological conditions, were used on occasion in certain orthopedic conditions. Selected techniques of the Rood method such as brushing, tapping, and ice applications were frequently used to stimulate weak and atrophied musculature.

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[21] Harvey, W. R.: The Need for Physical Therapy in Postpartum Care. Phys. Therapy Rev. 29: 206–217, May 1949.

[22] Lawrence, M. S.: Strengthening the Quadriceps: Progressively Prolonged Isometric Tension Method. Phys. Therapy Rev. 36: 658–661, October 1955.

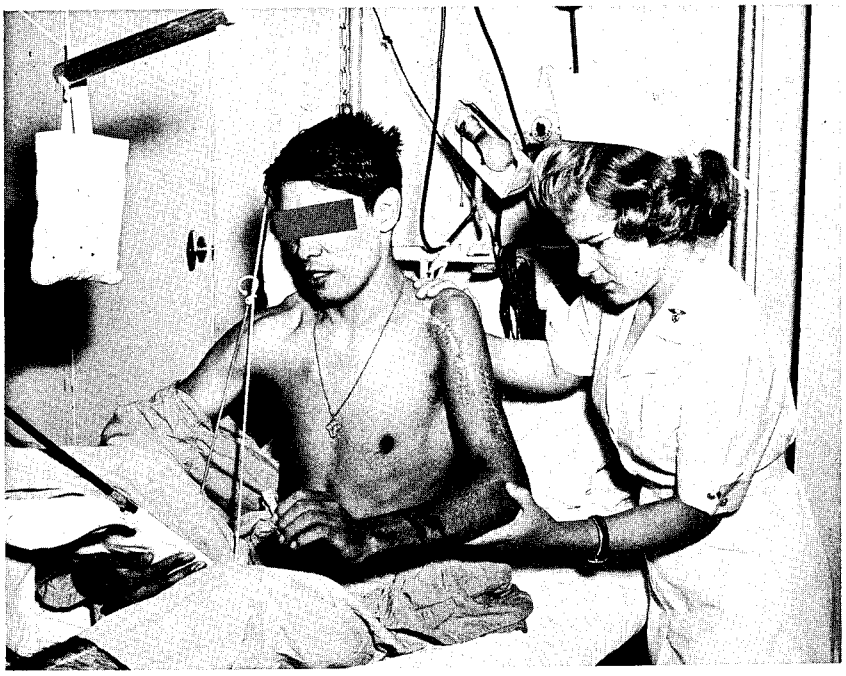


FIGURE 152—Patient receiving mild exercise for fracture and dislocation of humerus.

Paraplegia and Quadriplegia

By 1947, the majority of patients with spinal cord injuries received during World War II had been discharged to Veterans' Administration hospitals for final rehabilitation. The number of patients with these injuries increased during the Korean War. Throughout the entire period, however, diving, automobile, and training accidents resulted in an astonishingly large number of spinal cord injuries.

The physical therapy program involved hard work and psychological motivation. Electrical stimulation, heat, and ice packs were among the modalities used to relieve the complications of pain and muscle spasm, with no outstanding success attributed to any one technique. Massage was seldom employed and then only for short periods in selected cases. Facilitation techniques were found effective in treatment of injuries of varying degrees of severity. Emphasis was placed on patient activity.

Physical therapists attended special courses such as the one conducted at the Institute of Physical Medicine and Rehabilitation, Bellevue Medical Center, New York, N.Y., to learn the methods developed there. Mat exercises became part of the treatment of the patient with paraplegia and the accent was on self-help. Physical reconditioning personnel contributed to the mental and physical rehabilitation of

these patients, encouraging and challenging them to overcome their problems.

Active duty personnel with a major disability such as quadriplegia were normally discharged from the Army and transferred to a Veterans' Administration hospital for fitting of braces, final rehabilitation, and vocational training if needed. There was no such provision, however, for the treatment of dependents. Their entire treatment was accomplished in an Army general hospital and required the careful coordination of physician, physical therapist, orthopedic appliance maker, nurse, occupational therapist, and other members of the rehabilitation team.

Poliomyelitis

Rehabilitation of the patient with poliomyelitis has long been associated with the skills of physical therapists. Many of the basic tenets of muscle function held by physical therapists were derived from the treatment of these patients. Re-education of individual muscles and strength grading of individual muscles were concepts which were basic to the treatment of every patient with poliomyelitis. Numerous Army physical therapists attended courses at Georgia Warm Springs Foundation, Warm Springs, Ga., in order to learn current treatment techniques and concepts. In the early fifties, methods of muscle re-education were being reconsidered in light of clinical findings. Newer methods of neuromuscular re-education challenged the concept of individual muscle re-education.

The preferred treatment for patients with acute poliomyelitis consisted of the application of woolen hot packs to the painful areas, mild stretching of the involved musculature, and careful exercise of the joints through range of motion. The small wool hot packs which were wrapped and pinned around an extremity were replaced by large layon packs. Use of these helped to eliminate much of the painful handling of the patient.

The discovery, subsequent development, and Army-wide administration of Salk vaccine in 1956 almost eliminated the patient with acute paralytic poliomyelitis from Army hospitals. Information on the physical status of patients with poliomyelitis 5 years following onset of the disease was collected and used as a basis for a study completed and published by Captain Torp.[23]

OVERSEAS

European Command

During the period covered by this chapter, physical therapists assigned to Army hospitals in the European Command were faced with many of the same professional problems as those encountered in the

[23] Torp, M. J.: Poliomyelitis: Functional Progress Report of Fifty Cases Approximately 5 Years-Post Onset. Phys. Therapy Rev. 33: 351–358, July 1953.

United States. In general, hospital facilities fluctuated with the needs of the area. Wartime medical units were moved or reorganized to provide convenient and adequate treatment both for Army personnel and their dependents who began coming into the area. As in the United States, a great increase was noted in demands for outpatient facilities.

Throughout the period covered by this chapter, both general and station hospitals in Europe had physical therapy clinics. Small station and field hospitals were established throughout the original American Zone of Germany, Austria, and France as the need arose. The size of the physical therapy staff in these hospitals was comparable to that in station hospitals in the United States. Occasionally, qualified civilian physical therapists and assistants were employed.

Professional standards were strengthened by a series of professional meetings initiated in 1953. Four meetings a year were held during the first few years of the program, but eventually this pattern changed to one annual meeting which included members of all three sections (dietitian, physical therapist, and occupational therapist) of the Army Medical Specialist Corps who were stationed in Europe.

During the early occupation days, supply problems made it necessary to use German physical therapy equipment which, although strange in appearance, was actually superior in some ways to that manufactured in the United States. The advantage of utilizing indigenous electrical equipment was that it was constructed to function efficiently with the available local electrical current. Transformers were scarce and the difference in frequency lowered the efficiency of American-manufactured equipment constructed to use the 120 volts, 60 cycles per second current. Later, as supply problems diminished, American equipment predominated. By careful planning, supplies were adequately maintained although it required approximately 6 months to obtain replacements from the United States.[24]

Physical therapy facilities improved as the hospitals themselves improved. The 98th General Hospital, constructed in Neubrücke, Germany, in 1953, had a large spacious physical therapy clinic complete with a physical reconditioning gymnasium and was located across the hall from a well-equipped occupational therapy clinic. Inasmuch as no occupational therapist had been assigned when this hospital opened and an experienced enlisted occupational therapy specialist was available, the chief physical therapist supervised the occupational therapy activities until a chief occupational therapist arrived in 1955.[25]

The location of the Orthopedic Center in Europe was always of interest because it meant a concentration of physical therapists in that area. During the period under consideration, the Orthopedic Center moved three times in Germany—from Stuttgart to Munich in 1949, from Munich to Neubrücke in 1953, and from Neubrücke to Frankfurt in 1959, which is the air transportation link with Army hospitals in

[24] Personal correspondence, Lt. Col. Mary Ben Dure to the author, 9 September 1960.
[25] Personal correspondence, Maj. Emma T. Harr to the author, 13 September 1960.

the United States. Physical therapists and clinic equipment accompanied each move.

Practice alerts

Routine practice alerts, begun in 1950, were unique to the European Command and became almost as commonplace as fire drills. The alerts in the various hospitals were similar in that they required the hospital personnel to respond to an alarm by reporting to their mobilization assignments in field clothing. Some required the personnel to carry out the mobilization assignment for many hours under hardship conditions, while others were mere token drills. In all cases, these practice alerts demonstrated that the hospital personnel were aware of their dual role in the theater. As has been the case in various disaster tests in the United States, physical therapists at first complained that they were not used in a capacity consistent with their professional background. Discussion of this problem led to an understanding of the skills level of physical therapists and eventually to an appropriate utilization of their abilities.

Far East Command

Two professional accomplishments of physical therapists in the Far East Command during 1947–61 were their contribution to the treatment of Korean War casualties and their participation in the training of Korean Army medical personnel in rehabilitation measures.

As in the European Command between 1947–50, considerable shifting and re-settling was experienced. Physical therapists were gradually withdrawn from their assignments in the Philippine Islands and Korea; hospital units in Japan consolidated and moved to new areas as required.

Suddenly in mid-1950, combat casualties overloaded the existing facilities. Through the efforts of Maj. Ethel M. Theilmann, physical therapy consultant in the Far East Command, the limited number of physical therapists were assigned where they could make their maximum contribution. In the fall and winter of 1950, the situation was alleviated with the arrival of hospital units[26] with their full complement of physical therapists and enlisted specialists. Occasionally, a physiatrist was assigned as chief of a physical medicine service, but this specialty was rare in this command and usually the assignment fell to the chief of the orthopedic service. As a result, more professional responsibility was placed on the physical therapists who proved themselves more than equal to the demands made upon them.

Adding to the complexity of the situation was the influx of the United Nations soldiers. These men represented many countries which had contributed fighting soldiers to the Korean War. Although the various languages and cultures of these countries presented many per-

[26] Tables of Organization and Equipment units.

plexities, they also added an unexpected zest to the hospital atmosphere.

The majority of enlisted personnel assigned to the clinics were untrained in physical therapy techniques. Because of the urgent need for physical therapy specialists, on-the-job training was accomplished in most of the hospitals during the entire emergency period. A formal training program was established in March 1952 at the U.S. Army Hospital, 8164th Army Unit, Kyoto, Japan, with 1st Lt. (later Capt.) Catherine Owen in charge. Following the recommended Army program for the training of physical therapy technicians, four 12-week courses were conducted. Twenty-one enlisted men were graduated and reassigned to physical therapy clinics throughout the Far East Command. By December 1952, the critical shortage had been relieved and the course was discontinued.[27]

When a Cold Injury Center was established on 1 December 1950 at Osaka Army Hospital, Osaka, Japan, over 4,000 patients were treated the first winter. The program which was resumed the following winter was reported by Capt. (later Maj.) Mary E. Sacksteder, chief physical therapist.[28] Injuries ranged from simple frostbite and trenchfoot to deep freezing, necessitating amputation. On admission, patients were routinely started on a ward physical therapy program consisting of specific active exercises to be conscientiously performed for 10 minutes of every waking hour. The goals were to restore and maintain the effectiveness of the injured extremity, to prevent atrophy and deformity, and to achieve maximum range of motion. Buerger-Allen exercises were used only in treatment of selected patients, for it was believed the resultant increase in circulation was contraindicated where extensive necrosis was present.

Late in 1950, 1st Lt. (later Maj.) Clarissa Hicks, assigned to the 118th Station Hospital, Fukuoka, Kyushu, Japan, found herself in the midst of an epidemic of the newly identified Japanese B encephalitis.[29] Approximately 280 patients with this diagnosis, all of whom had been on duty in Korea, were treated in this hospital. Forty of these patients were treated in the physical therapy clinic over a 3-month period.

Patients with Japanese B encephalitis demonstrated generalized paresis, often with superimposed localized paresis of either upper or lower motor neuron origin.[30] Muscular rigidity, incoordination, tremor, poor posture, and limitation of joint motion due to muscle shortening were some of the symptoms which responded to physical therapy measures. Lieutenant Hicks, never having encountered the disease before, was permitted to treat patients symptomatically as there was no precedent for her to follow. Debilitated patients with generalized weakness were started with full body infrared irradiation and general

[27] Annual Report of Medical Service Activities, Headquarters, U.S. Army Hospital, 8164th Army Unit, U.S. Army Forces, Far East, 1952.

[28] Sacksteder, M.: Physical Therapy in the Early Care of Cold Injuries. Phys. Therapy Rev. 31: 518–522, December 1951.

[29] Annual Report of Army Medical Service Activities, 118th Station Hospital, U.S. Army Forces, Far East, 1950.

[30] War Department Technical Bulletin (TB MED) 181, 6 Apr. 1947.

strengthening exercises on a plinth. Gradually, patients progressed to a sitting position; active resistive exercises and whirlpool bath treatment were added as tolerated. As general strength returned, specific weaknesses were noted and given special attention.

In September 1953, a poliomyelitis epidemic broke out in Japan. The victims included many United Nations troops as well as United States military personnel. To provide physical therapy for these patients, a special program was set up at Tokyo Army Hospital, Tokyo, Japan, under the supervision of Maj. (later Lt. Col.) Elizabeth C. Jones, chief physical therapist.

In addition to the many hospital activities, a program of instruction for Korean medical personnel was undertaken by Army physical therapists. In the early fifties, Major Theilmann implemented the rehabilitation program for amputees in three Republic of Korea Army hospitals. She not only designed suitable facilities but managed to train Korean personnel despite the multiple problems posed by language barriers and lack of equipment.[31]

Maj. Christine Ehlers and 1st Lt. (later Capt.) Winifred Nesbit, on 30-day tours in 1953, worked with the Armed Forces Assistance to Korea Program in Taegu and Pusan. They instructed a total of 15 Korean medical personnel in basic principles and practices of physical therapy.[32]

By 1954, Army physical therapists were again permanently assigned to U.S. Army hospitals in Korea (fig. 153). Clinics were housed in quonset huts as a general rule. At this time, U.S. Army troops in Japan were being gradually withdrawn and hospitals were being closed. By 1958, only the U.S. Army Hospital at Camp Zama, outside Tokyo, required a physical therapist. Physical therapists continued to be assigned to Okinawa.

Busy as the Army physical therapists were during the Korean War, they managed to get together for theaterwide professional meetings. Both in 1951 and in 1952, meetings were held in Japan in which Army and Air Force physical therapists discussed their professional problems. Later, when stationed in Korea, some of the Army physical therapists met with the United Nations physical therapists in order that they could be better informed as to what each was doing and pool information and ideas on effective treatment and training procedures.

Territory of Hawaii

Among the first of the new Army hospitals to be completed following World War II, Tripler General Hospital, Honolulu, T.H., was opened in August 1948. The following year, Aiea Naval Hospital closed, and the staff and patients were transferred to Tripler General Hospital.[33]

[31] Theilmann, E. M.: The Beginning of an Amputee Program in Pusan. Phys. Therapy Rev. 33: 306–307, June 1953.

[32] Ehlers, C.: Army Physical Therapists in Taegu and Pusan. Phys. Therapy Rev. 34: 523–524, October 1954.

[33] Annual Report of Medical Department Activities, Headquarters, Tripler General Hospital, Honolulu, T.H., 1949.



FIGURE 153--Physical therapy ward, 21st Station Hospital, Korea, 1954. 1st Lt. Rita Minogue, chief physical therapist.

Simultaneously, Air Force personnel declared their identification apart from the Army. Thus Tripler General Hospital became, for a while, essentially an Armed Forces hospital, jointly used and staffed by all three services.

In 1954, an increased incidence of poliomyelitis overtaxed both the facilities and the assigned physical therapy personnel. The situation was somewhat alleviated by the addition of a civilian physical therapist furnished by the National Foundation for Infantile Paralysis and the establishment of a joint Orthopedic-Physical Medicine Evaluation Clinic.

Because of the increased popularity of scuba-diving in the waters of the Pacific, the physical therapists at Tripler General Hospital were confronted with the treatment of patients with spinal cord involvement resulting from decompression sickness, one of the possible hazards of the sport. Muscle evaluations were used as a preliminary procedure to the symptomatic treatment which followed for paresis and paralysis usually observed in these patients. The facilitation techniques used by Rood appeared to be helpful to the patients in "locating" muscles, but vigorous exercise was found to be the most effective treatment measure.[34]

[34] McDowell, J., and Amizich, A. D.: Physical Therapy in the Treatment of Decompression Sickness With Spinal Involvement. Phys. Therapy Rev. 40: 737–740, October 1960.

SPECIAL ASSIGNMENTS

As part of the Army Medical Service standing ready to lend medical help in times of need, physical therapists have been called upon to render assistance in several different kinds of missions, as follows:

Greece

During a poliomyelitis epidemic in Greece in 1949, Capt. (later Lt. Col.) Mary L. Ben Dure was assigned by the Chief Surgeon of the European Command to the Public Health Division of the Economic Cooperation Administration's Mission to Greece. During her 6 weeks' tour she helped to establish a physical therapy clinic in a new wing of Athens' St. Sophia Hospital, assisted in caring for the 100 poliomyelitis patients in that hospital, and instructed personnel in physical therapeutic procedures. She worked with the Greek hospital staff as well as two Greek physical therapists borrowed from the Near East Foundation Rehabilitation Center.[35]

Saudi Arabia Mission

Early in 1957, King Ibn Saud of Saudi Arabia and his young son, Prince Mashhur paid a visit to the United States. During his brief stay in this country, Prince Mashhur received treatment and consultative care at Walter Reed General Hospital for a mild congenital deformity on his right side. At the time of his departure, a medical team was detached from Walter Reed General Hospital to accompany the patient to Saudi Arabia. This team consisted of Col. Aniello F. Mastellone, MC, Chief, Physical Medicine Service, 1st Lt. Howard A. Appleby, Jr., physical therapist, and Mr. Andrew Matzel, specialist in bracing and splinting. The mission of this team was the continuation of treatment already initiated and instruction of personnel surrounding the Prince as to future treatment. The team remained on duty in Saudi Arabia for 2 months.

Peru

In 1958, the U.S. Army Mission to Peru requested mobile training teams be assigned to the mission for the purpose of training personnel for the newly constructed 960-bed Central Military Hospital in Lima, Peru.[36] One of these teams consisted of Capt. (later Maj.) Rachel H. Adams and Sgt. R. G. DeFreitas, a physical therapy specialist. Their mission was to instruct and train Peruvian personnel in physical therapy procedures which would be needed in the operation of the new fully equipped physical medicine service.

During its 60-day stay, the team was received with a great deal of

[35] Ben Dure, M. L.: Physical Therapy Assistance for Poliomyelitis Cases in Greece. Phys. Therapy Rev. 30: 171–174, May 1950.

[36] Report of Mobile Medical Training Team (Peru), RCS: CSGPO–125, to Department of the Army, 20 June 1958.

professional interest, and enthusiasm was displayed by the 31 students as well as by other medical personnel of the hospital.

Flint, Michigan

During the fall of 1952, the city of Flint was stricken by a severe poliomyelitis epidemic. There were over 400 victims, 90 of whom had the bulbar spinal type. A team consisting of Captain Sacksteder, 1st Lt. Phyllis Ramsey, Sgt. John Lady, and Cpl. Luther Dever was detached from Percy Jones General Hospital, Battle Creek, for a period of 6 weeks to assist in this epidemic. Along with many others, these people worked long hours each day treating patients in hospitals and instructing families to care for patients who would be discharged early because of crowded hospital conditions.

Captain Sacksteder's tour was extended for an additional 2 weeks, during which she gave a course of instruction to nurses and also to members of families of the most seriously afflicted patients. From the latter course evolved the Polio Club of Flint, Mich., which received wide publicity because of its value in the rehabilitation of the patient and in the adjustment of family members to the changed situation.

PUBLICATIONS

The need for standardized blank forms for use by all government agencies included those which would constitute a part of the patient's permanent medical record. In 1949, a committee which included physical therapist representatives of the Army, Air Force, Navy, Veterans' Administration, and U.S. Public Health Service met to establish standard blank forms for use in muscle and nerve evaluation and joint motion measurements. The forms were completed in 1950 and accepted by the agencies.

In August 1954, the forms were revised and reissued and were still in use in 1960.[37] This standardization was helpful to physical evaluation boards, medical review boards, and to the patient's medical staff when interservice hospital transfers were made.

In March 1956, a manual on joint measurements was published.[38] This manual had originally been planned as a common effort in 1953, but was taken over by the Army when committee interest lagged. Since the manual contained information approved for use by the Air Force, it carries their designation number also.[39]

The last manual to be published during this period was a handbook for physical therapy specialists. Written by the Training Doctrine Department, Medical Field Service School, Fort Sam Houston, Tex., assisted by the physical therapy faculty, it was issued in August 1959.[40]

[37] SF 527, Manual Muscle Evaluation; SF 527a, Joint Motion Measurements; SF 528; Muscle and/or Nerve Evaluation—Manual and Electrical: Upper Extremity; SF 529, Muscle Evaluation—Trunk, Lower Extremity, Face.

[38] Department of the Army Technical Manual (TM) 8-640, March 1956.

[39] Air Force Publication 160-14-1, March 1956.

[40] Department of the Army Technical Manual (TM) 8-295, August 1959.

CHAPTER XVIII

Professional Services and Activities of Occupational Therapists April 1947 to January 1961

Lieutenant Colonel Myra L. McDaniel, USA (Ret.)

During the 14 years covered by this chapter, forces of change affected occupational therapists in the Army Medical Service and they in turn effected change in the services and activities in their professional field. It was a sequential set of forces which began in 1947 when the opportunity for military status became available. As civilian employees, the occupational therapists had participated on the military medical team but it was a professional relationship with little understanding of the total implications of military life. As members of the Women's Medical Specialist Corps, they became true members of the military family, experiencing the feelings of satisfaction or frustration in assignments, housing, uniform problems, or in the many policies and regulations that mandate military life. As members of the Army, they were part of the largest military training operation in the free world.

The next forces parallel each other in effect and it is difficult to say which has primary influence on the sequence: participation in specialized professional educational programs or changes and advances in the field of medicine.

Professional educational programs afforded information on changes and advances in the field of medicine. Conversely, changes and advances in the field of medicine many times required further education for understanding of the professional activities involved. Continual emphasis was placed on attending courses or conferences that would result in improvement in care of patients, the major focus of professional medical activity.

ORGANIZATION

The organizational and professional responsibilities of the physical medicine service and its five component sections were formally outlined in June 1949.[1] Four types of occupational therapy were identified for use in patient treatment:[2]

1. Functional. Designed for patients whose disability will be directly improved by its application.

[1] Army Regulations No. 40–705, 16 June 1949.

[2] When occupational therapy was included in the reconditioning service organization, in 1944, four types of occupational therapy were available: diversional therapy, functional therapy, industrial therapy, and prevocational training.

2. Psychiatric. Designed for patients with psychiatric disability.

3. Remedial. Designed for patients whose disabilities are directly affected by their emotional state.

4. Selected. Designed for patients whose specific treatment is handicapped due to poor adjustment to hospitalization.

Occupational therapy for tuberculous and psychiatric patients was to be coordinated by the chief of the physical medicine service with the chief of those respective services. Occupational therapy for all other patients was to be prescribed by the chief of physical medicine.

The definition of the four types of occupational therapy and the coordinated supervision set forth in the regulation provided the program control and supervision believed essential at that time by the physiatrist. The names given three of the types of occupational therapy have confounded and confused all who have used them. "Functional," "remedial," and "selective," terms born of expediency, are not self-explanatory. The terms "remedial" and "selective" were supplanted by the term "supportive" in some Army hospitals. Army occupational therapy was still burdened, however, by the medically obscure term "functional" occupational therapy.

By the mid-fifties, the scarcity of physiatrists resulted in the occupational therapists receiving many patient referrals directly from medical officers on the orthopedic, neurological, and medical services. Some referrals, particularly those concerned with neuromuscular conditions, still came from the physiatrist who was also available for consultation with the occupational therapist on problems encountered in the treatment of any of the patients (fig. 154).

By December 1960, physical medicine services directed by a physiatrist were to be found in only five of the seven general hospitals in the United States[3] and in Tripler General Hospital, Honolulu, T.H. In the other general hospitals, station hospitals, and hospitals overseas, selection of the medical director for occupational therapy was made by the commanding officer. In the majority of cases, an orthopedic surgeon was so designated.

CONTINENTAL UNITED STATES AND OVERSEA COMMANDS

Continental United States

Within the period covered by this chapter, there was considerable fluctuation in the number of occupational therapy clinics in Army hospitals. Before the Korean War, there was the decrease to be expected in a peacetime period; during the war, the necessary inevitable increase; and following the war, again a decrease to meet the reduced needs of peacetime operations.

[3] Brooke General Hospital, Fort Sam Houston, Tex., Fitzsimons General Hospital, Denver, Colo., Letterman General Hospital, San Francisco, Calif., Madigan General Hospital, Fort Lewis, Wash., and Walter Reed General Hospital, Washington, D.C.



FIGURE 154—Col. Aniello F. Mastellone, MC, Chief, Physical Medicine Service, Fitzsimons General Hospital, Denver, Colo., checks the scapular motion of a patient in occupational therapy while 1st Lt. Virginia Barr observes.

A number of modern vertically constructed station hospitals were built during the latter half of the period covered by this chapter to replace the horizontally constructed cantonment-type buildings. Occupational therapy clinics were included in all but one of these new hospitals where the minimum capacity was at least 250 beds. The exception was Ireland Army Hospital, Fort Knox, Ky., constructed during

1956. Here, there had been no occupational therapy clinic since 1948 and the need for space was determined to be so acute by the Commanding Officer, Col. Kenneth Brewer, MC, that the area designed for occupational therapy was assigned to another service.[4]

In October 1956, the Surgeon, Third U.S. Army, suggested to The Surgeon General, Maj. Gen. Silas B. Hays, that occupational therapy be eliminated in Class I hospitals[5] and that occupational therapy spaces be physically eliminated in the new hospitals at Fort Benning, Ga., and Fort Bragg, N.C. His suggestion was based not only on the precedent set by Ireland Army Hospital, but he questioned the need for occupational therapy in view of the type of patient treated and the relatively short hospitalization period in Class I hospitals. When General Hays replied that occupational therapy would be continued in those hospitals in which it was already established in the Third U.S. Army Area, the Third Army surgeon then suggested that the programs be restricted to bedside work and again proposed that no provision for space be made in any new hospitals or modifications of existing ones. A letter from General Hays to the Third Army surgeon, reiterated the earlier decision that space for occupational therapy clinics would continue to be provided in new hospitals and approved the authorization for one occupational therapist space each in the hospitals at Fort Benning, Fort Bragg, Fort Campbell, Ky., and Fort Jackson, S.C.[6]

Of great impact on the total medical rehabilitation program in Army hospitals in 1952 was an Executive order which gave to the Veterans' Administration the responsibility for hospitalization of those members or former members of the uniformed services who had chronic diseases.[7] Chronic diseases were "construed to include chronic arthritis, malignancy, psychiatric or neuropsychiatric disorder, neurological disabilities, poliomyelitis with disability residuals and degenerative disease of the nervous system, severe injuries to the nervous system including quadriplegics, hemiplegics, and paraplegics, tuberculosis, blindness and deafness requiring definitive rehabilitation, major amputees, and such other disease" as might later be defined. Early medical treatment could be administered in the Army hospital until the chronicity of the disease or condition was established, then the patient would be transferred to a Veterans' Administration hospital or domiciliary.

The specific effect of this on occupational therapy was that the challenge and experience of planning and following through on a high percentage of long range and complete rehabilitation programs were removed. This lack of treatment experience throughout ensuing years resulted in some Army-trained occupational therapists leaving the ser-

[4] An occupational therapy clinic was established at Ireland Army Hospital, Fort Knox, Ky., in the fall of 1962.

[5] Hospitals under the supervision of Commanding Generals of Army Commands, not under the direct control of The Surgeon General.

[6] Letter, Lt. Col. Myra L. McDaniel, AMSC (OT), to Colonel Lee, 5 June 1957, subject: Information for Annual Historical Report, FY 1957, p. 3.

[7] Executive Order No. 10400, 27 Sept. 1952.

vice to obtain that experience in civilian hospitals and institutions. The shortened length of patient stay, however, did not negate the Army occupational therapists' professional responsibility to assess the needs of these patients, initiate treatment, or to fabricate devices to assist these patients to gain as much independence as they could while in the Army hospital.

In May 1954, as a reinforcement measure of the previously mentioned Executive order, a statement of policy regarding the utilization of physical medicine was published.[8] Three provisions in that letter were particularly pertinent to occupational therapy:

> a. Large comprehensive physical medicine services will be established only in Class II hospitals and in appropriate Class I hospitals that are designated as specialized treatment centers.
>
> * * * * * * *
>
> c. Occupational therapists will be assigned only to Class II hospitals and to Class I hospitals that are designated as specialized treatment centers in psychiatry, tuberculosis, orthopedics and/or neurosurgery.
>
> d. A pilot study will be made at selected Army hospitals to determine the feasibility of eliminating physical reconditioning as a special branch with transfer of this responsibility to physical therapy and occupational therapy branches.[9]

In compliance with this policy, Class I hospitals not designated as specialized treatment centers were notified that occupational therapy clinics were to be phased out through personnel attrition.[10] No occupational therapy clinics had been closed by June 1955 when the designation of Class I hospitals as specialized treatment centers was discontinued. This action made those provisions of the administrative letter which pertained to Class I specialized treatment centers obsolete. The surgeons in each Army Command were then notified by General Hays to base their requirements for occupational therapists upon existing facilities, equipment, and projected workloads.[11]

Overseas

Occupational therapists had been assigned in the Territory of Hawaii since World War II, but it was not until 1949 that one was assigned to the 98th General Hospital in Germany, and not until 1951 that one was assigned to the 141st General Hospital in Japan. The latter assign-

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[8] Administrative Letter No. 40–17, Office of The Surgeon General, 6 May 1954.

[9] (1) In 1955, physical reconditioning officers were assigned in other areas within the scope of the Medical Service Corps. Physical reconditioning enlisted personnel and activities were placed under the supervision of the chief of physical or occupational therapy depending upon the kind of treatment program that was indicated, for example, if with neuropsychiatric patients, then occupational therapy was responsible for physical reconditioning activities; if an exercise program, then physical therapy was responsible. (Summary of Major Events and Problems, The Surgeon General, to Chief of Military History, Special Staff, for fiscal year 1955.) (2) A Class II hospital is under the direct control of The Surgeon General.

[10] Office Memorandum, Chief, Occupational Therapy Branch, to Chief Physical Medicine Consultant, 23 June 1955, subject: 1954–1955 Historical Report (OT).

[11] Letter, Maj. Gen. S. B. Hays, The Surgeon General, to Brig. Gen. Crawford F. Sams, MC, Surgeon, First Army, 14 June 1955. (Identical letter sent to each Area Surgeon in the continental United States and the Military District of Washington.)

ment was terminated in 1952 because of a compassionate reason and the shortage of personnel precluded further assignments of occupational therapists to the Far East Command.

The patient load in the oversea hospitals did not differ in variety from that in the United States. In Germany, hospital centers were established for the treatment of orthopedic and neuropsychiatric patients and it was to those centers that occupational therapists were generally assigned. Both ward and clinic programs were maintained. An additional program was planned for patients with tuberculosis. Although these patients were usually evacuated to the Zone of Interior for treatment at Fitzsimons General Hospital, Denver, Colo. or Valley Forge General Hospital, Phoenixville, Pa., in accordance with the 120-day evacuation policy, occupational therapy was generally offered while they were confined to the oversea hospital. In the early fifties, a ward program designed specifically for patients with hepatitis was conducted by the occupational therapists at the 98th General Hospital in Munich.

Treatment programs overseas did not differ greatly from those used in the United States. Environmental factors in some instances in Germany, however, did affect the activities used.[12] In 1955, many of the patients at the 98th General Hospital, then located in Neubrücke, were either single or did not have their families with them. They were not stimulated to make the more traditional occupational therapy projects—lamps, bookends, or rugs—which would usually be enjoyed or needed by members of their households. Not only was the stimulus for creating these projects decreased, but packing and mailing factors were criteria which affected a project's size and weight. Too, many times, the soldier was far removed from his usual pastimes which might normally stimulate an interest and need for specific projects. The problem was further complicated in that the soldier had little or no space to keep such items in his wall locker or footlocker. To many a soldier coming directly to the hospital from field duty, making such projects appeared to be completely divergent from anything to which he had become accustomed. Many of the men were restless and did not have the patience to complete projects of their own.

With the soldiers having less motivation for the projects and activities which were usually of interest to patients in occupational therapy, projects were devised which could be worked on by a number of patients and which were used in the hospital or for the enjoyment and pleasure of other patients or hospital personnel. Examples of community projects made at the 98th General Hospital were wall hangings for the chapel and the library, picture frames for watercolor reprints hung in the ward day rooms, and the printing of table napkins for an adjacent military installation.

At the 98th General Hospital, in 1956, Col. Ernest A. Brav, MC, Chief of Orthopedic Surgery, did a series of approximately 100 cases

[12] Information furnished to the author by Maj. Barbara M. Knickerbocker, AMSC, 98th General Hospital. (See Major Knickerbocker's unpublished report, "What Constitutes Treatment?")

of Putti-Platt repairs for shoulder dislocation.[13] An occupational therapy program, designed to meet the needs of these patients, was developed by Capt. Barbara Knickerbocker, chief occupational therapist.[14]

SPECIAL ACTIVITY PROGRAMS AND TECHNIQUES

In medicine, new and improved drugs or new surgical procedures change the character and timespan of treatment programs. As change occurs, this is reflected in the occupational therapy programs although the treatment tools—the therapeutic relationship and the activity—remain unchanged. The focus on activity has not changed, it was and is the medium through which the occupational therapist not only works to achieve his treatment objective but also establishes the therapeutic relationship necessary to successful treatment.

Activities of Daily Living

The term "ADL" (activities of daily living) came into popular usage in the fifties. The purpose of the program in activities of daily living was to make the permanently physically limited patients as independent as possible in their daily personal activities: eating, dressing, personal hygiene, communication (writing and telephoning), handling money, and other necessary functions (fig. 155). The basic treatment concepts of this kind of program was not new. In the Army during World War II, a similar program had been used in the treatment of amputees for training them in the use of their prostheses: "Ample opportunity should be given each patient to practice with eating utensils, dressing, shaving, and such common accoutrements of living as faucets, door knobs, keys, coins, and papers." [15] Comparable programs had been carried on in civilian life for patients with brain damage and poliomyelitis.

The benefit of training in activities of daily living was that the patients were directly learning to do the self-care activities that they needed. Crafts could be used to improve coordination and to increase strength or range of motion of patients whose disabilities were of a temporary nature, but actual training in how to feed themselves, how to use what limited motion they had to dress themselves, and how to accomplish the other necessary hand activities, were essential requirements for the patients who needed assistance to regain some measure of personal independence.

The majority of patients trained in the activities of daily living programs were military, either on active or retired status. Few military

[13] The purpose of the Putti-Platt operation is to prevent the arm from rotating outward to its most vulnerable point for dislocation. In this surgical procedure, the subscapularis muscle is divided at one point 1 inch medially from its insertion and the lateral portion is attached to the anterior rim of the glenoid cavity of the scapula. The remaining portion is lapped over this in a double-breasted manner and sutured to tissues in the region of the greater tuberosity and the bicipital groove of the humerus.

[14] An occupational therapy program for patients with Putti-Platt repairs was also developed at Fitzsimons General Hospital, Denver, Colo., by Maj. Kathryn Maurice in 1951.

[15] War Department Technical Manual (TM) 8-291, December 1944.



FIGURE 155—Activities of daily living. (Top) Young bilateral amputee gains useful experience with the telephone. (Bottom) Use of a Montessori-type training board to teach buttoning and unbuttoning techniques.

dependents required retraining in household activities but when this was indicated, it was done primarily through simulated activity. Army occupational therapy clinics, unlike civilian rehabilitation centers, did not have the facilities for realistic practice (kitchens, beds, bathrooms) nor was there a great need for them. Some work simplification techniques could be explained and demonstrated even though much of the equipment with which homemaking worksaving techniques could be practiced was not available.

In conjunction with many of the activities of daily living programs, it was necessary to design and fabricate self-help devices since many patients, for example, those with brain or spinal cord injuries, were unable to initiate or manage an activity without the assistance of special equipment. Devices were designed for temporary or permanent use (fig. 156).

Work Therapy

The first work therapy program to be supervised by occupational therapists since World War II was begun in 1956 at Letterman General Hospital, San Francisco, Calif.[16] It was planned specifically to further the rehabilitation of convalescing neuropsychiatric patients by placing them in supervised hospital job assignments. During its first 12 months of operation, over 200 patients participated in the program. The average number of patients assigned to jobs at any given time was 36.[17] This particular kind of program was used during World War II and at that time was called "industrial therapy." Work therapy during that period implied paid employment of hospital patients on industry-type jobs (ch. IX, pp. 326–331).

Work therapy programs available for assignment of medical, surgical, and psychiatric patients were later developed at Brooke General Hospital, Fort Sam Houston, Tex., and Walter Reed General Hospital, Washington D.C., as were programs for patients with tuberculosis at Fitzsimons and Valley Forge General Hospitals.

The primary purpose of these programs was that the job assignments be of therapeutic value and of interest to the patients. The work performed was considered a by-product and secondary to the treatment aspect. It was essential, however, that there be a realistic amount of work to be done so that the patients would get job satisfaction from real accomplishment (fig. 157). The programs provided a method of accurately determining the physical tolerance and social adjustability of the patients and their capacity to work with or overcome a physical disability or mental illness. The occupational therapist in charge of the

[16] In 1949, a representative of the Neuropsychiatric Consultants Division, Surgeon General's Office, had recommended that industrial therapy programs for neuropsychiatric patients be established in Army hospitals. The recommendation was never approved because of the shortage of occupational therapists. (Disposition Form, Chief, NP Service (Lt. Col. E. R. Inwood, MC), [Walter Reed General Hospital], to Chief, Physical Medicine, [Surgeon General's Office], 10 Nov. 1949, subject: Industrial Therapy, with attached correspondence.)

[17] Sheehan, H. J., and Viesko, B.: Work Therapy in an Army Hospital. Am. J. Occup. Therapy 12: 176, 188–189, July–August 1958.



FIGURE 156—Splints and devices used in activities of daily living. (Top) Plastic opponens splint maintains thumb in functional position for activity. (Bottom) Self-help device enables patient to brush teeth. Hand device can also be adapted for fork or spoon insertion so that patients can eat more independently.

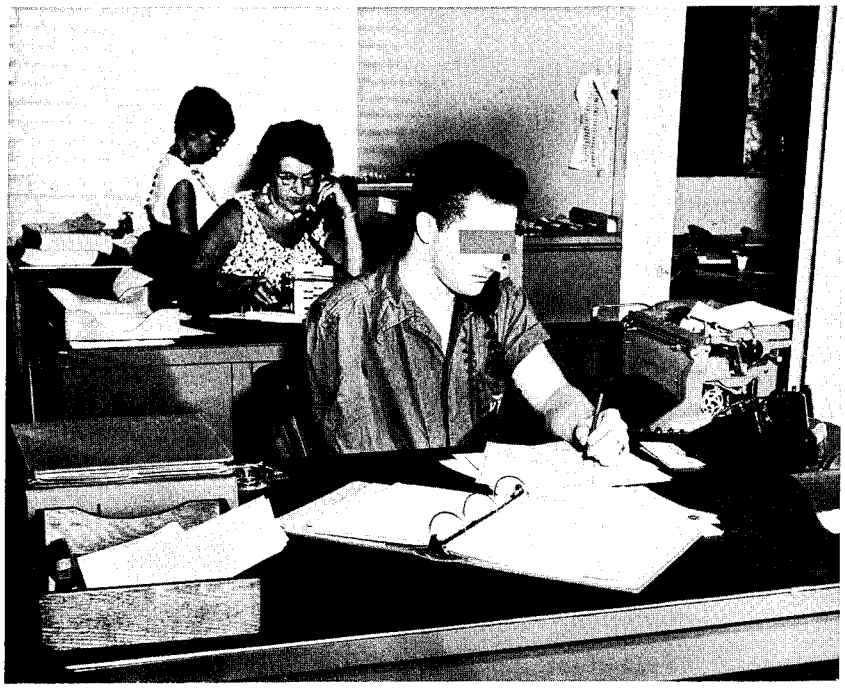


FIGURE 157—Work therapy constructively occupying patient who is waiting for his upper extremity prosthesis.

work therapy program periodically conferred with the patients and job supervisors. His report on the patient's progress in these reality testing situations included not only comments on the patient's emotional reactions but also gave evidence as to the patient's success in meeting the physical and social demands of the job. The report was available to the medical officer to use in the evaluation of the patients for disposition from the hospital.

Facilitation Techniques

The treatment of neuromuscular dysfunction had remained a fairly routine procedure until new methods for treating neuromuscular dysfunction were developed by Herman Kabat, M.D., Margaret Knott, R.P.T., Karel Bobath, M.D., Berta Bobath, F.C.S.P., Margaret Rood, O.T.R., R.P.T., and Signe Brunnstrom, P.T.[18] Although each proposed a different and specific method of treatment, these could be and were used in combination to obtain a treatment objective. For example, the exterostimulation concept of Rood (the stroking, brushing, pound-

[18] (1) See ch. XVII, section on brain injuries for brief description of treatment concept. (2) R.P.T., Registered Physical Therapist; F.C.S.P., Fellow Chartered Society of Physiotherapy; O.T.R., Occupational Therapist Registered; P.T., Physical Therapist.

ing, or application of ice to the affected part) could be used by the occupational therapist to facilitate motion and could be followed by work on a wood project using the heavy resistance techniques developed by Kabat.

These new methods were not routinely used by all Army occupational therapists but were used for selected patients with neuromuscular disorders. Statistical data concerning the treatment of these selected patients were not accumulated. This clouded immediate or complete acceptance of the new methods. Without factual case report substantiation there could be no basis for assuming that the new methods would prove more beneficial to the patients than the old. The methods were complicated involving precise techniques and were neither easily nor quickly learned.

The challenge to learn the different techniques was met through participation in special courses, specific workshops sponsored by local physical and occupational therapy associations, or through staff inservice educational programs given by a physical or occupational therapist who had attended one of the special courses.

TREATMENT OF SPECIFIC CONDITIONS

To avoid repetition of specialized treatment program material presented previously (ch. IX, p. 287), the treatment of specific conditions which follows will be concerned only with those conditions or disorders in which change or addition to the treatment program was noted. One diagnostic entity—poliomyelitis—was virtually eliminated after 1956 following the successful development and use of the Salk vaccine. Because of the crippling nature of poliomyelitis, very carefully planned and supervised treatment programs had been necessary. These programs were conducted at Army general hospitals by occupational and physical therapists who had received specialized training at the Georgia Warm Springs Foundation, Warm Springs, Ga.

Amputations

Spurred by the need of the Army to supply prostheses for the large number of soldiers who suffered amputation of one or more limbs in World War II, early in the spring of 1945 the National Academy of Sciences began a research program devoted to the development of prostheses. Initially, it had been believed that the solution to this problem was simply to devise better mechanisms and apply new materials. It was soon realized that fundamental biomechanical studies were essential if realistic design criteria were to be developed. The responsibility for the studies was assigned to the University of California which established two laboratories, one for the study of the upper extremity on the Berkeley campus, and one for the study of the lower extremity on the Los Angeles campus. In 1948, an independent evaluation laboratory was established at New York University to test the

usefulness of the devices and techniques which were being developed.

By 1952, sufficient knowledge regarding upper extremity prosthetic appliances had been accumulated to radically change previous concepts of management of the arm amputee. In general, amputations instead of being performed in certain selected sites could be done at any level because suitable devices and control techniques had been developed to fit every level of amputation. In previous years, improvements in prosthetic fittings many times had not kept pace with improvements in surgical techniques. New knowledge concerning the functions of the extremities was accumulated from the research program. In order to transmit this knowledge to clinic teams, short-term courses were established for physicians, occupational and physical therapists, and prosthetists.[19]

The concept of the clinic team was not new,[20] but the education of teams through special courses was. The more thorough understanding of each team member's role and function resulted in a much closer relationship between the physician, the physical therapist, the occupational therapist, and the prosthetist and improved care for the amputee.

As during World War II, the occupational therapist continued to do the checkout of the upper extremity prosthesis and to provide activities for the amputee which would aid him in achieving skill and dexterity in the activities of daily living in addition to retraining him in other skills which would be essential to his job. While the majority of the amputee patient load was military, there were some congenital cases treated by occupational therapists.

In the late forties, interest in the kineplasty amputation was revived. This surgical procedure, conceived in 1896, had alternating periods of popularity and disfavor.[21] A study to determine the value of the kineplasty procedure was conducted at Walter Reed Army Medical Center, Washington, D.C., over a 6-year period, 1948 through 1953,[22] by members of the Orthopedic Service (Colonel Brav, Col. August W. Spittler, MC, Lt. Col. William F. MacDonald, MC, and Maj. George H. Woodard, MC), the Physical Medicine Service (Col. Harold B. Luscombe, MC, Col. John H. Kuitert, MC, and Maj. Frederick E. Vultee, Jr., MC), and the Army Prosthetics Research Laboratory (Lt. Col. Maurice J. Fletcher, MSC, and Fred Leonard, Ph. D.).

The candidate for the kineplasty procedure was given a conventional prosthesis for a 6-week trial period before the kineplasty was performed. The occupational therapist instructed him in its control and trained him in its proper use to develop maximum skill in prehension. Since there was little difference between the kineplastic prosthesis and the

[19] University of California, Los Angeles, Calif.; New York University, New York, N.Y.; and Northwestern University, Chicago, Ill.

[20] See footnote 15, p. 573. "The surgeon, the limb manufacturer, the limb fitter, the occupational therapist, the physical therapist, and the amputee, are all combining their knowledge, experience and resourcefulness to discover and develop new methods and improve appliances for the amputee" (p. 30).

[21] The kineplasty procedure is described in chapter XVII, p. 551.

[22] Brav, E. A., et al.: Kineplasty; An End-Result Study. J. Bone & Joint Surg. 39-A: 59-76, January 1957.

conventional device, it was believed the 6-week trial period was worthwhile.[23] Having been trained in the use of the conventional prosthesis, it was found that the patient rapidly learned to use the kineplastic controls and in most cases only a few additional days of training were required.

The criterion for success of the procedure was whether or not the patient was wearing his prosthesis at the end of a year or more. The results of the study showed that 61.7 percent of the patients had worn their prostheses for that period. The percentage within the kineplasty groups were: biceps kineplasty, 73.1 and pectoral kineplasty, 31.0 (fig. 158). In general, the authors of the study believed that kineplasty operations would be applicable to only a relatively small percentage of arm amputees and should be limited to carefully selected patients. It was not advised for amputee patients before adolescence and was found usually not cosmetically acceptable to women.

Brain Injuries

In the early fifties, the Physical Medicine Service at Letterman General Hospital made a study of the patterns of motor recovery in 70 brain-injured patients.[24] Four levels of motor recovery were determined (these were ranked from low to high level): gross extremity synergy, restored phasic activity at second joints, restored distal muscle function, and restored fixator function of proximal muscles.

The use of occupational therapy during the early levels of the recovery cycle was definitely contraindicated as "Muscle retraining * * * was directed exclusively toward restoration of the flexor groups in the leg and of the extensor groups in the arm. In the arm, all stimuli which were found to excite increased activity in the flexor muscles therefore were rigidly excluded." [25]

Occupational therapy was introduced into the program during the third level of recovery—the restoration of distal muscle function. As discussed by those participating in the study at Letterman General Hospital—

> * * * patients had to be trained to perform extension and abduction movements of individual digits. When they had mastered this ability, many still had difficulty in using the hand for skilled activities because of an inability to perform rapid alternations in movement, or because of persistent impairment of joint sensibility. We found that occupational therapy had most to offer as a means of overcoming these deficits. Because of the delayed return in supinator function and also in the fixator muscles of the proximal extremity, the occupational therapist was always particular about prior fixation of the arm at the shoulder and elbow. Hence, no activity was recommended which demanded the use of the arm in an unsupported position. The occupational therapist was also

[23] If, at the end of that trial period, the candidate preferred the conventional prosthesis—the kineplasty procedure was not performed. The patient was never persuaded to accept kineplasty nor was kineplasty performed if the team felt it inadvisable.

[24] Treanor, W. J., and Psaki, R. C.: Patterns of Restitution of Motor Function. Phys. Therapy Rev. 34: 610–617, December 1954.

[25] Treanor, W. J., Cole, O. M., and Dabato, R.: Selective Reeducation and the Use of Assistive Devices. Phys. Therapy Rev. 34: 620, December 1954.

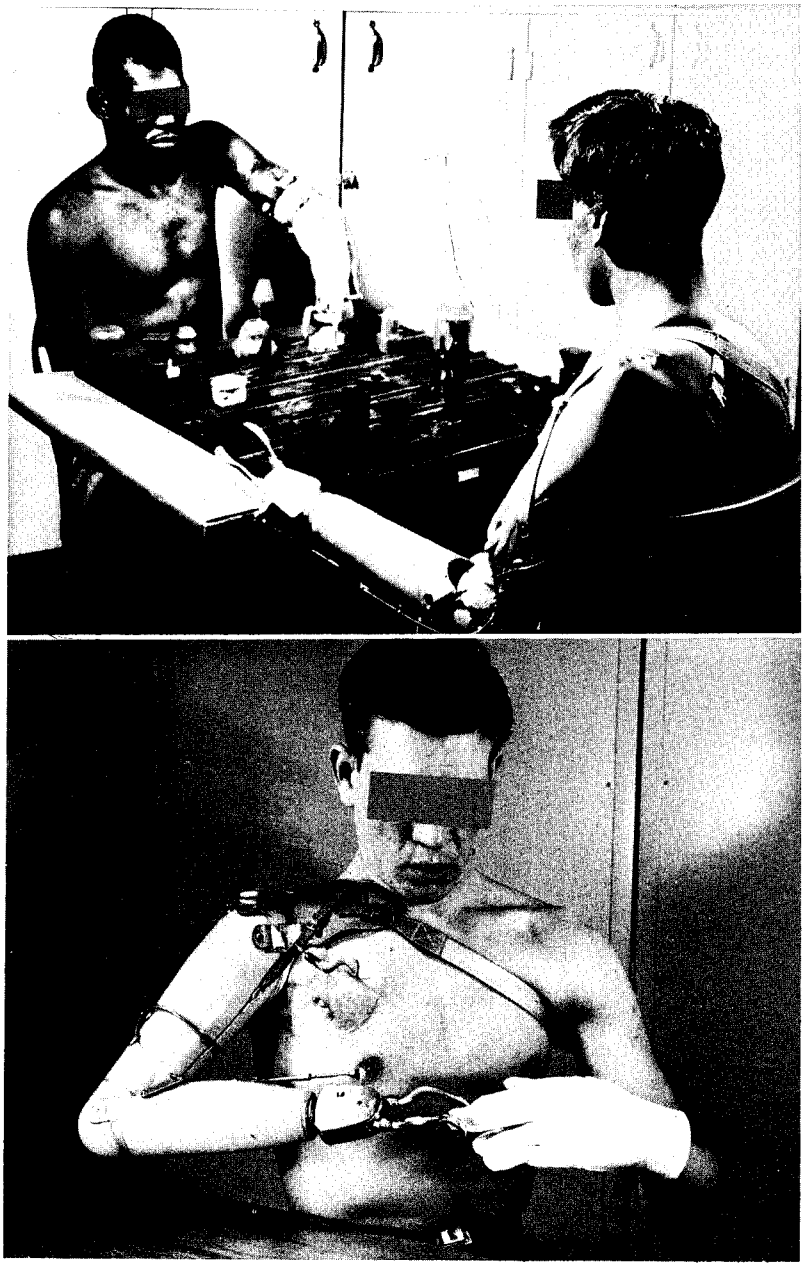


FIGURE 158—Kineplastic prostheses. (Top) Biceps kineplastic prostheses. (Bottom) Pectoral kineplastic prosthesis.

careful to exclude hand activities, such as squeezing rubber balls and handling doorknobs, which further accentuated earlier return in finger flexors. Patients were instructed in methods of using the less involved hand for strengthening of finger and thumb extension on the more involved side.[26]

Enthusiasm and interest in this particular program of selective muscle re-education decreased abruptly when the initiators of the study left Letterman General Hospital. At this same time, however, increased understanding of the purpose and use of the different facilitation techniques gave new impetus to the programs for the brain-injured patients in the Army general hospital.

Psychiatric Disorders

The occupational therapist who specialized in the treatment of psychiatric patients saw two major changes occur in the patient population of this group in Army hospitals during the years covered by this chapter. One change was in the drastic reduction in numbers and in the type of open ward patients. Those hospitalized for psychoneurosis, emotional incapability reactions, and character behavior disorders were replaced by closed ward patients convalescing from psychoses and other affective disorders. The other change was noticeable in the closed ward patient group as chemotherapy gradually replaced the extensive use of the somatic therapies (electroshock therapy or insulin shock therapy). Patients become more responsive to environmental influences and more accessible to therapeutic endeavor.

The decrease in the numbers of open ward patients was directly attributable to the work of the psychiatric staffs in the mental hygiene facilities located on Army posts which had large troop populations. The psychiatrists treated the soldier on an outpatient basis in the soldier's own unit area. This early recognition and prompt management of emotional and behavioral problems served to reduce noneffectiveness and afforded the unit more understanding and thus better management of the soldier. Hospitalization, looked upon by the soldier as a secondary gain and a means of removal from a difficult situation, was limited essentially to soldiers requiring closed ward care. The patients with psychoses constituted the major mental health problem in the military hospital.

In the middle forties, treatment principles were established for the different diagnostic conditions. Specific kinds of activities were delineated by means of which the reduction of gross symptomatology might be achieved. By 1950, the concept of a total push program had become firmly entrenched within the departments of neuropsychiatry in Army general hospitals. By the wards and on the hour, patients were escorted to the occupational therapy clinic, the physical reconditioning gymnasium or pool, or the Red Cross recreational hall or dayroom. On the next hour, the groups were shifted to another activity. The prevailing

[26] Ibid., p. 623.



FIGURE 159—Art activity by neuropsychiatric patients, Walter Reed General Hospital, Washington, D.C. 1st Lt. Danessa Wise observes.

concept seemed to be that every closed ward patient should be given the opportunity to go to the occupational therapy clinic. "Work has long been recognized as a useful means of diverting the mind from its troubles and anxieties. Occupational therapy employs this age-old concept in the treatment of nervous and mental disorders." [27]

In the late fifties, interest in acquiring a dynamic orientation and renewed recognition of the significance of the therapeutic relationship influenced the occupational therapists' thinking about the use of the traditional modalities. The activity per se tended to lose some of its importance and became more of a basis for bridging or developing the therapeutic relationship (fig. 159). Less project planning was done for the patient. Emphasis was placed on the significant verbal and nonverbal interactions of the patient. More concern was focused on understanding why and how the patient did or did not participate. However, when there were heavy caseloads (30 or more patients per occupational therapist) patient-therapist interactions were diminished, and the resultant observations were inclined to be superficial and thus of little use to the patient's psychiatrist. The limitation of the hourly schedule provided little opportunity to work with the withdrawn and

[27] See footnote 15, p. 573.

uncommunicative patient. The demanding patient was usually successful in gaining the occupational therapist's full attention.

Few occupational therapists had the opportunity to limit the size of the patient groups with whom they were working in order to realize the maximum capability of the staff and to utilize working areas most effectively. With groups scheduled every hour, it was also extremely difficult for the occupational therapists to arrange time for conferences or discussion of patients. To combat this problem, occupational therapists, in some instances, were assigned to certain wards or psychiatrists with the responsibility of attending ward rounds, intake conferences, and presenting verbal or written progress notes on those patients as required. In this way, better continuity was maintained in observing and reporting on patient attitudes and behavior.

In 1956, a milieu therapy [28] ward was opened at Walter Reed General Hospital to explore the possibilities for more effective treatment of schizophrenia in young military personnel.[29] The number of patients was limited to 10 in order to afford a maximum opportunity to increase their abilities to form satisfactory relationships and to provide experiences in group living which would increase their social skills. A similar program was established at Valley Forge General Hospital in 1959.

Occupational therapy, utilized with the milieu therapy program in a 1-hour daily clinic program, provided an opportunity in which the occupational therapists could work closely with the patient as well as with the psychiatric team. At the weekly staff conferences, attended by the entire staff concerned with the milieu therapy project, the occupational therapist reported on patients' behavior while in the clinic.[30] Written reports were also submitted, and these, together with reports prepared by the psychiatric nurse and the neuropsychiatric technicians, provided the psychiatrist with a complete report of each patient's behavior in the different environmental elements in which he was observed.

Pulmonary Tuberculosis

During World War I and in the years that followed, tuberculosis was the cause of a tremendous loss of manpower to the Army and of enormous expense to the country in terms of disability pensions and hospital care. In World War II, careful screening before induction greatly reduced the manpower losses due to tuberculosis, but treatment of the disease was never satisfactory. The relapse rate after any therapeutic method was so high that it was not practical to return the afflicted soldiers to military duty. All patients with active disease were therefore permanently separated or retired from service.

[28] "Milieu therapy in psychiatry refers to procedures directed toward modification of the environmental part of the patient-environment process with a view to facilitating more satisfactory patterns of interaction—that is, transactions or relationships—in this process. It thus includes all of the field of psychiatric therapy outside of those methods designed to modify the functions of the patient otherwise than through communication broadly conceived." (Rioch, D. McK., and Stanton, A. H.: Milieu Therapy. A. Res. Nerv. & Ment. Dis. Proc.: 31: 94, 1953.)

[29] Artiss, K. L., et al.: The Symptom as Communication in Schizophrenia. New York: Grune & Strattan, Inc., 1959.

[30] Rodeman, Charlotte R.: The Nursing Service in Milieu Therapy. Washington: U.S. Government Printing Office, 1960, p. 18.

> Over the past 10 years, this situation has completely altered. With the introduction of specific drug therapy and the development of new surgical techniques, it has become possible to treat successfully and to return to active duty more than 90 percent of well-trained, career-motivated soldiers either immediately after treatment or after temporary retirement. In more than 3,000 military patients treated in this manner, the relapse rate has been less than 2 percent, with a resultant savings to the Government of more than a million dollars annually.[31]

Occupational therapy programs for the treatment of the tuberculous patient underwent radical change in the period from 1947 to 1961. This change was predicated on the medical advancements in the development and increased use of chemotherapy. Early in this period, all treatment was based on an ultraconservative regimen of bed rest. This was in abrupt contrast to the total ambulation and activity policies upon which treatment was based in the late fifties.

Occupational therapy changed from a limited, carefully graded program to an early active ambulation program with virtually no limitation except for Class I patients [32] in the use of occupational therapy activities. Instead of developing the patient's work tolerance *during the later stages* of rehabilitation, the change in emphasis was to maintain work tolerance and muscle tone *throughout hospitalization.*

Policies were changed to permit patients with positive sputums to attend occupational therapy clinics in contrast to their former restriction to ward programs necessitated by their prolonged confinement in bed (fig. 160). In a daily clinic program, the occupational therapist could help the patient over a much longer period of time than was possible in a ward program. In a 1958 survey made of the ward programs for tuberculous patients at Valley Forge General Hospital, it was estimated that the occupational therapist was able to spend an average of 5 minutes with each ward patient twice a week.

A 1960 report on 105 tuberculous patients treated at Fitzsimons General Hospital dramatically illustrates the benefits accruing from a combined program of chemotherapy, graduated active physical rehabilitation, and reconditioning.[33] Of the 105 patients so treated, 100 were returned to full military duty. The average duration of hospitalization was 12 months.

The program at Fitzsimons General Hospital is described as follows:[34]

> Within two to four weeks of admission, following initial workup and institution of chemotherapy, patients were started on regular occupational therapy and educational programs. In addition, when asymptomatic, they were expected to participate in active calisthenics for fifteen minutes per day on a five-day

[31] Annual Report of The Surgeon General, U.S. Army, Fiscal Year 1960, Washington: U.S. Government Printing Office, 1961, pp. 14–15.

[32] For definition of classifications, see Diagnostic Standards and Classifications, 1940 and 1950 Editions, National Tuberculosis Association, New York, N.Y.

[33] Weir, J. A., Schless, J. M., O'Connor, L. E., and Weiser, O. L.: Results on 105 Tuberculosis Patients at Fitzsimons General Hospital Treated With More Adequate Combined Chemotherapy and Active Physical Rehabilitation. In Transactions of the 19th Conference on the Chemotherapy of Tuberculosis, 8–11 Feb. 1960, pp. 78–84.

[34] Ibid., p. 79.



FIGURE 160—Occupational therapy with pulmonary tuberculosis patients. (Top) Leatherworking and metalworking supervised by Capt. Eileen O'Brien are but a few of the activities available to tuberculous patients, Fitzsimons General Hospital, Denver, Colo. (Bottom) Furniture upholstery activities benefit both the patient and the hospital, Valley Forge General Hospital, Phoenixville, Pa.

week basis. This was usually started in from two to four weeks of admission as above, but occasionally in patients with far advanced disease and large cavities the active calisthenics were not started until the end of two months although in others in the same category, particularly later in the program, these were introduced initially. The calisthenics were at about the level of activity given to regular troops during their basic training period. Rest periods for these patients were eliminated and maintenance of bedside and ward areas were accomplished by the patients. When the patients reached the non-communicable stage, without regard to X-ray change, active sports were added to the program, including basketball, volley ball, golf, bowling, and swimming. A minimum of one hour per day for five days a week was required. However, in practice, due to patient enthusiasm, most patients received about two hours a day of active, competitive sports. In addition at the time the non-communicable stage was reached on-the-job training was added to the program; the patient being given a job on the post commensurate with his skills and training. He was then gainfully employed on a full eight-hour-a-day schedule for several months prior to his discharge. Previously prolonged periods of convalescent leave were discontinued and patients returned to active duty status at about the time they reached the point of inactivity by National Tuberculosis Association Standards, with chemotherapy being continued under medical supervision for several months afterwards.

At Fitzsimons General Hospital, assignment to the work therapy program was made by the occupational therapist.[35] At Valley Forge General Hospital, work assignments were made by the supervisory personnel of the Medical Holding Detachment. In both hospitals, the calisthenics and sports programs were conducted by physical reconditioning specialists under the administrative supervision of the occupational therapist.

In addition to following a rehabilitation program very similar in concept to that of Fitzsimons General Hospital, the occupational therapists at Valley Forge General Hospital from 1958 to 1960 stressed the use of group activities as a means of meeting the adjustment problems of the tuberculous men and women patients (fig. 161).[36] These group activities were planned not only to develop group cohesion through experiences in working and learning together, but also to have the group assume the myriad responsibilities involved in the conduct of the activities. Thus, if it were a style show or an exhibit of patient-made articles or a program of craft demonstrations by individual patients, the patients organized and conducted the programs. The occupational therapist was either directive or nondirective as needed for the particular situation, but in all instances, provided a receptive, flexible environment in which social interaction could take place. It was repeatedly demonstrated that the group activity approach was exceedingly beneficial to tuberculous patients as it encouraged interest and concern in others, thus negating depression and introspection and

[35] Nachod, E. M., and Viesko, B. J.: Rehabilitation of the Tuberculosis Patient in an Army Hospital. In Proceedings of the 1960 Annual Conference, American Occupational Therapy Association, New York, N.Y., p. 59.

[36] Knickerbocker, B. M.: Group Activities for Tuberculous Patients. In Proceedings of the 1960 Annual Conference, American Occupational Therapy Association, New York, N.Y., pp. 25–28.



FIGURE 161—Group activity for tuberculous patients. Women patients at Valley Forge General Hospital, Phoenixville, Pa., learn hatmaking techniques with 1st Lt. Signe Nelson.

aided the patients in regaining self-confidence and assurance in themselves and their abilities.[37]

INSERVICE EDUCATIONAL PROGRAMS

In order to assure the highest caliber of medical care for patients, it is essential that the professional staff be exposed to continuous education in their own specialty area and in the areas of medicine with which they are allied. A survey of Army occupational therapy inservice educational programs from 1947 to 1961 revealed that in general a wide variety of learning experiences was made available to both officer and enlisted personnel.[38] These experiences included both formal and informal clinic staff meetings at which new trends in medicine or technical procedures were discussed by physicians, members of allied professional fields, or staff members who had recently attended workshops or special courses of study. Staff meetings as a rule were reported as being a medium for the relay of information concerning hospital or

[37] Ibid., pp. 26–28.

[38] Survey conducted by the author and directed to chiefs of occupational therapy clinics during 1947–61.

department policies and procedures. Some departments rotated the responsibility for staff meetings among the occupational therapy staff who were free to present a program of their choice and invite guest speakers if they so desired.

One particular kind of meeting—reported by several hospitals—was one in which the occupational therapist and enlisted specialists in a clinic would participate in a daily review of the patients' treatment progress. The occupational therapist in charge of the particular clinic program usually led the discussion. This review covered the purpose of the treatment, the physical and emotional status of the patient, the type of activity, and anticipated changes which might have to be made. It not only provided learning opportunities for the staff, but it also afforded experience in organizing and presenting succinct capsulated information and opportunity to point up the similarities in concepts and procedures in the treatment programs. During these review periods, discussion of ideas and procedures learned from treatment of other patients added depth to the learning experience.

Two programs differed from the general type of inservice training programs: the use-of-self program at Walter Reed General Hospital and the emergency medical care program at Valley Forge General Hospital.

The purpose of the use-of-self program was two-fold: "to investigate the kinds of knowledge most useful to the occupational therapist in his relationship with patients" and "how best to help the occupational therapist become more aware of and better able to use this knowledge." [39] A 1-hour weekly period was allotted to the program which all of the occupational therapists attended. Following several periods in which little progress was visible, a psychiatrist was asked to join the group (9 to 13 members) and act as leader. Later, an anthropologist, an enlisted technician, was invited to join the group and act as observer. At first, the psychiatrist gave formal presentations on patient relationships which were followed by group discussion. This was unsuccessful as the group appeared unwilling to orally relate his presentation with incidences of their own interactions with patients. Case presentations were then tried. These, too, were unsuccessful as they resulted in a one-to-one communication between the psychiatrist and the occupational therapist presenting the case. Role playing was used during one session and while it was considered enjoyable (by those observing), it was thought not to provide the kind of learning experience needed by members of the group.

Finally, tapes were made of the initial interviews of patients by the occupational therapists. These provided the most useful approach to the study of the therapeutic use of self because they afforded a focus for general discussion and could be replayed for verification of "hearing" or clarification of points under discussion. Tapes were made on medical and surgical patient interviews only. The program terminated

[39] Robinson, R. A., Aronson, J. A., and Polgar, S.: The Use of Self in Occupational Therapy; An On-the-Job Training Program. Am. J. Occup. Therapy 14: 288–291, November–December 1960.

in 1959 (the psychiatrist and anthropologist left the Army) before neuropsychiatric patient interviews were taped. The tapes were limited in number because of the occupational therapists' reluctance to record.

> As time went on, the goals of the group became more explicit. These were that the occupational therapist should be more perceptive of what the patient is communicating both verbally and non-verbally and of his own feelings and attitudes and their effect on his relationship with the patient. This involves a greater awareness of the reasons behind both the patient's behavior and the therapist's responses.[40]

The use-of-self program was successful in that the group achieved a better understanding of themselves and their relationships with patients.

Many Army occupational therapists participated in programs on emergency medical care but the most intensive one was that reported for 1958 and 1959 from Valley Forge General Hospital by Maj. Mabel E. Hampton,[41] chief occupational therapist. The 1958 program totaled 120 hours of which 80 hours were in the applicatory training phase in the operating room, recovery ward, obstetrical ward, central materiel, and in the cast room. In the event a delivery was not observed during training in the obstetrical ward, the occupational therapist was placed on call until this deficit was made up. The 1959 course, in essence a refresher course, totaled 58 hours with 18 hours of lecture and 40 hours of practical training.

The purpose of emergency medical care training was to prepare the occupational therapist to serve in the role of nursing assistant in disaster situations.[42] Attainment of proficiency in this role was the goal. The occupational therapists had already had lectures and demonstrations in first aid and in the short 12-hour course on "Essentials of Emergency Medical Care," but it was firmly believed by Army Medical Specialist Corps Officers in the Surgeon General's Office that lectures and demonstrations were ineffective unless adequate practical training was included. The Valley Forge General Hospital programs proved that it was possible to obtain an acceptable minimal proficiency preparation through an inservice educational program.

FILMS AND PUBLICATIONS

Films

1st Lt. (later Capt.) Mary A. Reilly and Maj. Pauline Bettinger, in addition to their other duties in the Surgeon General's Office, served as technical advisers for professional films on occupational therapy. Lieutenant Reilly's specific responsibility centered on three films "Time Out," "Problems of Motion," and "Journey to Reality" which were

[40] Ibid., p. 291.

[41] Formerly Maj. Mabel Eisele.

[42] McDaniel, M. L.: The Role of the Occupational Therapist in Natural Disaster Situations. Am. J. Occup. Therapy 14: 195–198, July–August 1960.

released in 1950.[43] "Time Out" was selected for exhibit in the Realistic Documentary Experimental Class at the Fourth International Film Festival held in Edinburgh, Scotland, in 1950, and a certificate was received by the Signal Corps in evidence of this recognition. In 1952, Major Bettinger was adviser on the production of the film "Introduction to Occupational Therapy." Footage was taken from the other three films to make a 28–minute film.[44] A filmstrip entitled "Spontaneous Drawings and Paintings by Neuropsychiatric Patients" was completed in March 1954.[45]

The films and filmstrip served many useful purposes. They were used not only in the Army program to orient occupational therapy students and enlisted technicians to practice and procedure in three of the major fields in the profession but were frequently borrowed by civilian schools, affiliated centers, and state occupational therapy associations to augment lectures and demonstrations to their groups. Whether these films were an aid to procurement of students or occupational therapists is unknown, but they did publicize the role and function of occupational therapy in the Army Medical Service.

"Journey to Reality" was used to orient each class of neuropsychiatric technicians in their course of instruction at the Medical Field Service School, Fort Sam Houston, Tex. It was of particular value as it assisted in giving them a more complete understanding of the total treatment program in which their patients would be involved. "Time Out," which depicted the occupational therapy program of tuberculous patients, was also used to inform patients of the purpose and restrictions of the program.

Publications

The technical manual on occupational therapy, originally published in December 1944, was revised and reissued in September 1951.[46] The early edition contained the organization and administration of occupational therapy under the reconditioning service, whereas the later edition reflects the organizational pattern under the physical medicine service. These manuals are a permanent record of the doctrine and practice of the period in which they were written and a comparison of the contents of the manuals shows the changes in trends and philosophy of treatment in Army occupational therapy.

[43] PMF 5116–A, Time Out (treatment of tuberculosis patients); PMF 5116–B, Problems of Motion (treatment of physical disability patients); and PMF 5116–C, Journey to Reality (treatment of psychiatric patients).

[44] PMF 5227, Introduction to Occupational Therapy.

[45] FS 8–172, Spontaneous Drawings and Paintings by Neuropsychiatric Patients.

[46] War Department Technical Manual (TM) 8–291, September 1951. The third revision was issued in May 1962.

APPENDIX A

WAR DEPARTMENT
Office of The Surgeon General
Washington

July 29, 1919

From: The Supervising Dietitian, U.S. Army
To: The Surgeon General, U.S. Army
Subject: Suggestions concerning the Dietitian Service

1. In accordance with your verbal request, I am submitting the following suggestions which I believe are in the interest of the Dietitian Service and the Medical Department of the U.S. Army.

(a) It would seem advisable that a permanent place be made for dietitians on the staff of the larger hospitals. The increasing demand on the part of civilian hospitals is indicative of the interest in the subject of nutrition and dietotherapy and the appreciation of the medical profession for this specialized and technically trained worker.

(b) It is also believed that it might be to the advantage of the medium sized hospitals to give the dietitian entire charge of the mess department, relieving the mess officer and mess sergeant of their duties—an arrangement which seems possible with the present system of buying. This would seem to be preferable to detailing a nurse whose training along the line of dietetics cannot consist of approximately more than 60 hours together with some practical experience in a diet kitchen, who in this case is not prepared to do anything more than to act in the capacity of the diet cook.

(c) In order to obtain well qualified and experienced dietitians, which it would seem the army should have, it is believed that an increase over the present salary must be offered. It is also believed that a well qualified dietitian would effect a sufficient saving through the proper management of the mess to more than make up the difference in salary. This has been the experience of civilian hospitals.

(d) In view of the many letters that have been received in this office, expressing disappointments and a feeling of unfairness at not receiving the same privileges as granted to nurses, namely, insurance, sixty dollar bonus, reduced railroad fare when on leave, accrued leave for the entire period of service, commutation of rations while on leave. It is believed that all female civilian employees of the Medical Department in the field receiving their appointment from the Secretary of War (in other words, technically trained women) should be granted the same privileges as are granted the members of the Army Nurse Corps.

(e) As a means of accomplishing the above, it is recommended that one of two things be brought about, first that a separate corps be maintained for dietitians with a competent supervising dietitian at the head, this corps to be a section of the Personnel Division. Or secondly, in case the privileges now granted nurses cannot be granted under the above arrangement, that the corps, with a competent supervising dietitian at the head, be made a sub-section of the Army Nurse Corps, with all of the attending privileges. The first arrangement would be much more satisfactory to the dietitians. In either case, it is recommended that dietitians in the field shall be responsible professionally to the Commanding Officer.

(f) It would seem advisable that there should be at one or two of the larger hospitals, a training school for army dietitians where regularly qualified dietitians might be under observation and instruction as to the special features of the army work for a period of time before being sent to other posts where they would probably be the

only dietitian. It would therefore seem advisable to have as head dietitians at these places the best qualified women that it is possible to secure.

Walter Reed General Hospital would seem the logical place to begin this training. From statements made by the Commanding Officer of that hospital, to the writer, it is believed that such a plan would meet with his hearty approval.

(g) It is further recommended that the supervising dietitian on duty in this office be put on the regular list of inspectors of the Hospital Division, to be called upon to make inspections where the mess is involved.

2. I am inclosing copy of a letter from Jeannette Martner, a returned overseas dietitian, which it is believed expressed the almost universal opinion of the 356 dietitians who have served during the present war emergency.

LENNA F. COOPER
Supervising Dietitian

APPENDIX B

Salaries for Dietitians Assigned to Army Hospitals in a Civilian Status, 1918–48 [1]

Classification	June 1918	Nov. 1918	1919	May 1920	Apr. 1923	July 1924	1925	1927	1928 [2]	1930
Student dietitian; Cash salary per month	$15	$15	$15	$15	$15	$15	$15	$5	$5	$5
Cash salary per annum	180	180	180	180	180	180	180	60	60	60
Quarters and subsistence furnished (*) or quarters allowance	*	*	*	*	*	*	*	*	*	*
Quarters allowance										
Apprentice dietitian										
Quarters										
Staff dietitian [10] [11]	720	720	[12] 720	[13] 840	840	1, 380	1, 380	1, 380	1, 440	[14] 1, 500
Quarters allowance								120	120	120
Quarters and subsistence allowance	750	750	750	750	750	480	480			
New appointments								1, 380	1, 440	[15] 1, 320
Quarters allowance								120	120	120
Head dietitian [10] [11]	780	780	[12] 780	900	900	1, 440	1, 440	1, 440	1, 500	1, 560
Quarters allowance								120	120	120
Quarters and subsistence allowance	750	750	750	750	750	480	480			
New appointments										
Quarters allowance										
Chief dietitian [19]					1, 800	1, 800	2, 100	2, 100	2, 300	2, 300
Quarters allowance									200	200
Principal dietitian [20]										
Quarters allowance										
Supervising dietitian, Surgeon General's Office			1, 800							

	1931	May 1933	June 1933 [3]	1935	1936	1938	Dec. 1939	Aug. 1940	Feb. 1941
Student dietitian; Cash salary per month	$5		$5	$5	$5	$5	$3.80	$3.80	$3.80
Cash salary per annum	60		60	60	60	60	[7] 45	[7] 45	[7] 45
Quarters and subsistence furnished (*) or quarters allowance	*		*	*	*	*			
Quarters allowance							360	360	360
Apprentice dietitian									
Quarters									
Staff dietitian [10] [11]	[15] 1,560		1,440	1,440	1,440	1,440	SP-4 1,440	SP-4 1,440	SP-4 1,440
Quarters allowance	180		120	180	180	180	180	180	180
Quarters and subsistence allowance									
New appointments									
Quarters allowance									
Head dietitian [10] [11]	[17] 1,740		[18] 1,740	1,740	1,740	1,740	SP-5 1,620	SP-5 1,620	SP-5 1,620
Quarters allowance	180		180	180	180	180	180	180	180
Quarters and subsistence allowance									
New appointments	1,680		1,560						
Quarters allowance	180		180						
Chief dietitian [19]	2,500		1,800	1,800	1,920	2,020	SP-7 2,100	SP-7 2,100	SP-7 2,100
Quarters allowance	200		200	200	200	200	200	200	200
Principal dietitian [20]									
Quarters allowance									
Supervising dietitian, Surgeon General's Office									

Economy Act, all discharged

Classified civil service status

[1] Unless otherwise indicated, quarters, subsistence, and laundry were furnished. Quarters allowance given only when quarters were unavailable.

[2] Dietitians salaries were reclassified under authority of the Welch Act, 28 June 1928.

[3] Economy Act deduction of 15 percent not included. Given nonpermanent civil service status.

[4] Over 20 percent overtime was authorized but is not included in figures.

[5] Basic stipend. Deductions were made for retirement and additional pay for overtime was given.

[6] Public Law 80-330. August 1947—student on stipend received no overtime and no retirement deduction was made.

[7] Ungraded classification. $420 per annum. Laundry free—deductions for subsistence and quarters and from 3½ to 5 percent for retirement.

[8] Value of quarters (2 students per room) $96, and subsistence.

[9] Included quarters (1 student per room) $156, subsistence, $270; maid service, $24; Federal tax, $132.

[10] Extra allowance of $10 per month given for oversea duty.

[11] Transportation costs on reassignment borne by government. Four dollars per diem allowance when traveling.

[12] Congressional bonus of $20 per month for 12 months awarded to those who had served satisfactorily for a minimum of 1 month.

[13] 30 days annual leave gained per year.

	Apr. 1941	Jan. 1942	Aug. 1942	Jan.–Mar. 1943	Oct. 1944 [4]	July 1945 [4]		Sept. 1946 [5]	Sept. 1947 [6]	Sept. 1948
Student dietitian; Cash salary per month	$3.80	$6	$6		$100	$122		$60	$60	
Cash salary per annum	[7] 45	[7] 75	[7] 75		SP–3 1,260	SP–3 1,524		720	718	
Quarters and subsistence furnished (*) or quarters allowance										Positions terminated
Quarters allowance	360	330	330		180	180		[8] 366	[9] 582	
Apprentice dietitian			SP–3 1,260		SP–4 1,440	SP–4 1,722		1,674		
Quarters			180		180	180	Stipend	[8] 426		
Staff dietitian [10] [11]	SP–5 1,620	SP–5 1,620	SP–5 1,620							
Quarters allowance	180	180	180							
Quarters and subsistence allowance										
New appointments										
Quarters allowance										
Head dietitian [10] [11]	SP–6 1,820	SP–6 1,820	SP–6 1,820							
Quarters allowance	180	180	180							
Quarters and subsistence allowance										
New appointments										
Quarters allowance										
Chief dietitian [19]	SP–8 2,400	SP–8 2,400	Terminated.							
Quarters allowance	200	200								
Principal dietitian [20]	SP–7 2,120	SP–7 2,120	SP–7 2,120							
Quarters allowance	180	180	180							
Supervising dietitian, Surgeon General's Office			P–3 3,200							

Civilian positions terminated

[14] Salaries of dietitians on duty increased under authority of Brookhart Act, July 1930.

[15] Pay increased for those who had served 5 years as of 31 June 1931.

[16] Beginning salary for graduates of training course at Walter Reed General Hospital. To increase at rate of $60 per annum each year for the first 5 years; $1,560 per annum to dietitians who had served 5 years.

[17] As of 1 June 1931, salaries of head dietitians receiving $1,500 were increased to $1,680, those receiving $1,680 were increased to $1,740. Quarters allowance remained at $180 per annum.

[18] Salaries of head dietitians with previous service and promotion under the Welch and Brookhart Acts were reemployed at $1,740 with quarters allowance of $180.

[19] Only one position in this category (Walter Reed General Hospital, Director of Student Dietitian Course and Consultant to The Surgeon General).

[20] Positions at Letterman, Walter Reed, Brooke, and Fitzsimons General Hospitals only.

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APPENDIX C

Dietitians Trained in Army Hospitals, 1919–42

Category	Pupil dietitian course, 1919	Total World War I	Army student dietitian training programs, 1922–42, conducted at Walter Reed General Hospital																			Total 1922–42
Length of course (months).	4		6	6	6	6	6	6	6	6	6	8	[1] 9	[2] 10	12	12	12	12	12	12	12	
Date entered training	Oct. 1919		Oct. 1922	July 1923	Sept. 1924	Sept. 1925	Oct. 1926	Oct. 1927	Oct. 1928	Oct. 1929	Oct. 1930	Oct. 1931	Oct. 1932	1933	July 1934	July 1935	Sept. 1936	Sept. 1937	Sept. 1938	Sept. 1939	Oct. 1940	Sept. 1941	
Number completed training.	4	4	[3] 0	8	9	7	10	10	11	12	15	20	19	0	10	10	10	10	10	10	15	15	211
Date completed training.	Feb. 1919		Mar. 1923	Dec. 1924	Feb. 1925	Feb. 1926	Mar. 1927	Mar. 1928	Mar. 1929	Mar. 1930	Mar. 1931	May 1932	June 1933		June 1935	June 1936	Sept. 1937	Sept. 1938	Sept. 1939	Sept. 1940	Sept. 1941	Aug. 1942	
Educational prerequisites for entrance			Graduate of an accredited school of home economics having not less than 2 years of college. (Eight colleges had approved courses.)			BS degree in home economics approved by the American Dietetic Association *or* if degree in another field, an additional 1-year course in home economics was required.			BS degree in home economics with a major in foods and chemistry from a college of recognized standing as required by the American Deitetic Association. Two letters of recommendation from college professors.							BS degree in home economics with a major in foods and nutrition or institutional management from a college or university of recognized standing with at least 118 semester hours including:							

	Semester hours
Chemistry (to include inorganic, organic, and biochemistry)	12
Biology (to include human physiology and bacteriology)	6
Social Sciences (at least 2 of the following were required: psychology, sociology, or home economics)	9
Education	3
Foods (to include food preparation and meal planning)	6
Nutrition and Dietetics	6
Institution Management (to include quantity cookery and organization and management)	6

[1] A 12-month course was approved. Because of the Economy Act, the course was cut to 9 months.
[2] A 10-month course was approved but was suspended because of the Economy Act.
[3] The two students who were enrolled, resigned in February 1923.

APPENDIX D

Army Student-Apprentice Dietitian Training Program, 1942–48 (Civilian) [1]

Student dietitian training [2]	Date entering and number participating in training									
	1942		1943				1944			
	Aug.	Mar.	May	July	Sept.	Nov.	Jan.	Mar.	May	July
Brooke General Hospital				12			9			12
Fitzsimons General Hospital			6			20			19	
Lawson General Hospital					8			12		
Walter Reed General Hospital	16	12			16			16		
Total entering training	16	12	6	12	24	20	9	28	19	12
Separated during training	3				1				1	1
Completed training	13	12	6	12	23	20	9	28	18	11
Completed training, but declined apprentice appointment	0			2		1				
Total students trained	13	12	6	10	23	19	9	28	18	11

Apprentice dietitian training [2]	Date entering and number participating in training									
	1943			1944						
	Jan.–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.
Total entering from Army student dietitian training program	13	12	6	10	23	19	9	28	18	11
Total direct appointments from civilian source [3]	14	9	8	22	32	17	16	27	7	8
Total entering from Women's Army Corps										
Total apprentice dietitians entering training	27	21	14	32	55	36	25	55	25	19
Separated during training		1		1	1	2		6	2	
Completed training	27	20	14	31	54	34	25	49	23	19
Declined commission	1	7	1	2	3	4	2	3	8	1
Physically disqualified	1	1		2	3			5	3	
Total entered on duty as Army officer	25	12	13	27	48	30	23	41	12	18
Date completed training	Feb.–1943—Mar. 1944	Mar.–Apr.	May–June	July–Aug. 1944	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr. 1945	May–June	July–Aug.

Student dietitian training [2]	Date entering and number participating in training										
	1944—Con.		1945					Total war courses	1946	1947	Total courses
	Sept.	Nov.	Jan.	Mar.	May	July	Sept.		Sept.	Sept.	
Brooke General Hospital			8			14		55	10	8	73
Fitzsimons General Hospital		18			19			82			82
Lawson General Hospital	12						16	48			48
Walter Reed General Hospital	16			10			16	102			102
Total entering training	28	18	8	10	19	14	32	287	10	8	305
Separated during training		1	1	1		3	3	15		1	16
Completed training	28	17	7	9	19	11	29	272	10	7	289
Completed training, but declined apprentice appointment	2	5					1	11		2	13
Total students trained	26	12	7	9	19	11	28	261	10	5	276

Apprentice dietitian training [2]	Date entering and number participating in training										
	1945					1946		Total war courses	1946	1947	Total courses
	Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.		Sept.	Sept.	
Total entering from Army student dietitian training program	26	12	7	9	19	11	28	261	10	5	276
Total direct appointments from civilian source [3]	12	7	6	5	.....	.....	.....	190	.....	.....	190
Total entering from Women's Army Corps	.....	.....	5	.....	.....	.....	.....	5	.....	.....	5
Total apprentice dietitians entering training	38	19	18	14	19	11	28	456	10	5	471
Separated during training	.....	.....	1	.....	.....	1	1	16	.....	3	19
Completed training	38	19	17	14	19	10	27	440	10	2	452
Declined commission	3	10	8	5	9	3	17	87	10	.....	97
Physically disqualified	1	.....	.....	.....	2	.....	.....	18	.....	.....	18
Total entered on duty as Army officer	34	9	9	9	8	7	10	335	0	2	337
Date completed training	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	May–June	July	Sept.–		Sept.	Sept.	
	1945—Con.				1946				1947	1948	

[1] The applicants for the student-apprentice dietitian program were required to meet the educational requirements for entrance as set up for the student dietitian course. However, certain applicants, entering by qualifying experience, were permitted to substitute approximately 3 semester hours of institution management or nutrition for additional acceptable experience.

[2] Length of course—6 months.

[3] See Appendix F for details on direct appointments to apprentice program, for the civilian source, and type of qualifying experience for which they qualified.

APPENDIX E

Army Hospitals Conducting and Number Entering Apprentice Dietitian Training, 1943–48 [1]

Hospitals	1943			1944					1945							1946		1947	1948	Total
	Jan.–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.	Mar.	Mar.	Mar.	1943–48
General Hospitals:																				
Ashburn				2A							1A									3
Ashford								3A												3
Battey								3A												3
Borden			2DE		1E	2D	1F		2CE											8
Brooke				7A			9A			11A			7A			11A	7A	10A	5A	67
Bruns				1A																1
Bushnell	2A	2A			2A			2A		1C	4B		1C	2B						16
Deshon								2A			3A									5
Fitzsimons			6A			10A			10A			12A			19A					57
Gardiner (Camp Grant Station Hospital)		1C	2CE		2DE	2E	1D													8
Halloran		2C	1B	1C	3B			2A						1B						10
Hammon	2A		2C	3B	1B	2A	1B	4B	1A	3B	1B		2CE							22
Kennedy						4CD			1C	3D										8
Lawson	2A				3A			3A			12A									20
Lovell	1A	2A		3DE	2A		2D	2EF												12
Madigan (Fort Lewis Station Hospital)	2B			1B	5BD	1D	3DEF	4DEF	1D											17
Mayo					1C	5DEF			2D											8
McCloskey		2B			1C	2A			3A				[2]5CDE							13
Moore	2B	1B																		3
Oliver				4C	4CD		1C	6CDF												22
O'Reilly	3B		1B	5B		2DF	4DE	1A			4EF	2DG		2BC			7A			24
Percy Jones	3B			1B																4
Valley Forge					1B	1A		2CD												4
Walter Reed	5AB	5A			10A			10A			10A			9A			14A			63
Waltham											1C		2C							3
Winter									2A											2
Station Hospitals:																				
Camp Campbell	1A	1A			2A															4
Camp Carson				1B		3A			2A											6
Fort Bragg				3EG	5DEF	1D	1E	5CDEF	1G		2E	5CE	1E							24
Fort Dix					5CEF															5
Fort Jackson		2A			4A			2A												8
Fort Leonard Wood	4AB	3B			3BF	1A	2B	4B		1B										18
Total	27	21	14	32	55	36	25	55	25	19	38	19	18	14	19	11	28	10	5	471

Date completed	July 1943–Mar. 1944	1944 Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	1945 May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	1946 May–June	July	Sept.	1947 Sept.	1948 Sept.

[1] A—From student dietitian course (6 months).
B—From accredited civilian student dietitian course.
C—Dietitian in a 200 or more bed hospital for at least 1 year.
D—High school teacher of foods for 2 years managing cafeteria serving 200 or more meals.
E—Director for 2 years of school lunch program or commercial food service serving 200 or more meals.
F—Nutritionist for 2 years with social service or public health agency.
G—College instructor of foods, nutrition, and institution management for 2 years.

[2] Five Women's Army Corps members.

APPENDIX F

Direct Appointments to Apprentice Dietitian Training Programs, 1943–45 [1]

Number of graduates of accelerated approved civilian student dietitian training courses

Location	Date entered on duty															Total
	1943			1944						1945						
	Jan.–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	Jan.–Feb.	Mar.–Apr.	May–June	July–Aug.	Sept.–Oct.	Nov.–Dec.	
Approved civilian student dietitian training courses:																
Alameda Hospital, Alameda, Calif.				2			1									3
California Hospital, Los Angeles, Calif.				1	1					3	1					6
Cincinnati General Hospital, Cincinnati, Ohio	1															1
Colorado General Hospital, Denver, Colo.				4			2									6
Edward J. Meyer Memorial Hospital, Buffalo, N.Y.	1	1			1				1							4
The Johns Hopkins Hospital, Baltimore, Md.	2	4	1		7			6			4			4		28
Mercy Hospital, Chicago, Ill.	1				1											2
Miami Valley Hospital, Dayton, Ohio	2		1	3												6
Mount Sinai Hospital, Philadelphia, Pa.	1	1														2
New Jersey Cooperative Course (Beth Israel Hospital), Newark, N.J.	1															1
Shadyside Hospital, Pittsburgh, Pa.	1															1
St. Mary's Hospital, Detroit, Mich.	2															2
University of Minnesota Hospitals, Minneapolis, Minn.								2								2
Vanderbilt University Hospital, Nashville, Tenn.	2															2
Total entered	14	6	2	10	10	0	3	8	0	4	5	0	0	4	0	66
	Qualified home economics graduates with acceptable food service experience															
Type of qualifying experience: *Code*																
Dietitian in a 200 or more bed hospital for at least 1 year C		3	3	5	6	3	1	5	2	1	1	2	5	1		38
High school teacher of foods for 2 years managing cafeteria serving 200 or more meals D			1	2	5	9	6	7	3	3		1	2			39
Director for 2 years of school lunch program or commercial food serving 200 or more meals E			2	3	5	3	4	2	1		5	3	4			32
Nutritionist for 2 years with social service or public health agency F					5	2	2	5			1					15
College instructor in foods, nutrition, and institution management for 2 years G				2					1			1	[2] 5			4
Women's Army Corps [2]																128
Total entered	0	3	6	12	21	17	13	19	7	4	7	7	11	1	0	[2] 194
Grand total, direct appointments	14	9	8	22	31	17	16	27	7	8	12	7	11	5	0	

[1] Appointments given to (a) graduates of accelerated approved civilian student dietitian training courses and (b) qualified home economics graduates with acceptable food service experience in lieu of 6-month student dietitian training course.

[2] Five Women's Army Corps members admitted to program are included in the category breakdown as to type of experience. Not counted as direct civilian appointments as they were already enlisted. They are shown in the table as a separate category for information purposes only.

APPENDIX G

Emergency Physical Therapy Training Courses (Didactic Phase) Conducted by the Army, 1941–46

Location	Class number	Date
Army hospital courses: [1]		
Army and Navy General Hospital, Hot Springs, Ark.:		
Civilian students [2]	1	9 Oct. 1942–1 Apr. 1943
Do	2	1 July 1943–1 Jan. 1944
Military students [3]	3	10 Jan. 1944–10 July 1944
Ashford General Hospital, White Sulphur Springs, W. Va.:		
Civilian students	1	10 Aug. 1944–10 Feb. 1945
Do	2	10 Feb. 1945–10 Aug. 1945
Do	3	10 Aug. 1945–10 Feb. 1946
Brooke General Hospital, Fort Sam Houston, Tex.:		
Civilian students	1	9 Oct. 1942–1 Apr. 1943
Do	2	1 Apr. 1943–1 Oct. 1943
Do	3	1 July 1943–1 Jan. 1944
Do	4	1 Oct. 1943–31 Mar. 1944
Military students	5	10 Jan. 1944–10 July 1944
Do	6	10 July 1944–10 Jan. 1945
Do	7	10 Oct. 1944–10 Apr. 1945
Do	8	10 Jan. 1945–10 July 1945
Do	9	10 Apr. 1945–10 Oct. 1945
Bushnell General Hospital, Brigham City, Utah:		
Civilian students	1	10 July 1944–10 Jan. 1945
Do	2	10 Jan. 1945–10 July 1945
Do	3	10 July 1945–10 Jan. 1946
Fitzsimons General Hospital, Denver, Colo.:		
Civilian students	1	9 Oct. 1942–1 Apr. 1943
Do	2	1 Apr. 1943–1 Oct. 1943
Do	3	1 July 1943–1 Jan. 1944
Military students	4	10 Feb. 1944–10 Aug. 1944
Do	5	10 Aug. 1944–10 Feb. 1945
Do	6	10 Nov. 1944–10 May 1945
Do	7	10 Feb. 1945–10 Aug. 1945
Do	8	10 May 1945–10 Nov. 1945
Do	9	10 Aug. 1945–10 Feb. 1946
Fort Huachuca Station Hospital, Ariz.:		
Civilian students	1	1 Oct. 1943–31 Mar. 1944
Military students	2	10 Jan. 1944–10 July 1944
Lawson General Hospital, Atlanta, Ga.:		
Military students	1	10 Jan. 1944–10 July 1944
Do	2	10 July 1944–10 Jan. 1945
Do	3	10 Oct. 1944–10 Apr. 1945
Do	4	10 Jan. 1945–10 July 1945
Do	5	10 Apr. 1945–10 Oct. 1945
Do	6	10 July 1945–10 Jan. 1946

[1] The Council on Medical Education and Hospitals, American Medical Association, inspected and formally approved all physical therapy courses conducted by the Army.

Emergency Physical Therapy Training Courses (Didactic Phase) Conducted by the Army, 1941–46—*Continued*

Location	Class number	Date
O'Reilly General Hospital, Springfield, Mo.:		
Civilian students	1	9 Oct. 1942–1 Apr. 1943
Do	2	1 July 1943–1 Jan. 1944
Do	3	10 Jan. 1944–10 July 1944
Do	4	10 July 1944–10 Jan. 1945
Military students	5	10 Jan. 1945–10 July 1945
Do	6	10 Apr. 1945–10 Oct. 1945
Percy Jones General Hospital, Battle Creek, Mich.:		
Civilian students	1	10 Jan. 1944–10 July 1944
Do	2	10 July 1944–10 Jan. 1945
Do	3	10 Jan. 1945–10 July 1945
Military students	4	10 Aug. 1945–10 Feb. 1946
Walter Reed General Hospital, Washington, D.C.:		
Civilian students	1	1 July 1941–31 Dec. 1941
Do	2	1 Oct. 1941–31 Mar. 1942
Do	3	1 Jan. 1942–30 June 1942
Do	4	1 Apr. 1942–30 Sept. 1942
Do	5	1 July 1942–31 Dec. 1942
Do	6	9 Oct. 1942–1 Apr. 1943
Do	7	9 Jan. 1943–1 July 1943
Do	8	1 Apr. 1943–1 Oct. 1943
Do	9	1 July 1943–1 Jan. 1944
Do	10	1 Oct. 1943–31 Mar. 1944
Military students	11	10 Jan. 1944–10 July 1944
Do	12	10 Apr. 1944–10 Oct. 1944
Do	13	10 July 1944–10 Jan. 1945
Do	14	10 Oct. 1944–10 Apr. 1945
Do	15	10 Jan. 1945–10 July 1945
Do	16	10 July 1945–10 Jan. 1946
Physical Therapy School courses: [4]		
D. T. Watson School of Physiotherapy, Leetsdale, Pa.:		
Military students	1	18 Oct. 1943–18 Apr. 1944
Do	2	10 Apr. 1944–10 Oct. 1944
Stanford University, Palo Alto, Calif.:		
Military students	1	18 Oct. 1943–18 Apr. 1944
Do	2	10 Jan. 1944–10 July 1944
Do	3	10 Apr. 1944–10 Oct. 1944
University of Wisconsin, Madison, Wis.:		
Military students	1	18 Oct. 1943–19 Apr. 1944
Do	2	10 Apr. 1944–10 Oct. 1944

[2] Civilian students courses: Emergency 6-month didactic course followed by 6-month apprenticeship.
[3] Military student courses: Emergency 6-month didactic course followed by 3-month apprenticeship.
[4] Physical Therapy School courses were outlined by The Surgeon General and were conducted under War Department contract.

Source: Compiled from records maintained by Col. Emma E. Vogel, Director of Physical Therapists, Surgeon General's Office, 1942–47.

APPENDIX H

Rehabilitation Schedule, 5th General Hospital, 1943

1. Patients will be classified by each War Surgeon into group A, B, C, D, or E as per paragraph 2. This classification will be entered on ward order book and noted on bed plate. Patient will be told his group letter.

2. Classification of patients for Rehabilitation Program:

A Class: weight bearing, full military calisthenics, no restrictions.
B Class: weight bearing, casts, braces or slings worn, restricted calisthenics.
C Class: non-weight bearing, general exercise, moderately strenuous.
D Class: non-weight bearing, general exercise, mild.
E Class: bed patients, very mild general exercise.

Note: D and E Classes were later combined and classified as bed patients.

3. General Exercise Classes to meet in Physical Therapy Gymnasium as follows:

Group A and B: daily, except Saturday and Sunday—1030 to 1100 hours
Group C: daily, except Saturday and Sunday—1100 to 1130 hours
Group D: daily, except Saturday and Sunday—1300 to 1330 hours

4. *Note.* The Educational and Sports Programs were carried out by Special Service Section in the afternoon. This included walks and hikes of a length commensurate with patient's classification.

5. Remedial Classes regardless of Classification will meet in Physical Therapy Gymnasium as follows:

Remedial Shoulder Class ..... 0830 hours
Remedial Hand Class ..... 0930 hours
Remedial Foot Class ..... 0930 hours
Remedial Trunk Class ..... 0930 hours
Remedial Leg I Class ..... 1000 hours
Remedial Leg II Class ..... 1130 hours

All exercise classes except E Class are held in gymnasium of Physical Therapy Department.

6. Ward Surgeons will reclassify patients weekly and submit classifications by Friday 1700 hours to Physical Therapy Department and to Special Service Section. New admissions may be classified at any time during the week, their names telephoned to Physical Therapy Department, ext——and Special Service Section, ext——.

APPENDIX I

Physical Therapy Department, 108th General Hospital[1]

Our whirlpools are used for many open wounds, especially hand injuries. Because of the large number of patients (an average of 50 a day having whirlpool, and only 2 whirlpools) it is impossible to change the water after each patient. Often it is necessary to give two or three patients whirlpool at the same time. I asked the laboratory to make culture of the water at various periods during the day and found that the bacteria count was high. Therefore to guard against cross-infection we experimented with various solutions trying to find one that would keep the water sterile but would not irritate skin or tissue. Lysol did not work, as a solution strong enough to kill bacteria was irritating to the skin. A creosol solution nauseated the patients. Finally, we tried sodium hypochlorite, which works perfectly. Cultures were again made and were completely negative. Perhaps this isn't really necessary, as I've never seen a case of infection from whirlpool, but I felt it was better not to take chances.

[1] Extract from report included in letter, Department of Physical Therapy, 108th General Hospital, to Lt. Jean Beatty, Office of the Chief Surgeon, Headquarters, European Theater of Operations, U.S. Army, 21 June 1945, subject: Report of Physical Therapy Activities.

APPENDIX J

Strength, Women's Medical Specialist Corps, 1947–60

Strength as of—	Total				Regular Army	
	Total	Dietitians	Physical therapists	Occupational therapists [1]	Total	Dietitians
31 December 1947	517	244	266	7	70	31
30 June 1948	[3] 437	195	197	45	194	86
30 June 1949	[3] 401	165	164	72	180	76
30 June 1950	340	141	135	64	149	64
30 June 1951	536	210	222	104	211	94
30 June 1952	620	233	255	132	217	91
30 June 1953	607	219	255	133	201	81
30 June 1954	571	213	217	141	186	75
30 June 1955	523	204	190	129	173	69
30 June 1956	490	189	191	110	178	70
30 June 1957	447	160	189	98	177	70
30 June 1958	414	151	180	83	181	70
30 June 1959	421	159	175	87	181	71
30 June 1960	418	163	175	80	175	68
31 December 1960	431	166	187	78	178	65

	Regular Army—Con		Reserve			
	Physical therapists	Occupational therapists	Total	Dietitians	Physical therapists	Occupational therapists
31 December 1947	32	7	447	[2] 213	[2] 234	0
30 June 1948	72	36	243	109	125	9
30 June 1949	70	34	221	89	94	38
30 June 1950	59	26	191	77	76	38
30 June 1951	83	34	325	116	139	70
30 June 1952	87	39	403	142	168	93
30 June 1953	93	27	406	138	162	106
30 June 1954	87	24	385	138	130	117
30 June 1955	84	20	350	135	106	109
30 June 1956	86	22	312	119	105	88
30 June 1957	86	21	270	90	103	77
30 June 1958	89	22	233	81	91	61
30 June 1959	87	23	240	88	88	64
30 June 1960	82	25	243	95	93	55
31 December 1960	86	27	253	101	101	51

[1] Number of civilian occupational therapists on duty: 1947, 103; 1948, 64; 1949, 28; 1950, 16; 1951, 13; 1952, 8; 1953, 3; 1954, 3; 1955, 3; 1956, 2; 1957, 1.
[2] Army of the United States.
[3] Students attending Medical Department Training Programs at Brooke Army Medical Center, Fort Sam Houston, Tex.

Source: Compiled from monthly strength reports maintained by Women's Medical Specialist Corps, Surgeon General's Office.

APPENDIX K

Distribution, Women's Medical Specialist Corps Officers, 1947–51, 1953–60 [1]

Distribution as of—	Continental United States				Total				U.S. Army Europe		
	Total	Dietitians	Physical therapists	Occupational therapists [2]	Total	Dietitians	Physical therapists	Occupational therapists	Dietitians	Physical therapists	Occupational therapists
31 December 1947	405	177	221	7	112	67	45	0	16	7	0
30 June 1948	369	154	173	42	68	41	24	3	9	6	0
30 June 1949	341	137	138	66	60	28	26	6	6	5	2
30 June 1950	298	119	120	59	42	22	15	5	8	4	1
30 June 1951	458	170	190	98	78	40	32	6	11	5	2
30 June 1953	519	173	219	127	88	46	36	6	17	8	1
30 June 1954	486	169	184	133	85	44	33	8	19	9	1
30 June 1955	449	163	163	123	74	41	27	6	21	11	1
30 June 1956	420	152	166	102	70	37	25	8	21	11	3
30 June 1957	382	129	164	89	65	31	25	9	19	9	4
30 June 1958	353	121	158	74	61	30	22	9	20	9	4
30 June 1959	356	130	149	77	65	29	26	10	19	12	5
30 June 1960	350	134	146	70	68	29	29	10	22	14	5
31 December 1960	361	135	158	68	70	31	29	10	20	15	5

	U.S. Army Forces Far East			Pacific			Caribbean			Alaska		
	Dietitians	Physical therapists	Occupational therapists	Dietitians	Physical therapists	Occupational therapists	Dietitians	Physical therapists	Occupational therapists	Dietitians	Physical therapists	Occupational therapists
31 December 1947	42	29	0	5	6	0	3	2	0	1	1	0
30 June 1948	22	12	0	5	4	3	4	2	0	1	0	0
30 June 1949	14	12	0	4	4	4	3	4	0	1	1	0
30 June 1950	11	7	0	1	2	4	2	2	0	0	0	0
30 June 1951	25	23	1	2	3	3	2	1	0	0	1	0
30 June 1953	22	20	0	4	6	4	3	2	1	0	0	0
30 June 1954	17	14	0	5	7	5	3	3	2	0	0	0
30 June 1955	13	7	0	5	7	4	2	2	1	0	0	0
30 June 1956	9	6	0	5	7	4	2	1	1	0	0	0
30 June 1957	7	6	0	4	9	5	1	1	0	0	0	0
30 June 1958	5	3	0	4	9	5	1	1	0	0	0	0
30 June 1959	4	4	0	4	9	5	2	1	0	0	0	0
30 June 1960	2	5	0	3	9	5	2	1	0	0	0	0
31 December 1960	4	4	0	5	9	5	2	1	0	0	0	0

[1] Distribution figures are unavailable.
[2] See Appendix J for number of civilian occupational therapists on duty.

Source: Compiled by Col. Harriet S. Lee. Figures quoted before 1954 were derived from both official and semiofficial sources between which there were some discrepancies.

APPENDIX L

Number of Women's Medical Specialist Corps Officers Who Attended Military and Civilian Courses, January 1948 to 30 December 1960[1]

Course[2]	Dietitians	Physical Therapists	Occupational Therapists	Total
Military courses:[3]				
Army Medical Service Officer Career Course (Medical Field Service School):				
Before 1957 (S)	0	1	0	1
After 1957 (L)	0	4	1	5
Army Health Nursing (Walter Reed Army Institute of Research) (S).	1	2	1	4
Army Information School (Fort Slocum, N.Y.) (S).	1	0	1	2
Hospital Administration Course (Medical Field Service School) (L).	7	0	0	7
Hospital Food Administration Course (Medical Field Service School) (S).	114	0	0	114
Institute for Army Medical Specialist Corps Officers (Walter Reed Army Institute of Research) (S).	116	126	73	315
Management of Mass Casualties (Walter Reed Army Institute of Research and Medical Field Service School) (S).	35	27	18	80
Neuropsychiatric Nursing (Walter Reed Army Institute of Research) (S).	0	0	1	1
Nursing in Medical Management of Mass Casualties (Walter Reed Army Institute of Research) (S).	2	6	1	9
Physical Therapy Institute (Medical Field Service School) (S).	0	20	0	20
Principles of Medical Operations in Nuclear Warfare (Walter Reed Army Institute of Research) (S).	0	1	0	1
Women's Army Corps Officer Advanced Course (Fort McClellan, Ala.) (L).	2	2	1	5

See footnotes at end of appendix.

Number of Women's Medical Specialist Corps Officers Who Attended Military and Civilian Courses, January 1948 to 30 December 1960[1]—*Continued*

Course[2]	Dietitians	Physical Therapists	Occupational Therapists	Total
Women's Army Corps Officer Recruiting Course (Fort Benjamin Harrison, Ind.) (S).	3	4	0	7
Total, long courses	9	6	2	17
Total, short courses	272	187	95	554
Grand total	281	193	97	571
Civilian courses:[3]				
Advanced training in Neuropsychiatric Occupational Therapy (St. Elizabeths Hospital, Washington, D.C.) (L).	0	0	2	2
American Hospital Association Institutes (S).	63	6	1	70
College Final Semester Plan (L).	0	2	3	5
Doctor of Philosophy degree (L).	1	0	0	1
Georgia Warm Springs Foundation:				
6-month course (L)	0	17	2	19
3-month course (S)	0	12	10	22
Master's degree (L)	21	22	7	50
Miscellaneous specialized courses (S).	31	33	65	129
National Training Laboratory (Bethel, Maine) (S).	0	1	2	3
Physical Therapy Postgraduate Training Program (Rancho Los Amigos, Calif.) (L).	0	1	0	1
Total, long courses	22	42	14	78
Total, short courses	94	52	78	224
Grand total	116	94	92	302

[1] Attendance at basic military orientation course, required of all officers coming on duty is not shown.

[2] Numbers quoted indicate number of officers attending courses at Government expense. An unknown number of officers attended short courses on administrative or annual leave at no expense to the Government.

[3] L—long course, 20 weeks' duration or more.
S—short course, less than 20 weeks' duration.

Source: Compiled from records in the Office of the Chief, Army Medical Specialist Corps, Surgeon General's Office.

APPENDIX M

Strength of the Army and the Women's Medical Specialist Corps, 1948–60

Strength as of–	Army[1]	Women's Medical Specialist Corps		
		Total	Regular Army	Percent Regular Army
30 June 1948	554,000	437	194	44.39
30 June 1949	660,000	401	180	44.88
30 June 1950	593,000	340	149	43.82
30 June 1951	1,532,000	536	211	39.36
30 June 1952	1,596,000	620	213	34.35
30 June 1953	1,534,000	607	201	33.11
30 June 1954	1,405,000	561	186	33.15
30 June 1955	1,109,000	523	173	33.07
30 June 1956	1,026,000	490	178	36.32
30 June 1957	998,000	447	177	39.59
30 June 1958	897,000	414	181	43.71
30 June 1959	860,000	421	181	42.99
30 June 1960	873,000	418	175	41.86

[1] Approximate. Figures shown are to the nearest thousand.

Source: (1) The Army strength figures for 1948–57 are from: The Army Almanac, 2d Edition. Harrisburg, Pa.: The Stackpole Co., 1959, p. 111. (2) The Women's Medical Specialist Corps strength figures are from the Office of the Chief, Army Medical Specialist Corps, Surgeon General's Office.

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APPENDIX N

Assignment of Women's Medical Specialist Corps Procurement Officers in Army Headquarters, 1950–60[1]

Calendar Year	First U.S. Army	Second U.S. Army	Third U.S. Army	Fourth U.S. Army	Fifth U.S. Army	Sixth U.S. Army
1950			Ehlers, C. (PT)[2]	Moseman, M. (D)[2]	Girard, E. (D)	
1951	Boger, M. (PT)[3]	Berteling, M. (OT)[3]		do	do	Murray, G. (OT)
1952	Clark, F. (PT)	Behlen, M. (D)	Frazee, M. (PT)[3]	do	do	Do.
1953	do	do	Handschy, J. (PT)	Johnson, F. L. (D) do	Eisele, M. (OT) do	Do.
1954	do	Leath, M. (PT)	do	do	do	Beard, G. (PT) Do.
1955	Roberts, A. (PT) do	do	do	Anderson, R. (OT) do	Lentz, V. (D) do	Do.
1956	Murray, G. (OT) do	do	Johnson, F. J. (PT) do		do	Radke, M. (D) Do.
1957	do	Bender, G. (PT) do	do		Anderson, M. (PT)[4] do	Do.
1958	do	do	Estrada, B. (D) do		Lipscomb, M. (D) Anderson, M. (PT)[4]	Anderson, M. (PT)[4]
1959	Frazee, M. (PT) do	Hamlyn, A. (PT) do	do		Lipscomb, M. (D) do	Anderson, M. (PT)[5]
1960	do	do	Evans, N. (D) do		do	do
		Van Mason, C. (D)			Peterson, D. (PT)	

[1] Two names shown in an Army area for the same calendar year indicate an orientation overlap of approximately 1 month except in 1957. Major Lipscomb and Captain Anderson had concurrent tours at Fifth Army headquarters in fiscal year 1958.

[2] 90 days' temporary duty.

[3] Temporary duty.

[4] Mildred J. Anderson.

[5] Marilyn J. Anderson.

Source: Compiled from Army Medical Specialist Corps Section annual reports, Surgeon General's Office.

APPENDIX O

Women's Medical Specialist Corps Officers Serving in Field Grades, Fiscal Years 1948–61

Fiscal year	Regular Army Grade			Active Army Grade[1]					Corps strength	Percent serving in field grades
	Colonel	Lieutenant Colonel	Major	Colonel	Lieutenant Colonel	Major		Total		
						Regular Army	Reserve			
30 June 1948	0	0	[2]2	[3]1	[4]1	0	0	2	437	0.45
30 June 1949	0	0	[5]15	1	3	12	0	16	401	3.99
30 June 1950	0	0	17	1	3	13	0	17	340	5.00
30 June 1951	0	0	18	1	3	36	2	42	536	7.83
30 June 1952	0	0	17	1	3	37	2	43	620	6.93
30 June 1953	0	0	34	1	3	44	3	51	607	8.40
30 November 1954[6]	0	0	30	1	3	41	3	48	571	8.41
30 June 1955	0	0	28	1	3	42	4	50	523	9.56
30 June 1956	0	0	35	1	3	40	4	48	490	9.79
30 June 1957	0	0	35	1	7	72	4	84	447	18.79
30 June 1958	0	10	77	1	9	83	11	104	414	25.12
30 June 1959	0	13	80	1	17	81	10	109	421	25.89
30 June 1960	0	15	84	1	17	87	31	136	418	32.53
30 June 1961	1	16	80	1	20	89	41	151	420	35.95

[1] Total number serving on active duty in field grades including those serving in temporary grades.

[2] Emma E. Vogel and Helen C. Burns (permanent grade).

[3] Emma E. Vogel (temporary grade).

[4] Helen C. Burns (temporary grade); resigned effective that date.

[5] Emma E. Vogel; Myrtle Aldrich; Felie Clark; Helen A. Dautrich; Helen M. Davis; Brunetta A. Kuehlthau; Elsie Kuraner; Harriet S. Lee; Hilda M. Lovett; Edna Lura; Eleanor L. Mitchell; Miriam E. Perry; Agnes P. Snyder; Ethel M. Theilmann; and Nell Wickliffe were promoted.

[6] No figures are available for 30 June 1954.

Source: Compiled from records maintained in the Office of the Chief, Army Medical Specialist Corps, Surgeon General's Office.

APPENDIX P

Number of Students Graduated in Women's Medical Specialist Corps Professional Educational Programs, Fiscal Years 1950–61

Fiscal Year	Dietetic Internship	Physical Therapy Course	Occupational Therapy Clinical Affiliation	Total
1950	7	9	7	23
1951	15	13	9	37
1952	14	32	21	67
1953	24	38	16	78
1954	22	30	[1]31	83
1955	22	21	[1]30	73
1956	26	17	[1]24	67
1957	17	17	11	45
1958	7	19	5	31
1959	12	12	16	40
1960	22	12	5	39
1961	21	9	8	38
Total	209	229	183	621

[1] Includes students from the Army Occupational Therapy Course.

Source: Compiled from records maintained in the Office of the Chief, Army Medical Specialist Corps, Surgeon General's Office.

APPENDIX Q

Army Dietetic Internship Programs, 12-Month Course, 1948–60 (Military) [1]

Location	Sept. 1948 [2]	Sept. 1949	Sept. 1950 [3]	Sept. 1951 [4]	Sept. 1952	Sept. 1953	Aug. 1954	Aug. 1955	Aug. 1956	Aug. 1957	Aug. 1958	Aug. 1959	Total
Brooke General Hospital	12	16	16	12	10	11	15	10	10	([5])	11	10	133
Walter Reed General Hospital				12	12	12	12	9	9	12	11	12	101
Total entering training	12	16	16	24	22	23	27	19	19	12	22	22	234
Separated during training	3	1	2	1		1	1	2	1	5		1	18
Brooke General Hospital	9	15	14	12	10	11	15	10	9		11	9	125
Walter Reed General Hospital				11	12	11	11	7	9	7	11	12	91
Total completing training	9	15	14	23	22	22	26	17	18	7	22	21	216
Physically disqualified			1				1				2		4
Awarded military occupational specialty 3420	[6] 6	15	13	23	22	22	25	17	18	7	20	21	[6] 209

[1] Educational prerequisites for entrance: Bachelor of Science degree in home economics with a major in foods and nutrition or institution management from a college or university of recognized standing with at least 118 semester hours including:

	Semester hours
Chemistry (to include inorganic, organic, and biochemistry)	12
Biology (to include human physiology and bacteriology)	6
Social sciences (to include at least two of the following: psychology, sociology, or home economics)	9
Education (to include at least one of the following: educational psychology, methods of teaching, or principles of education)	3
Foods (to include food preparation and meal planning)	6
Nutrition and Diet in Disease	6
Institution Management (to include quantity cookery and organization and management)	6

[2] Officers were appointed in the Reserve (Changes 2, Army Regulations No. 140–101), 2 months' basic training at Brooke Army Medical Center was required.

[3] Basic training requirement reduced to 1 month.

[4] In addition, t ree Air Force student dietitians entered training at Brooke General Hospital. One was separated during training and two graduated.

[5] Program suspended at Brooke General Hospital because of limited number of applicants.

[6] Following completion of dietetic internship, three graduates transferred to the Air Force.

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