A STUDY TO DEVELOP A METHODOLOGY TO BE USED IN DETERMINING MINIMUM NURSING REQUIREMENTS AT SOUTHWEST TEXAS METHODIST HOSPITAL, SAN ANTONIO, TEXAS

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CHAPTER I

INTRODUCTION

History and Setting

Southwest Texas Methodist Hospital accepted a responsibility to augment the delivery of health care in San Antonio and became the pioneer medical treatment facility to locate in the South Texas Medical Center in 1963. This medical center is located approximately seventeen miles northwest of the center of the city of San Antonio. It has since become the home of four other hospitals, numerous convalescent and nursing homes and clinical offices, and the University of Texas Medical School at San Antonio.

Opened as a 175-bed general, nonprofit, health care institution, Methodist Hospital has expanded to a 12-story structure with approximately 400 patient beds. It offers a unique variety of health care services to the citizens of the San Antonio/South Texas area.

The original structure contained five patient floors above ground and two sublevels below ground, wherein all the vital elements of the hospital are located. Included in the sublevel floors are the departments of surgery, pathology,

radiology, surgical intensive care, pharmacy, central supply, food service, and the power plant. In 1970 Methodist Hospital became the first health care institute in the South Texas Medical Center to undergo major expansion.

Included in the addition to Methodist Hospital is a coronary care unit, a postcoronary care unit, a cardiopulmonary laboratory, a cancer clinic, a medical intensive care facility, a diagnostic and treatment center, and a pediatric unit. Expanded educational facilities are also included in the expansion of the hospital. In conjunction with the addition, all the ancillary services located on sublevels one and two were adequately expanded to support the additional patient beds.

Methodist Hospital owns approximately 70 acres in the 683 acre South Texas Medical Center, and this land will provide for further expansion as Methodist continues to grow to meet the health care needs of San Antonio and South Texas. Methodist Hospital's devotion to quality patient care has earned it a prestigious reputation as a progressive participant in the health care industry of San Antonio.[1]

General Information

The rising cost of hospitalization is well known and

of great concern to all who are either providers or recipients of health care. The largest single cost factor in the hospital budget is the salaries of the nursing staff, representing about one-third of the hospital budget. Therefore, it is essential that the nursing staff be used effectively and efficiently.[2] The effective utilization of personnel is vital in a labor intensive industry to control costs. Personnel utilization, then, becomes a major concern of the hospital administrator, and, since nursing service normally comprises 50 per cent or more of the total personnel, this service commands his greatest attention.[3]

Staffing for nursing service refers to all hospital personnel occupying control spaces assigned to the nursing service, and it includes the registered nurse, licensed vocational nurse, nurses' aide, and orderly (Appendix A, Definitions).

Staffing for nursing service continues to be the most persistent and critical problem facing hospital nursing service administration. Many of the factors that contribute to the staffing problem are known: the small number of graduates entering into the labor market; turnover of personnel and expansion of the utilization of health facilities; creation of

new health service positions; and changes in knowledge and medical technology.[4]

The Texas Hospital Association, in a study entitled "Allied Health Manpower in Texas, 1973," indicates that the education programs for registered nurses are turning out increasing numbers of graduates. However, the graduates of the registered nurse education programs for the academic year 1972-1973 satisfied a maximum of 85 per cent of the average annual net requirements for the state of Texas. The Association contends that qualified health manpower must be increased and that education and training must be improved.[5]

Statement of the Problem

The problem is to develop an interim staffing methodology to be used in distributing available nursing personnel resources in the event of a sudden loss of nursing personnel at Southwest Texas Methodist Hospital, San Antonio, Texas.

Conditions Prompting the Study

The hospital administrator requested that an interim staffing pattern be developed for the nursing service of Southwest Texas Methodist Hospital. The reason for requesting the study was the recent opening of three hospitals in

the immediate vicinity. The administrator anticipated a loss of nursing personnel, particularly registered nurses as the new facilities open.

The largest of the three new hospitals is the 760-bed Veterans Administration Hospital. This hospital is presently operating 324 beds. Additional beds will be placed into operational use as demand for the beds increases. The Bexar County Hospital operates as a 425-bed facility. The other hospital in the area is a proprietary hospital with a bed capacity of 316, which is presently operating 150 beds. Unless there is an increase in the number of registered nurses in the San Antonio work force when the Veterans Administration Hospital and the proprietary hospital are operating at their stated capacities, there will be increased competition among the hospitals in the area for registered nurses.

Research Methodology

The research methodology consisted of:

1. A review of the literature to investigate the various techniques used in hospitals for determining nursing service staffing requirements.

2. An extensive review of hospital records, reports, work load data, and policies relating directly and indirectly

to nursing service.

3. Interviews with hospital administrators, supervisory nursing service personnel, and members of the nursing staff of the Southwest Texas Methodist Hospital, Veterans Administration Hospital, Bexar County Hospital, and Community Hospital.

4. A review and analysis of the mission, goals, organization, and management of the nursing service.

Criteria

In order for a methodology to be useful as a management tool at Southwest Texas Methodist Hospital, it must:

1. Accurately forecast fixed minimum levels of staffing.

2. Be flexible, simple, and easy to use.

3. Establish a basis for determining the daily work load.

4. Permit a skill mix of nursing personnel to provide nursing care.

5. Provide for continuity of service to patients.

6. Provide for effective and economical use of personnel.

7. Meet the nursing care needs of the patients.

Limitations

The developed methodology will not permanently replace the existing industrial engineered staffing system. The industrial engineered system adequately forecasts staffing requirements when the supply of nursing personnel is sufficient to meet demands.

Factors Bearing on the Problem

The factors bearing on the problem are:

1. A systematic means of evaluating the quality of nursing care had been implemented (Appendix B). Selected nursing personnel conduct a weekly evaluation of randomly selected patients. The nursing care plan, patient care record, patient welfare and comfort, and patient safety are evaluated.

2. Shift rotation of any type of nursing personnel was considered undesirable. This is a personnel policy to attract prospective employees.

3. An industrial engineering method of predicting nursing staff requirements is in use.

Assumptions

The assumptions for this study are:

1. The mix of patients on each clinical nursing unit during the data-collection period in relation to the degree of illness and nursing care needs would be representative of the usual mix on that unit.

2. The study does not attempt to define quality patient care. It is expected that any staffing guide or related criteria would be based on providing good nursing care.

3. Nursing personnel will be properly utilized.

4. Southwest Texas Methodist Hospital will increase hiring efforts to fill vacant nursing positions.

5. Southwest Texas Methodist Hospital will continue to operate as a 400-bed facility.

Objectives

The objectives of the study were:

1. Produce a reliable management tool that can be used by Southwest Texas Methodist Hospital to provide for more efficient utilization of nursing personnel in the event of a temporary reduction in nursing personnel.

2. Evaluate the system of distributing personnel in satisfying relative peak demands in workload due to the shortage of nursing personnel.

Review of the Literature

There are many articles on determining staffing requirements for nursing departments; however, the proposed methods found in the literature are applicable to the particular institution where the methods were developed. The staffing requirements are unique to each hospital, and the methodology used for one hospital cannot necessarily be applied to every other hospital. The literature suggests that the use of a staffing methodology applied to a specific hospital situation is a more logical choice.

Traditionally, staffing of nursing departments has been based on the judgment and experience of hospital administrators and professional nurses. Many authors still consider the nurses' judgment as the most valid basis for staffing.[6] The American Nurses' Association has recommended standards designed to provide guidance as to the activities that should be performed by a registered nurse, but numerical concepts are avoided because of the multitude of factors that must be taken into consideration in determining staffing requirements.[7] The method recommended by the National League of Nursing for determining staffing, consisted of multiplying the patient census by the average nursing hours required

per patient day.[8]

Various staffing methodologies have been developed to determine the numbers and kinds of nursing personnel required to provide nursing care to a specific group of patients. The standards of the Joint Commission on Accreditation of Hospitals Standards for Nursing Service identifies four major methodologies:

1. Simple descriptive.
2. Industrial engineering.
3. Management engineering.
4. Operations research.[9]

The descriptive methodology makes use of data-gathering devices about a large number of variables. The various techniques may use simple ratios, formulas, fluctuation of census, personnel, and the subjective judgment of individuals based on experience and common sense.[10]

Industrial engineering uses techniques of work measurement, task or function analysis, and procedure flow and analysis. Industrial engineering is directed at the study of nursing work on a specific unit and focuses more upon reorganization, reassignment, and redistribution of work than on new prediction of total work.[11] The Commission for

Administrative Services in Hospitals (CASH) provides management services to member hospitals and utilizes industrial engineering techniques to establish performance standards, personnel staffing, and departmental organization. The CASH methodology for staffing involves an intensive study of the practices and procedures of total nursing care. The results of the study includes:

1. Formulation of a method for determining the proper staff relationship to the patient load for each shift.

2. Establishing a basis for predetermining the daily work load, based upon census and the patient mix.

3. A monthly report to each hospital denoting its nursing utilization index relative to other hospitals with comparable characteristics and to an established standard.[12]

Similar industrial engineering methodologies are utilized by the Nursing Staffing Management Control (NSMC) plan of the Massachusetts Hospital Association's Group Systems Engineering Program.[13]

Management engineering utilizes the same techniques as industrial engineering, but also uses systems analysis and operations research. The management engineering methodology represents an increase in the application of logic

to the problem. The components of management engineering are: a statement of performance objectives, an analysis of components and functions, distribution of functions, scheduling, training of individuals for use and testing of the system, installation of the system, and quality control.[14]

In the operations research methodology, mathematical models are built to test real life problems. Linear programming has been used to assign different classifications of nursing personnel to different tasks. Multivariate regression analysis has been used to relate the hours spent by the various categories of nursing personnel in direct care, indirect care, and nonproductive activities to such variables as nursing care hours available and distribution of patients by nursing care categories.[15] Stimson and Stimson, based on what is reported in the literature, contend that various other nurse staffing techniques described by operations researchers have not been tested and are little more than interesting examples of operations research technique rather than hospital management techniques.[16]

A variety of approaches have been proposed to determine an optimal staffing level, based on objective criteria. The key element for many of these is a patient classification system. The system attempts to categorize patients according

to their nursing care needs. The categories, usually two to four, are based on actual basic patient needs rather than type of illness. The amount of time required to provide for patient care for each category of patient is usually determined by industrial engineering techniques, tempered to some extent by nurse involvement in setting standards. Personnel requirements are then determined for each eight-hour shift of the nursing unit by multiplying the number of patients in each category by the nursing care hours previously determined as applicable for that category.[17]

Patient classification schemes, which are used quite extensively in the staffing methodologies of the NSMC, the Personnel Allocation and Scheduling System (PASS), and the Shared Management Systems of the Texas Hospital Association, possess certain characteristics. The majority of schemes are developed along the physiological dimensions of care; primarily, few classifications schemes have items related to a given patient's sociopsychological behavior requirements. Little is reported in the literature about the precision with which patients can be classified. The question of the validity of the terms used in classification schemes has not been resolved to anyone's satisfaction.[18]

The Commission for Administrative Service to Hospitals originally recommended industrial engineering techniques be used to establish a patient classification system. It no longer recommends daily classification of patients as the measure by which adjustments in staffing can best be made.[19] Price, in a study conducted in five hospitals using different methods of patient classification, reported that staffing in all five hospitals related more closely to fluctuations in census than to patient classification.[20]

Increased recognition is found in the literature of developing a staffing scheme that varies nursing staff levels with actual needs for each unit. This suggests that the basic or fixed staff on each nursing unit would satisfy minimum demand. The assignment of additional staff would be based on relative peaks in demand. The supplementary staff would be assigned from a "float pool." The float pool can accommodate the peak work load condition that arises at different times for each unit.[21] The use of the float pool makes it possible for the total number of nursing staff members to be brought in line with total requirements, while the needs of each nursing unit at any given time are met. A staffing policy involving a "float pool" could achieve savings

of 9 to 12 per cent compared with traditional fixed staffing.[22]

A major phase of staffing, in addition to determining staffing requirements, is the distribution of personnel within the nursing department. The distribution of nursing personnel is not a particularly difficult task if the available resources are equal to the staffing requirements. The problem of distribution occurs when the available staff does not equal staffing requirements. The process of distributing nursing personnel is one of combining nursing activities and available personnel to maximize overall effectiveness.[23]

Wolfe and Young describe a method for assigning the appropriate level of staff required to carry out various nursing activities. The method utilizes a multiple assignment model which can vary the daily staffing to match the fluctuating needs of the patient. The distribution of nursing personnel is based on the education, training, and experience required to perform a specific identified nursing task. The multiple assignment model developed by Wolfe and Young requires a computer to determine the daily assignment of nursing personnel to specific patient workload.[24] The multiple assignment model has been recognized as an innovative approach

for determining staffing levels and distribution of personnel. However, it does not give ample consideration to the human elements involved in allocating personnel to a specific patient workload.[25]

Freund and Staats developed a method for assigning nursing personnel to patient care responsibilities based on a subjective assessment by nurses of the difficulty of tasks to be performed. Mathematical models were developed which optimally assigned nursing activities to personnel in such a way as to assure that each person was given the same amount of assigned difficulty.[26] This model can distribute a fixed pool of nursing personnel and provide assignments which will minimize the total difficulty of nursing tasks among all personnel. The model can produce an optimal mix of personnel which will most effectively utilize nursing personnel and maintain a given level of care.[27] The methodology of Freund and Staats is a mathematical model requiring a computer with a real-time capability to provide the daily distribution of nursing personnel.

The Personnel Allocation and Scheduling System (PASS) has an allocation function which is intended to minimize variability in the staff size to workload ratio for each

category of nursing personnel. The Personnel Allocation and Scheduling System and the other quantitative staffing methodologies which have a distribution function have failed to gain the support of the majority of nurses because they tend to broadly characterize the problems of allocation and fail to consider special conditions such as competency and experience of individual nursing personnel, and the special needs of individual patients. The failure to consider these special conditions will necessarily reduce the applicability of any general problem solution.[28]

Johns Hopkins Hospital (JHH) conducted research on nurse staffing which indicated that workloads of various nursing units were statistically independent: a heavy workload in one nursing unit was not associated with a heavy workload in another nursing unit.[29] JHH considered several nursing units as one unit for the purpose of staffing and established a float pool to augment those nursing units with a heavy workload. It was the experience of Johns Hopkins that a float pool of 20 per cent of the total staff was the optimal size.[30] The use of the float pool provided for the distribution of personnel among the nursing units and increased the probability of local adequacy of staff given a

fixed hospital staff.[31]

The vast majority of decision making in the distribution of nursing personnel is based on the experience of the individuals involved and their ability to juggle the many factors involved in resource allocation. The literature provides only broad guidelines for organizational patterns of staffing. Therefore, individual experience plays the dominant role in this most important decision-making process.[32]

A review of the literature indicates a movement toward increased usage of quantitative staffing methodologies. There is one lesson that can be learned from all prior attempts to quantitatively model the nursing unit for staffing decisions, for utilizing various skill mixes, for classifying patients to describe a workload, or for efficiently deploying float personnel; it is that, in the final analysis, the case is in the hands of the nursing staff. There are certain conditions that must be present in order to have the support of the nursing staff. The staff must agree that the methodology addresses a real problem. The proposed methodology must use measurements that are meaningful to the nursing staff. The solution must be presented in such a way that they are answers to the questions requiring attention.[33]

Footnotes

[1]Southwest Texas Methodist Hospital (Cleveland, Tenn." Hospitals Publications, Inc., 1971), p. 2.

[2]Christoph Maier-Rothe and Harry B. Wolfe, "Cycle Scheduling and Allocation of Nursing Staff" (Cambridge, Mass.: Arthur D. Little, Inc., n.d.), p. 1. (Microfilm, reel #697.)

[3]Ibid., p. 2.

[4]Elmina M. Price, Staffing for Patient Care (New York: Springer Publishing Co., Inc., 1970), p. 4.

[5]Richard Bettis, "Survey Indicates Health Jobs Remain Unfilled," Texas Hospitals, XXIX (March, 1974), 5.

[6]Price, p. 39; Marguerite Paetznick, A Guide for Staffing a Hospital Service, Public Health Papers No. 31 (Geneva, Switzerland: World Health Organization, 1966), p. 12.

[7]Committee on Nursing Services, American Nurses Association, "Statement on Nursing Staff Requirements for In-Patient Health Care Services," American Journal of Nursing, LXI (May, 1967), 1024-30.

[8]Jean Saunders Hunt, chairman, Committee on Quality of Organized Nursing Service in Hospitals, A Self-Evaluation Guide for Nursing Service in Hospitals and Related Institutions (New York: National League for Nursing, Inc., 1967), p. 46.

[9]Myrtle K. Aydelotte, "Standard: Staffing for Quality Care," Journal of Nursing Administration, III (March-April, 1973), 34.

[10]Ibid.; U.S., Department of Health, Education, and Welfare, National Institute of Health Division of Nursing, Publication No. (NIH) 73-434, Research on Nurse Staffing in Hospitals, Report of the Conference (Washington, D.C.: Government Printing Office, May, 1972), p. 12.

[11]Aydelotte, p. 35.

[12]Robert H. Edgecumbe, "The CASH Approach to Hospital Management Engineering," Hospitals, XXXIX (March, 1965), 71.

[13]David H. Harris, "Staffing Requirements," Hospitals, XLIV (April, 1970), 64.

[14]Aydelotte, p. 35.

[15]Ruth H. Stimson and David H. Stimson, "Operations Research and the Nurse Staffing Problem," Hospital Administration, XVII (Winter, 1972), 65.

[16]Ibid.

[17]Price, p. 82; Betty Tetreau, "Effective Management in the Nursing Department," Texas Hospitals, XXVIII (March, 1973), 33; Richard A. McCartney, Barbara McKee, and Lee D. Cady, "Nursing Staffing Systems," Hospitals, XLIV (November, 1970), 103; Harvey Wolfe and John P. Young, "Staffing the Nursing Unit," Nursing Research, XIV (Summer, 1965), 238.

[18]Aydelotte, p. 35; U.S., Department of Health, Education, and Welfare, pp. 13-15.

[19]Price, p. vi.

[20]Elmina M. Price, "A Study of Innovative Staffing," Hospital Progress, LIII (January, 1972), 29.

[21]Ibid., p. 68; Harris, p. 69; Wolfe and Young, p. 240; "Variable Staffing Adds Up the Patient Needs to Determine How Many Nurses Should Provide the Care," Modern Hospital, CXXI (December, 1973), 87.

[22]Stimson and Stimson, p. 65.

[23]U.S., Department of Health, Education and Welfare, National Institutes of Health Department of Nursing, Publication No. (NIH) 73-433, Nurse Staffing Methodology: A Review and Critique of Selected Literature, by Myrtle K. Aydelotte, (Washington, D.C.: Government Printing Office, January, 1973), p. 292.

[24]Wolfe and Young, p. 299.

[25]Aydelotte, p. 427.

[26]Louis E. Freund and Glenn E. Staats, "Model for Optimally Assigning Nursing Personnel Based on Difficulty," Research Report, Department of Industrial Engineering, University of Missouri, Columbia, September, 1974, p. 6.

[27]Ibid., p. 9.

[28]Ibid., p. 1.

[29]Stimson and Stimson, p. 63.

[30]Ibid., p. 64.

[31]U.S., Department of Health, Education, and Welfare, Research on Nurse Staffing, p. 31.

[32]Freund and Staats, p. 3.

[33]Ibid., p. 1.

CHAPTER II

DISCUSSION

Current Method for Establishing Requirements

Shared Management System for Texas Hospitals was contracted in October, 1968, to develop a method using work-time relationships to obtain maximum utilization of nursing resources. The industrial engineering approach defined all tasks that significantly affected the required staffing. These defined tasks and their appropriate frequencies and the time standards established for these tasks were used to define staffing goals. Frequencies of tasks were determined from historical data when possible. Frequency surveys were conducted in cases when this information was unavailable.

The system uses a patient classification scheme to subdivide patient groups according to their degree of self-sufficiency (Appendix C). Each nursing unit completes a Staffing Requirement Report (Appendix C) at 2 P.M. and 9 P.M. to determine staffing requirements for the evening, night, and day shift. The nursing supervisors use these reports to allocate personnel resources among the nursing units.

A float pool of 11 per cent of the total authorized

staffing hours provides personnel for vacation time, sick leave, and other absences.

The staffing for each nursing unit has been approved by the hospital administrator. The staffing authorized for each unit is determined by multiplying the projected average census times the authorized nursing care hours per patient day. This provides the authorized daily staffing hours. In addition, the administrator authorized a skill mix of 30 per cent registered nurses, 45 per cent licensed vocational nurses, and 25 per cent nurses' aides and orderlies. The present staffing methodology provides for 50 per cent of the staffing requirements be provided on the day shift, 35 per cent on evening shift, and 15 per cent on the night shift. Staffing as authorized by the hospital administrator is based on an average hospital occupancy of 85 per cent and a hospital average of 4.5 hours of care per patient day.

Southwest Texas Methodist Hospital uses a modified team-nursing concept when staffing permits and switches to functional nursing as necessary. The head nurses of the units determine which delivery mode will be practiced.

Problems with Current Method and Staffing Levels

The industrial engineering approach for determining staffing requirements has been in use for several years, and the system has been meeting the needs of the hospital. The methodology has adequately determined the requirements of the nursing units. The hospital has had an adequate supply of nursing personnel to satisfy the requirements of the nursing units.

The hospital had a waiting list of registered nurses desiring employment until recently when the new hospitals were opened. The hospital, at the time of the study, presently had unfilled positions for registered nurses. The nursing department had not experienced difficulty in hiring licensed vocational nurses. The licensed vocational nursing programs in the area were providing sufficient graduates to meet the requirements of the hospitals in the area. There was a high turnover of nursing aides and orderlies, which was normal for this position; however, the supply was adequate.

In the event of a loss of nursing personnel, the present industrial engineering methodology will still indicate requirements, but it will not address the distribution of personnel during periods of shortages. The float pool was

staffed to meet absences due to vacation or sickness. The float pool was not staffed to augment several nursing units during periods of peak demands. The size of the float pool has fluctuated because of the increasing difficulty in hiring registered nurses. The float pool as presently authorized does not have the capacity or capability to support the department of nursing in the event there is a sudden loss of registered nurses.

The major problem in achieving high personnel utilization is the variation in work load from one shift to the next. This requires the availability of personnel to meet peak work loads which are difficult to anticipate and which may not occur frequently. The greatest potential for maintaining high personnel utilization would appear to be further development of alternatives for floating personnel from other nursing units. The practice of having rotating work shifts can increase the effectiveness of distributing personnel resources. The practice at Southwest Texas Methodist Hospital of not rotating work shifts has resulted in underutilization of nursing personnel of the day and evening shifts.

Development of an Interim Staffing Method

The constant fluctuation in a hospital's work load necessitates a continuous appraisal of staffing requirements and personnel utilization. It is doubtful that the staffing level will exactly meet the nursing care hours required on all nursing units at all times unless staffing is based on 100 per cent occupancy and on the assumption that all patients are acutely ill. Staffing at this level is not realistic. A realistic approach to staffing would attempt to achieve a balance between the staffing level and nursing care requirements of the patient.

The development of an interim staffing methodology cannot be limited to the professional nurses; the licensed vocational nurse has to be recognized as a member of the nursing team. The job description of the licensed vocational nurse at Southwest Texas Methodist Hospital is indicative of the trend to give licensed vocational nurses a more important role in the delivery of patient care (Appendix D).

Several approaches were considered in developing an interim staffing methodology. One approach considered sharing the shortage of personnel equally among the nursing units. The float pool would be abolished and the personnel assigned

to nursing units. Relative overstaffing could exist and this would require personnel to be reassigned from unit-to-unit to meet peak demands. Morale can become a factor when personnel are not sure if they will work on their assigned unit or be floated to another unit.

Augmentation of the nursing staff by increasing the skill mix of licensed vocational nurses and nurses' aides was another consideration. Experimentation had demonstrated that some tasks could be delegated to properly trained and supervised nonprofessional personnel. It was important to recognize that the tasks performed by a nonprofessional aide or orderly should include those not requiring the preparation and judgment of a registered nurse or licensed vocational nurse.[1] The registered nurse had to provide the knowledge, expertise, and leadership to the licensed vocational nurse and the nonprofessional aides.

The third consideration was the development of a minimum fixed staff for each nursing unit combined with a float pool. The combination of a fixed minimal staff and an augmented float pool provided flexibility and capability to satisfy the interim staffing needs. The fixed staff on each nursing unit provided a stable, basic staff. The fixed staff

would not normally be floated to other nursing units. The fixed staff for each nursing unit was developed to satisfy minimum demand. The assignment of additional staff would be from the float pool on the basis of relative peaks in demand.

The modified census methodology determines the fixed staff for each nursing unit. The modified census methodology has to be flexible to meet peak demands. In order to meet these peak demands, a float pool of considerably greater size than presently authorized was indicated.

The initial step in the development of a minimum fixed staff was determining the total nursing hours available for each nursing unit. The nursing hours available for fixed staff was 80 per cent of the total nursing hours available. A 12-month retrospective analysis of the average occupancy rate and nursing hours for each nursing unit provided the nursing hours required for each of the nursing units. Dividing the available hours for fixed staff by the nursing hours required provided the percentage of required hours available in the form of fixed staff. The float pool of 20 per cent of the available nursing hours was for use in supplementing fixed staffing levels wherever needed (Appendix E).

The fixed staff for each nursing unit should be

computed on a quarterly basis to allow for changing trends in occupancy rates and whenever the available nursing hours change by 10 per cent.

This study selected patient nursing units for comparison. This included postpartum, medical, surgical, and pediatric units. In limiting the study to units that require a general level of nursing skills, it permits a float pool to develop around these general nursing skills. The specialty areas--operating room, labor and delivery, nursery, and the intensive care units--have staffing requirements for particular skills not normally associated with a float pool. If personnel who do possess these skills are assigned to a float pool under the modified census method proposed, it would indicate improper personnel management. This would be an underutilization of scarce skills. Neither is it desirable to assign personnel from a float pool to a unit when the individual lacks the knowledge and technical competence to perform satisfactorily.

The units selected for the modified census method will permit the assignment of personnel from the float pool to perform nursing functions that are common to all the units. The diagnosis and treatments given may vary from unit-to-

unit, but the nursing care requirements to meet the activities of daily living of the patients are common to all units.

The fixed staff on these selected units would provide the leadership and guidance necessary to the float pool personnel assigned to these units to assure continuity of nursing care. The registered nurses assigned to a float pool should be expected to assume charge-nurse duties on the nursing units.

Ideally, the skill composition of the float pool should have registered nurses and licensed vocational nurses. The percentage of registered nurses will, of necessity, be determined by their availability. The anticipated shortage of registered nurses may necessitate assigning all the registered nurses to the basic fixed staff.

The purpose of the float pool was to augment the nursing units during relative peak demands with higher skilled nursing personnel. The nurses' aide and orderly would not be included in the float pool. The inclusion of the nurses' aide and orderly in the float pool will dilute the skill level. Whenever there was substitution of less-skilled personnel, it increased the duties of the higher-skilled personnel on that unit. The nurses' aide or orderly can perform limited duties, requiring the higher skilled personnel to perform the duties

that the nurses' aide or orderly cannot perform. The registered nurse has to exercise considerably more supervision of the nurses' aide or orderly than the licensed vocational nurse. During times of personnel shortages it is preferable to have the more highly skilled registered nurse and licensed vocational nurse within the float pool rather than the nurses' aide or orderly.

Comparison of Staffing: Staffing Presently Authorized and proposed Method

The staffing authorized by the hospital administration was developed by the industrial engineering methodology as the recognized staffing requirements for the nursing units. The calculation of staffing for each nursing unit was accomplished by multiplying the occupancy rate times the nursing hours per patient day times seven to produce the weekly staffing hours authorized. The staffing hours indicated in Table 1 have been adjusted to include the forty or fifty-six hours for the position of the head nurse for each nursing unit. The staffing authorized each nursing unit is reviewed by the hospital administration on a yearly basis, or as indicated. A float pool of 11 per cent of the authorized staffing hours was established to provide personnel to nursing units who had personnel on sick

TABLE 1

STAFFING AUTHORIZATION

Nursing Unit	Bed Capacity	Occupancy Rate	NHPD[a]	Authorized Hours[b]
Post Partum	32	.80	3.4	644
2. Surgical	54	.85	4.4	1,472
3. Surgical	54	.90	4.4	1,552
4. Medical	53	.85	4.75	1,552
6. Medical	39	.90	4.9	1,432
7. Surgical	50	.85	5.03	1,552
8. Surgical	50	.85	4.99	1,552
9. West Surgical	30	.90	5.5	1,088
9. East Pediatric	25	.80	4.8	712
Float Pool[c]				1,272
Totals				12,849

[a]Nursing hours per patient day.

[b]Department of Nursing, "Authorized Staffing," Southwest Texas Methodist Hospital, San Antonio, Texas. Method of calculation: Bed Capacity X Occupancy Rate X NHPD X 7 = Weekly Nursing Hours Authorized. Local appraisal is included in the "Authorized Hours."

[c]Float Pool calculated as 11 per cent of the authorized hours.

leave, vacation, and other absences. The float pool was not established to augment the authorized staffing of the nursing units.

The modified census method was developed to provide flexibility in the distribution process of nursing personnel. The effective distribution of personnel to nursing units experiencing personnel shortages can be accomplished through the implementation of a basic fixed staff and a float pool to augment the fixed staff. The basic fixed staff was established as 80 per cent of the available nursing hours, and the float pool was established as 20 per cent of the available nursing hours. The float pool of 20 per cent of the available staffing hours provided the nursing department the flexibility to distribute personnel to nursing units experiencing a demand for nursing personnel exceeding the capability of the fixed staff. Table 2 indicates the allocation of fixed staff to each nursing unit and also indicates the number of staffing hours included in the float pool.

In comparing the staffing authorized the nursing department with the proposed staffing, there was a difference between the 12,849 staffing hours authorized and the 10,310 staffing hours available. The staffing hours available was

TABLE 2

STAFFING DETERMINED BY THE MODIFIED CENSUS METHOD

Nursing Unit	Available Nursing Hours	Available Hours for Fixed Staffing[a]	Nursing Hours Required[b]	Percentage of Required Hours Available in Fixed Staff[c]	Available Hours for Float Pool
Post Partum	594	475	645	74	119
2. Surgical	1,228	982	1,036	95	246
3. Surgical	1,503	1,202	1,488	81	301
4. Medical	1,463	1,170	1,451	81	293
6. Medical	1,127	902	1,071	84	225
7. Surgical	1,344	1,075	1,564	69	269
8. Surgical	1,465	1,172	1,408	83	293
9. West Surgical	969	775	975	79	194
9. East Pediatric	617	494	586	84	123
Totals	10,310	8,247	10,224		2,063

[a]Available Nursing Hours x .80.

[b]Average Nursing Hours Required for the past twelve months.

[c]Available Nursing Hours divided by the Nursing Hours Required.

19.8 per cent less than the staffing hours authorized. The summary of staffing in Table 3 indicates the effect of changing the float pool from 11 per cent of the authorized hours to 20 per cent of the staffing hours available. There was an increase in the size of the float pool from 1,273 hours to 2,063 hours, an increase of 61.7 per cent.

The proposed methodology permitted the difficult task of distributing personnel to meet the daily rapid changes in the demand for nursing care to be accomplished more effectively. The increased size of the float pool allowed personnel to be assigned on a demand basis which permitted matching various skills and capabilities of the nursing staff with specific patient tasks.

Supervisory and Administrative Responsibility: Effective Personnel Utilization

Effective utilization of nursing personnel is a necessity if efficient staffing levels are to be established. The success of any staffing method rests upon having the correct number of appropriately prepared personnel to meet the needs of the patient.[2] The census method in this study is based on the anticipated loss of nursing personnel. Therefore, coordination of the day-to-day staffing needs must be provided by

TABLE 3

SUMMARY OF STAFFING: PRESENT AUTHORIZATION AND THE PROPOSED CENSUS METHOD

Nursing Unit	Authorized Hours: Department of Nursing[a]	Staffing Hours Determined by the Census Method
Post Partum	664	475
2. Surgical	1,472	982
3. Surgical	1,552	1,202
4. Medical	1,552	1,170
6. Medical	1,432	902
7. Surgical	1,552	1,075
8. Surgical	1,552	1,172
9. West Surgical	1,088	775
9. East Pediatric	712	494
Float Pool	1,273	2,063
Totals	12,849	10,310

[a]Department of Nursing, "Authorized Staffing," Southwest Texas Methodist Hospital, San Antonio, Texas.

the nursing service administrators. The supervisory personnel will have to predict the number and kind of personnel needed to produce the volume and quality of nursing care required.[3]

Constant attention must be given to the scheduling of personnel hours. If the personnel are not effectively utilized, overstaffing can occur during periods of personnel shortage. The supervisory personnel have the responsibility of personnel distribution according to workload of the nursing units. This problem is most likely to occur when scheduling is based around personnel requests for days off. The primary concern in scheduling should be to meet the patient care needs of the unit through effective personnel utilization, with personal preferences for time off of secondary concern. The reversal of these priorities will cause any staffing methodology based on efficient and effective utilization of nursing personnel, and providing quality patient care to fail.

Footnotes

[1]Myron Fottler, "Manpower Substitution in the Hospital Industry: Some Causes and Implications," Hospital Administration, XVII (Summer, 1972), 35.

[2]Irene G. Ramey, "Eleven Steps to Proper Staffing," Hospitals, XLVII (March, 1973), 100.

[3]Ibid., p. 98.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Every department of nursing and every hospital administrator would like to have a guide that would stipulate the correct number of nursing-care hours needed to provide quality care to patients. It would be relatively simple to calculate the personnel needs from such a guide, but no guide has yet been devised.[1]

The various quantitative staffing methods attempt to quantify patient care needs. These methods should not be discredited, and their findings should be considered in calculating staffing requirements. However, these methods are not a substitute for the judgment of an experienced nurse.

The purpose of this study was to develop a methodology on which to base minimum staffing of the nursing service. The anticipated loss of nursing personnel would cause shortages on the nursing units studied.

The proposed methodology provides the nursing department with the flexibility to distribute nursing resources more effectively. The proposed methodology allocated 80 per

cent of the available staffing of each nursing unit to the fixed staffing of that unit. The fixed staff was augmented from a float pool which comprised 20 per cent of the total available staffing. The nursing department can assign personnel from the float pool according to the skills and experience required to perform specific patient tasks.

Recommendations

It is recommended that:

1. Fixed staffing requirements for each nursing unit should be established using the proposed methodology.

2. The float pool should be increased to 20 per cent of the available staffing hours.

3. The float pool should be limited to registered nurses and licensed nurses.

Footnote

[1]Price, Staffing for Patient Care, p. 11.

APPENDIX A

DEFINITION OF TERMS

DEFINITION OF TERMS

Float.--An employee who is not permanently assigned to any one nursing unit.

Float pool.--A composite of all the floats.

Head nurse (HN).--Refers to the professional nurse (RN) in charge of a specific ward, wing, or other designated nursing unit and the nursing care given in the unit.

Licensed vocational nurse (LVN).--An individual who has received at least nine months, but less than two years, of education in a state-approved vocational nursing school and is licensed by the state licensing agency. She assists the professional nurse with nursing care procedures.

Nurses' aide.--A female nonprofessional member of the nursing staff who has been trained through an inservice program to perform and assist with basic routine nursing care procedures under the supervision of a professional nurse.

Nursing unit.--A specific area of the hospital where nursing care is given.

Orderly.--A male nonprofessional member of the nursing staff who has been trained through an inservice

program to perform and assist with basic routine nursing care procedures under the supervision of a professional nurse.

Professional nurse (RN).--One who has successfully completed the educational requirements of an accredited nursing school or has obtained a Bachelor of Science degree in Nursing from an accredited school and is licensed by the state licensing agency.

Supervisor.--A professional nurse who is responsible for the overall organization and management of nursing care given on two or more nursing units.

APPENDIX B

QUALITY CONTROL CHECK SHEET

UNIT_____ ROOM_____ DATE_____ TIME_____

PATIENT_____ BY_____

DIAGNOSIS_____ DATE ADMITTED_____

NURSING CARE PLAN - KARDEX	YES	NO	N/A
1. Does the patient have an individual nursing care plan?			
2. Are objectives (goals) of nursing care plan defined?			
3. Does the plan indicate what nursing is needed?			
4. Does the plan indicate how needed nursing can best be accomplished?			
5. Are patient emotional and physical needs, along with suggested approaches, indicated?			
6. Is medication, treatment and other pertinent data current and complete?			
7. Does the nursing care plan reflect a program of patient teaching and rehabilitation, if applicable?			
8. Are drugs, other sensitivities and allergies noted?			
9. Is discharge planning included in plan?			
TOTAL			

PATIENT CARE RECORD	YES	NO	N/A
1. Is chart assembled in correct order?			
2. Are orders properly transcribed with notation of time and signature of nurse in correct place?			
3. Have physicians orders been carried out and charted?			
4. If orders are not completed, are pertinent comments made?			
5. Are pertinent observations regarding patient's condition noted?			
6. Was appropriate nursing action taken?			
7. Notification and/or visit of doctor noted, if pertinent?			

	YES	NO	N/A
8. Are medicines properly charted with time, method, dosage, initials and/or signatures indicated?			
9. Are pre-op medicines charted with pertinent comments noted in nursing notes? (Omit for O.R. Recovery)			
10. Are reasons for PRN medicines noted?			
11. Are acceptable abbreviations and medical terminology being used?			
12. Are treatments properly charted with time, and date, signature and effect indicated?			
13. Is intake and output properly recorded?			
14. Are vital signs graphic sheets current?			
15. Are patient care noted properly signed including proper title?			
16. Are charting errors legally noted and corrected in accordance with accepted procedure?			

TOTAL

OBSERVER'S COMMENTS (REFERENCE NUMBER)

UNIT_____ ROOM_____ DATE_____ TIME_____

PATIENT_____ BY_____

DIAGNOSIS_____ AGE___ DATE ADMITTED_____

PATIENT WELFARE AND COMFORT	YES	NO	N/A
1. Have adequate measures been taken to make the patient as comfortable as possible with no need for immediate attention?			
2. Patient appears to be receiving satisfactory emotional support?			
3. Evidence of good skin care?			
4. Teeth, mouth, hair & nails clean and in satisfactory condition?			
5. Dressings clean, dry, applied correctly?			
6. Clinical equipment properly applied and working?			
7. Appropriate personnel performing procedure correctly?			
8. Was patient and/or his family interviewed by an RN when admitted?			
9. Does he know what activity he is allowed?			
10. Has he been instructed in pre- and post-op care?			
11. Does he know what to do relative to diagnostic tests and procedures?			
12. Has he or his family been taught what is necessary to insure adequate home care?			
13. Patient satisfied with care he is receiving?			
14. Drinking water fresh, cool and available?			
TOTALS			

PATIENT SAFETY			
1. Identification band on wrist corresponds with chart?			
2. Appropriate protective and supportive devices (restraints, side rails, slings, etc.) correctly applied and functioning?			

	YES	NO	N/A
3. Call light and bedside controls, bedside table and personal effects within easy reach?			
4. Does electrical equipment appear safe?			
5. Environmental safety policies being followed (smoking, dangerous gases, etc.)?			
6. Is bed appropriately marked with patient's name and nursing instructions?			

TOTAL

PATIENT ENVIRONMENT

1. Bedpan labeled, empty, clean, free of odors and ready for use?			
2. Temperature, ventilation and lighting satisfactory?			
3. Bedside area and room clean and orderly?			
4. Lavatory facilities clean, orderly and well stocked?			
5. Noise level acceptable?			

TOTAL

OBSERVER'S COMMENTS (REFERENCE NUMBER)

FLOOR_____ UNIT_____ DATE_____ TIME____

BY_____

NURSING UNIT	YES	NO
1. Is the treatment room cleaned and sufficiently stocked?		
2. Are the lift baskets clean and stacked when not in use?		
3. Are the medicines to be refrigerated in the refrigerator?		
4. Is the emergency tray accessible, complete and the drugs not outdated? Is the plastic cover sealed if not in use?		
5. Is the medicine area tidy and clean?		
6. Have the discontinued drugs been sent to Pharmacy?		
7. Is the drug supply appropriate for needs?		
8. Is the stock level supply appropriate for needs of unit (including Central Supply cart if on unit?)		
9. Is the utility area clean and in order?		
10. Are wheelchairs folded, in good repair and in a safe place? Are stretchers kept in proper place and ready for use?		
11. Are linen and trash in appropriate containers with lid on?		
12. No unnecessary equipment in the corridor?		
13. Are the fire doors, fire escapes, and equipment readily accessible?		
14. Nurses station appear to be organized?		
15. Are patient community tub and shower and employee bathrooms clean and stocked?		
16. Is the noise level satisfactory in the nurses station?		
17. Is the lighting satisfactory in the nurses station?		
18. Is the doctors area neat and available for dictation?		
19. Are physicians using the appropriate phones if dictating?		
20. Are patient chair tables and commode chairs available, clean, and in good repair?		
21. Is the bulletin board current?		
TOTALS		

OBSERVER COMMENTS (REFERENCE NUMBER)

APPENDIX C

CARE PLAN AND PATIENT CLASSIFICATION

Southwest Texas Methodist Hospital

CARE PLAN AND PATIENT CLASSIFICATION

A. RESPIRATION AIDES AND SUCTION

1 point – Bedside humidifier - - - - - - ____
– stand-by routine suction- - - - - ____
2 point – cough & deep breath q 2 hrs. - - - ____
– oral suction PRN - - - - - - - ____
– O_2 PRN - - - - - - - - - - ____
– NASAL - pharyngeal suction PRN - ____
3 point – continuous O_2 - - - - - - - - ____
– cough & deep breath q 1 hr. - - - - ____
– TRACH suction q 1 hr. - - - - - ____
4 point – TRACH suction q 30 min. c̄ pt. - -
responsive - - - - - - - - - ____
5 point – TRACH suction q 30 min. c̄ pt.
unresponsive - - - - - - - - ____

B. CLEANLINESS

1 point – self bath, bed change - - - - - - ____
2 point – assist bath, bed change - - - - - ____
– sitz bath - - - - - - - - - - - ____
3 point – assist bath, occupied bed - - - - ____
– partial bath given, bed change - - - ____
– bathed & dressed by personnel (peds),
bed change - - - - - - - - - - ____
4 point – bathed & dressed by personnel,
special skin care, occupied bed - - ____

C. ACTIVITY

1 point – up in chair c̄ help once in 8 hrs. - - ____
2 point – up in chair c̄ help twice in 8 hrs. - ____
– walk c̄ assistance - - - - - - - ____
3 point – walk c̄ assist. of 2 personnel - - - ____
– turn q 2 hrs., bed fast - - - - - ____
4 point – turn q 1 hr., bed fast- - - - - - ____

D. DIET

1 point – feed self, or family feeds - - - - ____
2 point – feed self c̄ supervision - - - - - ____
– NPO - - - - - - - - - - - - ____
3 point – feed self c̄ constant staff presence - ____
– gastrostomy feeding q 4 hrs. - - - ____
– N/G tube irrig. q 2 hrs. - - - - - ____
4 point – feed patient totally by personnel - - ____
5 point – tube feeding more frequently
than q 4 hrs. - - - - - - - - ____

E. TOILET

1 point – toilet s̄ supervision - - - - - - ____
– specimen collection - - - - - - ____
2 point – toilet c̄ supervision - - - - - - ____
– uses bed pan - - - - - - - - ____
3 point – toilet c̄ stand-by supervision - - - ____
– daily colostomy irrigation - - - - ____
4 point – incont. average output - - - - - ____
5 point – incont. c̄ diarrhea - - - - - - - ____

F. VITAL SIGNS

1 point – TPR routine - - - - - - - - - ____
2 point – V.S. q 4 hrs. - - - - - - - - ____
– night check q 1 hr. - - - - - - - ____
3 point – V.S. & observation q 4 hrs. - - - ____
– V.S. q 2 hrs. - vital signs monitored - ____
4 point – V.S. & observation q 1 hr. - - - - ____
5 point – BP - pulse - respiration & neurological
evaluation q 30 min. - - - - - - ____

G. INTAKE & OUTPUT

1 point – routine I & O - - - - - - - - ____
– strain all urine - - - - - - - - ____
2 point – Clinitest and Acetest - - - - - - ____
– I.V. push medications - - - - - ____
4 point – continuous I.V.- - - - - - - - ____
– blood transfusion - - - - - - - ____
– hourly output - - - - - - - - ____
5 point – drainage c̄ frequent dressing changes ____

H. MISCELLANEOUS

1 point – modified isolation - - - - - - - ____
2 point – strict isolation - - - - - - - - ____
3 point – pt. pre-op (for OR in 24 hrs. or less) ____
– pt. post-op (had surgery in past
24 hrs.) - - - - - - - - - - - ____
– pt. on continuous monitor - - - - ____
4 point – patient instruction- - - - - - - ____
– patient markedly disturbed - - - - ____

POINTS	
A	
B	
C	
D	
E	
F	
G	
H	
TOTAL	
Classification	

N-24 Rev. 6/73

Care Plan and Patient Classification Form is filled out on each patient, then consolidated on the Staffing Requirements Report for each nursing unit.

Southwest Texas METHODIST HOSPITAL

STAFFING REQUIREMENTS REPORT DATE 19

ROOM/BED	✓ REV.	DISCG.	MIN. CARE E	MIN. CARE N	MIN. CARE D	PART. CARE E	PART. CARE N	PART. CARE D	TOTAL CARE E	TOTAL CARE N	TOTAL CARE D	ROOM/BED	✓REV.	DISCG.	MIN. CARE E	MIN. CARE N	MIN. CARE D	PART. CARE E	PART. CARE N	PART. CARE D	TOTAL CARE E	TOTAL CARE N	TOTAL CARE D
200												217-B											
201-A												220											
201-B												221-A											
202-A												221-B											
202-B												222											
203												223											
204-A												224-A											
204-B												224-B											
205-A												225-A											
205-B												225-B											
206-A												226-A											
206-B												226-B											
209-A												229-A											
209-B												229-B											
210-A												230-A											
210-B												230-B											
211-A												231-A											
211-B												231-B											
212												232											
213-A												233-A											
213-B												233-B											
214												234											
215												235											
216-A												236-A											
216-B												236-B											
217-A												237-A											
												237-B											
TOTALS												TOTALS											
Revision Totals												Revision Totals											

	EVENING		NIGHT		DAY	
	2 p.m. Prediction	9 p.m. Revision	2 p.m. Prediction	9 p.m. Revision	2 p.m. Prediction	9 p.m. Revision
ADMISSIONS						
DISCHARGES						
MINIMAL CARE						
PARTIAL CARE						
TOTAL CARE						
PRED. STAFF REQUIREMENT						
Actual Staffing R.N.						
L.V.N.						
N.A.						
ORD.						
TOTAL						

N-25 (2)

Care Plan and Patient Classification Form is filled out for each patient, then consolidated on the Staffing Requirements Report for each nursing unit.

APPENDIX D

JOB DESCRIPTION: LICENSED VOCATIONAL NURSE

SOUTHWEST TEXAS METHODIST HOSPITAL

JOB TITLE: Licensed Vocational Nurse

DEPARTMENT: Nursing Service

JOB SUMMARY

The LVN is an integral part of the nursing team. The LVN performs those functions delegated and assigned to her by the professional nurse. In simple nursing situations, the LVN works with minimal guidance and supervision. In more complex situations the LVN functions as an assistant to the professional nurse.

PERFORMANCE REQUIREMENTS

A. Responsible for:

1. Knowledge of the scope and limitations of the practice of vocational nursing and personal conformance within these limits.
2. Participating in the planning, implementation, and evaluation of nursing care for the patients assigned by the professional nurse.
3. Maintaining a therapeutic environment for patients assigned to his/her care.
4. Observing, recording, and reporting information pertinent to the safe and effective care of the patients.
5. Knowledge of the organizational structure of the hospital and the nursing service department and the appropriate use of the channels of communication.
6. Developing effective interpersonal and interdepartmental relationships with subordinates, peers, and superiors.
7. Proper utilization of time, equipment, and supplies in the performance of his/her duties.
8. Maintaining a well-groomed physical appearance.

B. Physical demands:

1. Good physical and mental health.

C. Special demands:

1. Tact and diplomacy in dealing with patients, visitors,

doctors, and co-workers.
2. Accuracy and reasonable speed in the completion of assignments.
3. Discretion in handling confidential information.
4. Dependability and flexibility in a variety of nursing situations and assignments.

WORK PERFORMED

A. Participates in the planning, implementation and evaluation of nursing care in complex situations and in giving care in simple nursing situation by:

1. Providing for the emotional and physical comfort, and safety of patients under the guidance and supervision of the professional nurse through:

a. Understanding of human relationships between and and among patients, families and personnel.
b. Recognizing and understanding cultural backgrounds, spiritual needs, and respecting the religious beliefs of individual patients.
c. Recognizing and understanding the effects of social and economic problems upon patients.
d. Protecting patients from behavior that would damage their mental or physical health.
e. Participating in the development, revision, and implementation of policies and procedures designed to insure comfort and safety of patients and personnel.
f. Assisting the patient with activities of daily living and encouraging appropriate self-care.
g. Considering needs of the patient for an attractive, comfortable and safe environment.

2. Observing, recording, and reporting to the professional nurse:

a. General physical and mental condition of patients, signs and symptoms which may be indicative of a change in his condition.
b. Problems in human relationships between patients and patients' families, visitors, and personnel.

3. Performing nursing procedures for which the experience and inservice preparation of the LVN has provided the necessary degree of skill and judgment, such as:

   a. Administration of selected medications and treatments prescribed for the patient.
   b. Preparation and care of patients receiving specialized treatments.
   c. Performance of special nursing techniques in caring for patients with communicable diseases.
   d. Practice of first-aid measures.
   e. Preparation and after care of equipment for treatments, including sterilization and observation of medical and surgical aseptic techniques.

4. Assisting with the rehabilitation of patients according to the nursing care plan by:

   a. Awareness of and encouraging the interest and special aptitudes of patients in their rehabilitation.
   b. Encouraging patients to help themselves within their own capabilities and limitations in performing activities of daily living.
   c. Knowledge and application of the principles of prevention of deformities; the normal range of motion; body mechanics and body alignment.
   d. Utilizing the community resources and facilities for continuing patient care.

B. Promoting public awareness and effectiveness of Methodist Hospital by:

1. Utilizing opportunities in contacts with patients' relatives to promote better understanding of hospital policies.
2. Fostering co-operative effort through understanding the functions of all members of the health team.
3. Utilizing community resources and relationships to promote better understanding by the public health services.

QUALIFICATIONS

A. Education:

1. Pre-service preparation in a program of vocational nursing approved by the Texas state board of nurse examiners.
2. Licensed to practice in Texas.

B. Training and experience:

1. Previous experience is desirable, but not necessary.
2. Completion of the specified orientation program for LVN's at Southwest Texas Methodist Hospital.

C. Job knowledge:

1. Demonstrate the ability to give safe and effective care to patients in simple nursing situations.
2. Demonstrate the willingness and ability to give safe and effective care to patients in more complex nursing situation under the supervision and direction of the registered professional nurse.

WORKING ENVIRONMENT

A. Work inside, in a clean, well-lighted, well ventilated department.

B. Exposure to communicable diseases and disagreeable odors.

C. Possibility of injury from moving the patients and equipment.

D. Protected by the hospital by means of workman's compensation insurance and liability insurance described by insurance policies.

JOB RELATIONSHIPS

A. Source of workers:
Vocational nursing school graduates.

B. Promotion from:
Student status.

C. Promotion to:
No formal line of promotion; merit ratings indicate performance level.

D. Supervised by:
Professional nurse.

E. Workers supervised:
Other vocational nurses, vocational students, nurse aides and orderlies according to delegation and assignment by the professional nurse.

APPENDIX E

METHOD OF CALCULATING PROPOSED STAFFING

METHOD OF CALCULATING PROPOSED STAFFING

1. Determine total nursing hours available for each nursing unit.

2. Determine hours of nursing care available for fixed staffing. Fixed staff for each nursing unit was selected as 80 per cent of the nursing hours available for that nursing unit.

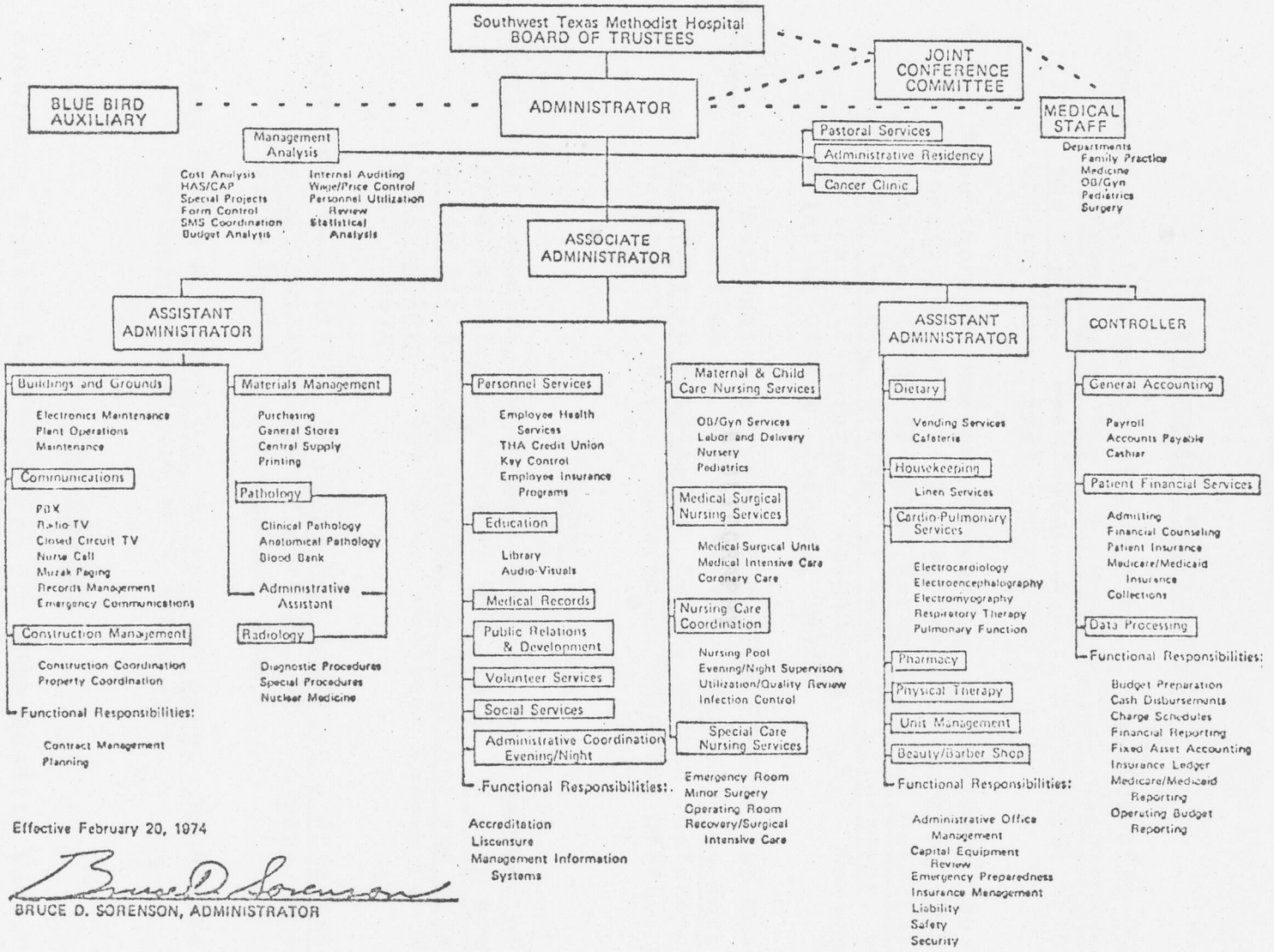
3. The Nursing Hours Required were the average hours of staffing required for the 12-month average occupancy rate for each nursing unit.

4. The percentage of required hours available in the form of fixed staffing is computed by dividing the available hours for fixed staffing by the nursing hours required for each nursing unit.

5. The available hours for the float pool are determined by subtracting the available hours for fixed staffing from the available nursing hours for each nursing unit.

APPENDIX F

ORGANIZATIONAL CHART



Effective February 20, 1974

Bruce D. Sorenson

BRUCE D. SORENSON, ADMINISTRATOR

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ABSTRACT

A STUDY TO DEVELOP A METHODOLOGY TO BE USED
IN DETERMINING MINIMUM NURSING REQUIREMENTS
AT SOUTHWEST TEXAS METHODIST HOSPITAL,
SAN ANTONIO, TEXAS

A Problem-Solving Thesis Submitted to the Faculty of Baylor University
in Partial Fulfillment of the Requirements for the Degree of
Master of Hospital Administration

by
Lieutenant Colonel Robert F. Duffy, ANC

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This study determined an applicable staffing method on which to base minimum staffing of the nursing service, Southwest Texas Methodist Hospital, San Antonio, Texas. The method developed a minimal fixed staff for each nursing unit and a supplemental staff to be assigned from a "float pool."