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## Testimony

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# WARTIME MEDICAL CARE

## Aligning Sound Requirements With New Combat Care Approaches Is Key to Restructuring Force

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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss wartime medical requirements. In particular, you asked us to discuss the results from our ongoing review of the Department of Defense's (DOD) study of the military medical care system.

DOD's medical system costs about \$15 billion annually and employs about 227,000 active duty and reserve personnel. Section 733 of the National Defense Authorization Act for Fiscal Years 1992 and 1993 required DOD to conduct a study to, among other things, determine (1) the size and composition of the military medical system needed to support U.S. forces during a war or other conflict and (2) any adjustments needed for cost-effective delivery of medical care to covered beneficiaries during peacetime. DOD's study (referred to as the "733 study") has challenged the Cold War assumption that all medical personnel employed during peacetime are needed for wartime. Its conclusion that wartime medical requirements are much lower--by as much as half--than the medical system programmed for fiscal year 1999 raises the question of whether U.S. military medical forces should be reduced to only those needed for wartime. This question has enormous implications for how care will be provided in wartime and peacetime.

I would like to first give you our overall views on the 733 study and then talk in more detail about our analysis of the study.

#### RESULTS IN BRIEF

Based on our review, we believe the 733 study's conclusion that wartime requirements could be met with fewer resources than those programmed for fiscal year 1999 is credible. This is particularly true in light of the fact that the number of active duty and reserve physicians has remained relatively stable since the days of the Cold War while the total number of forces has declined significantly. On the other hand, the study does not represent a precise estimate of wartime medical requirements nor a road map for deciding which capabilities, units, and personnel are no longer required for wartime care. Thus, even if one accepts the magnitude of the wartime requirements estimated by the study, it does not follow that the existing system, as currently configured, should be cut in half.

We believe that the 733 study employed a reasonable methodology for identifying wartime requirements. However, the Commanders-In-Chief (CINCs) for the two major combat theaters were not involved in the study. Using the same methodology that was used for the 733 study, the CINCs' operations plans produce much higher wartime medical requirements because they use different assumptions that result in higher numbers of casualties and longer stays in the military medical system. While the 733 study appears to have better information on some assumptions than the CINCs use, other key differences--such as the nature of the combat--have not yet been reconciled. Even if the CINCs were to prevail on the unreconciled assumptions,

the result would be to offset some--but not all--of the reductions envisioned by the 733 study.

Before reductions in wartime hospital beds or physicians are contemplated, it is important to recognize that the 733 study was a snapshot of the medical system in place--absent its limitations--not a vision of what the system should look like in the future. Such a vision is necessary to intelligently transition to a smaller, but better, system of medical care. In fact, the wartime system may have to be retooled from a heavy, hospital-based system to a lighter, more mobile care-based system. The individual military services and the Joint Staff are working on future medical care concepts that could dramatically affect the organization and composition of wartime medical units. Agreement on the key factors that affect demand for medical care is critical to arriving at the best wartime medical care system for the future, for it will enable decisionmakers to direct their attention to optimizing the medical care system for that demand. It should be recognized at the outset that an optimized system may differ from the sum of individual efforts underway.

## BACKGROUND

DOD's Office of Program Analysis and Evaluation (PA&E) was responsible for the 733 study and completed it in April 1994. The study reflected the defense planning guidance of being prepared to fight in two nearly simultaneous major regional conflicts--one in Korea and the other in Southwest Asia. As measures for the medical system, the study focused on (1) the number of hospital beds demanded by casualties and (2) the number of physicians required to meet those demands. PA&E chose fiscal year 1999--the last year of the future year program in effect at the time--as a baseline for comparing revised requirements against.

Generally speaking, PA&E defined the demand for medical care in terms of the number of casualties generated by the conflicts and the number of needed beds. To determine the demand for medical care in each conflict, PA&E derived the theater and the continental U.S. bed requirements using DOD's standard modeling system, the Medical Planning Module.

The services estimated the number of physicians necessary to treat the casualties. The services used their existing staffing tables to calculate the number of physicians needed to (1) staff hospital beds and (2) perform duties outside hospitals as part of military units and for such functions as command and control. An exception is that PA&E, rather than the services, calculated the number of physicians needed to staff the hospital beds in the continental United States.

PA&E also identified the number of additional physicians needed during peacetime to maintain medical readiness--referred to as the augmented case. Such physicians are needed for the graduate medical education training program, for rotation of deployed

medical personnel, and for staffing of overseas military hospitals. PA&E used an overall staffing factor to derive the number of physicians needed.

733 STUDY RESULTS

As shown in table 1, the 733 study projects that significantly fewer physicians are needed for wartime compared to those programmed for fiscal year 1999.

Table 1: Wartime Physician Requirements as Portrayed in the 733 Study

	Active duty physicians	Reserve physicians	Total physicians
Fiscal year 1999 program	12,600	6,500	19,100
733 study base case (percent difference from 1999 program)	4,000 (-68%)	5,000 (-23%)	9,000 (-53%)
733 study augmented during peacetime (percent difference from 1999 program)	6,300 (-50%)	8,200 (+26%)	14,500 (-24%)

The base case represents a 53-percent lower requirement than the fiscal year 1999 program, but refers only to those physicians needed to administer care to wartime casualties. It excludes the additional number of physicians needed for medical readiness during peacetime (augmented case). In the augmented case, which adds these physicians to the base case, the study shows active duty physicians could be lower by 50 percent. However, this reduction is offset by about half due to an increase in the number of reserve physicians required.

According to the 733 study, the number of beds needed to meet wartime requirements is lower by about the same magnitude as the number of physicians. The reduced requirement is most pronounced in the number of beds needed in continental United States to treat casualties; the study concludes that the requirement for continental U.S. hospital beds is 9,000, compared with 30,000 contained in the fiscal year 1999 program. The number of beds in the combat theaters would be lower as well, but by a lesser amount. The precise numbers of theater beds are classified.

While much attention has focused on the lower requirements produced by the study, it is important to put the fiscal year 1999 comparison number into perspective. Unlike the wartime requirements estimated by the 733 study, the 19,100 physicians programmed for fiscal year 1999 are historically derived. Table 2 shows the comparison of active duty and reserve force levels, medical personnel, and physicians for fiscal years 1987-1994.

Table 2: Comparison of Active Duty and Reserve Forces, Medical Personnel, and Physicians, for Fiscal Years 1987-1994 (As of End of Fiscal Year)

Fiscal year	Active and reserve forces	Active and reserve medical personnel	Active and reserve physicians
1987	3,325,069	244,298	19,089
1988	3,296,571	251,573	19,743
1989	3,300,789	251,863	20,982
1990	3,222,570	261,076	22,028
1991	3,157,184	267,833	21,900
1992	2,923,036	255,261	20,759
1993	2,762,779	247,715	20,028
1994	2,608,820	227,357	19,479
Percent change 1987-1994	-21.5%	-6.9%	+2.0%

As shown in table 2, since 1987, the overall force level has dropped by 21.5 percent, the number of medical personnel has dropped 6.9 percent, but the number of physicians has increased 2 percent. Over this same period, the number of DOD hospitals and bed capacity have also been reduced somewhat.

It is important to note that a reduction in the size of the medical force to meet only the wartime requirements projected by the 733 study would not necessarily generate windfall cost savings. Because DOD remains responsible for providing medical care to its beneficiaries, reducing the capacity of its medical facilities is likely to cause an increase in the amount of medical care provided through its insurance program. In fact, the study compared the costs for DOD to provide such care in its own facilities or to purchase the care through its insurance program. This analysis concluded that

insurance would be cheaper unless DOD could better control access to its medical facilities.

#### FOUR ASSUMPTIONS DRIVE LOWER WARTIME MEDICAL REQUIREMENTS

In analyzing the 733 study's methodology and identifying the factors that drove requirements down, we noted that the fiscal year 1999 program number represented more a forecast of available medical resources than an estimate of requirements. Therefore, we used the CINC plans to compare with the 733 study because they (1) represent the most authoritative set of requirements, (2) are contemporaneous with the 733 study, and (3) are constructed in a similar manner. The CINC-generated requirements do not tie directly to the fiscal year 1999 program number, but do support significantly higher numbers than the 733 study.

Our comparison disclosed that in the aggregate, the CINC plans for Korea and Southwest Asia anticipate over twice as many casualties and over twice the number of required beds than the 733 study. Differences in four assumptions explain why the 733 study produces lower medical requirements than those estimated by the CINC plans. The 733 study assumed

- a smaller population at risk exposed to injuries,
- significantly lower rates of casualties from disease and non-battle injuries (DNBI),
- a less intense warfight modeled for the Korea conflict generating fewer wounded-in-action casualties, and
- much quicker movement of patients out of the continental U.S. military hospital system.

#### Population at Risk

The population at risk is the number of individuals in the theater who are exposed to the risk of injury. The CINC plans envision a 13 percent larger maximum population at risk for the two conflicts combined than the 733 study. The population at risk in the CINC plan for the Korean conflict scenario is substantially larger--34 percent. Because both wounded-in-action and DNBI rates are applied to a larger military force, it leads to more casualties requiring medical treatment. Moreover, our recent classified report stated that the population at risk for the Korea scenario would likely be substantially greater than that reflected in the CINC plan.

The higher population at risk may be offset somewhat because PA&E and the CINC plans used the fiscal year 1995 base force. The base force is about 9 percent larger than the Bottom Up Review force, which reflects the current plans for the size of the future military force.

DNBI Rates

The CINC plans for the two conflicts generally use higher DNBI rates than the 733 study. This results in increased numbers of casualties and the need for additional hospital beds and physicians. These rates account for most of the difference in theater hospital admissions between the operations plans and the 733 study for the two conflicts. The CINC plans use higher rates for the forward and rear areas of the theater as shown in table 3.

Table 3: Comparison of DNBI Rates in CINC Plans and 733 Study

		Percent DNBI rates are higher in CINC plans than 733 study	
Service	Area	Korea	Southwest Asia
Air Force	Theater-Forward Area	75	538
	Theater-Rear Area	75	365
Army	Theater-Forward Area	272	234
	Theater-Rear Area	197	8
Marines	Theater-Forward Area	(22)	(71)
	Theater-Rear Area	(29)	(78)
Navy	Theater-Forward Area	40	(33)
	Theater-Rear Area	67	(49)

The Air Force and the Army forces constitute the majority of the population at risk in both conflicts combined. Therefore, the higher Air Force and Army DNBI rates produce far more casualties that are only somewhat offset by the DNBI rates that are applied to the other services.

There are strong indications that the DNBI rates developed for the 733 study are more reasonable than those used in the CINC plans. First of all, the 733 study rates were developed through recent extensive research whereas the rates in the CINC plans date back to the Korean Conflict and World War II. In addition, the DNBI rates used in the 733 study were the product of negotiation between the PA&E staff and representatives of all the services. The service representatives agreed to lower DNBI



rates for use in the 733 study after being convinced that PA&E's research and analysis provided a more rational basis for the lower rates than was the case for the higher rates that had been previously used by the services.

Another indication that the 733 study DNBI rates may prove to be more reasonable is the fact that the higher rates used by the CINCs are under review. According to Joint Staff and service representatives, these DNBI rates are being reviewed by their offices and the new rates are expected to be much less than those being used by the CINCs and will be much closer to those used in the 733 study. The new rates will be recommended to the CINCs after agreement is reached in the services.

#### Warfighting Assumptions

Another significant difference in the hospital admissions produced by the CINC plans and the 733 study can be traced to assumptions on the predicted intensity of the conflict and the positioning of the theater combat forces. Using greater battle intensities and positioning a greater proportion of the forces in the combat zone produce much greater numbers of wounded-in-action casualties that must be treated in the theater and the continental U.S. hospitals. Such casualties often require extended care and place a greater demand on medical resources than a like number of DNBI patients.

The combat intensity rates used for the CINC plan for the Korean conflict scenario are much higher than those used in the 733 study, but the ones used in the CINC plan for the Southwest Asia conflict scenario are much closer, as shown in table 4.

Table 4: Comparison of Combat Intensity Rates in CINC Plans and 733 Study

Services	Percent rates are higher in CINC plans than 733 study	
	Korea <sup>a</sup>	Southwest Asia
Air Force	A	138
	B	141
Army	A	89
	B	62
	C	19
Marines	80	6
Navy	72	23

<sup>a</sup>The CINC's plan for the Korean conflict scenario broke the Air Force's forces into two components (A and B) and the Army's forces into three (A, B, and C).

The CINC plans for both the Korea and Southwest Asia scenarios position a greater proportion of the theater forces in the forward area of the combat zone than the 733 study. Greater numbers of wounded-in-action casualties occur in the forward areas. Proportionally, CINC plans for Korea and Southwest Asia position 12 percent and 7 percent, respectively, more forces in the forward area of the combat zone than does the 733 study.

At this point, the differences in these warfighting factors are unresolved. The 733 study drew its warfighting assumptions from the Joint Staff; the CINCs were not consulted. Therefore, these assumptions were not reconciled with the CINC plans. Agreement on a single warfighting scenario is fundamental to both the CINCs, who must execute the scenario, and DOD planners who determine the resources the CINCs will receive.

## Movement of Casualties Outside the Military System

The 733 study reflects a much lower requirement for beds in the continental U.S. military hospital system than the CINC plans. The primary reason for this difference is that the 733 study transfers casualties to the National Disaster Medical System<sup>1</sup> components outside the military system much sooner. This reliance on the non-military portions of the National Disaster Medical System reduces considerably the U.S. military hospital capacity needed for wartime.

An increased role for the National Disaster Medical System has advantages because it reduces the wartime requirement for the continental U.S. military hospital beds and their associated medical staffing. However, our prior work<sup>2</sup> identified several problems with the capability of the National Disaster Medical System to handle large numbers of casualties. For example, we found that the number of beds expected to be available in DOD, VA, and other National Disaster Medical System hospitals was overstated. However, National Disaster Medical System officials have stated that they are aware of the system's shortcomings and have developed a plan to correct them.

In addition, the nation's non-federal hospital system outside the National Disaster Medical System has considerable excess capacity, which if called upon to treat patients returning from the theater, would likely respond.

## OTHER CONSIDERATIONS IN USING THE 733 STUDY

In conducting the 733 study, PA&E did not (1) resolve a disagreement with the services on the number of physicians needed for medical readiness during peacetime (augmented case) or (2) incorporate how the effectiveness of the present military medical system needs improvement. These factors must be accounted for when using the study's results.

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<sup>1</sup>The National Disaster Medical System is a partnership venture involving DOD hospitals, the Department of Veterans' Affairs (VA) hospitals, and more than 1,800 non-federal hospitals to provide care to casualties from domestic disasters or conventional military conflicts.

<sup>2</sup>Health Care: Readiness of U.S. Contingency Hospital Systems to Treat War Casualties (GAO/T-HRD-92-17, Mar. 25, 1992).

Services Contend Study  
Understates Physicians Required  
for Medical Readiness

Service officials contend that the 733 study estimate of 5,500 physicians needed for wartime medical readiness (graduate medical education, rotation, and overseas staffing) during peacetime is understated by 3,433 physicians (62 percent). These differences have not been resolved. In contrast to the detailed calculation of beds and physicians needed for treatment of combat casualties, the study used gross estimating techniques to calculate the additional physicians needed for these activities during peacetime. The services' more detailed analyses produced a higher requirement for such physicians. While the services were involved to a considerable extent in developing the wartime requirement for physicians to support the major regional conflicts, the services did not participate in identifying the number of physicians needed to meet these requirements.

On the other hand, there are concerns that DOD currently has too many graduate medical education programs<sup>3</sup>. DOD's Office of the Inspector General has work underway reviewing the need for the various graduate medical education programs in DOD.

Current Military Medical System  
Likely to Need Reconfiguration

The 733 study did not account for the problems affecting the present military medical system. These problems need to be addressed in an estimate of wartime medical requirements. The 733 study essentially took a snapshot of the present system, absent its limitations, and applied it to the wartime demand for care developed by the study.

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<sup>3</sup>In 1994 DOD operated about 300 graduate medical education programs in areas such as internal medicine, pediatrics, surgery, and orthopedics.

The ability of the services' medical forces to meet the wartime mission was called into question in several studies that GAO<sup>4</sup> and the DOD Inspector General<sup>5</sup> performed after the Persian Gulf War. We found several problems with the services' medical forces including (1) many non-deployable personnel due to such factors as unacceptable physical conditions, lack of required skills, and mismatches in medical specialties; (2) a lack of training for wartime missions; and (3) inadequate or missing equipment and supplies. We also found problems with the processes to move and evacuate casualties, which could have led to the underuse of some hospitals and the overwhelming use of others. To the extent that such problems are not corrected, a larger medical system would be needed to offset the resultant loss of capability.

DOD and the services themselves have identified the need for several improvements in wartime medical capabilities based on lessons learned from involvement in Desert Shield/Storm and subsequent operations. Among these are the need for the theater medical system to be smaller, lighter, more mobile, and more capable. The services also recognize that their medical capabilities need to better support such operations as disaster relief and humanitarian support.

DOD and the services have major initiatives underway to examine how to improve wartime medical capabilities. For example, the Joint Staff has initiated a major initiative, known as the Joint Warfighting Capability Assessment, which, among other things, is to develop medical readiness assessment indicators and develop a new medical doctrine to improve the medical responsiveness to future medical demands. Some of the concepts of care being considered represent radical departures from today's system. Each service is also assessing the configuration of medical operations. While these reconfiguration efforts are incomplete at this time, it is possible that the organization and operation of medical units may differ substantially in the future from the medical force portrayed in the 733 study. It is unknown at this time how the reconfigured military system will impact the number of hospital beds and physicians required.

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<sup>4</sup>Operation Desert Storm: Full Army Medical Capability Not Achieved (GAO/NSIAD-92-175, Aug. 18, 1992); Operation Desert Storm: Improvements Required in the Navy's Wartime Medical Care Program (GAO/NSIAD-93-189, July 28, 1993); Operation Desert Storm: Problems With Air Force Medical Readiness (GAO/NSIAD-94-58, Dec. 30, 1993).

<sup>5</sup>Inspector General, Department of Defense, Medical Mobilization Planning and Execution (93-INS-13, Sept. 30, 1993).

## CONCLUDING REMARKS

The challenge facing medical decisionmakers is to agree on (1) the demand for medical care as dictated by projected casualties and (2) the most effective and efficient way to provide that care. The 733 study makes a strong argument that wartime demands will not require as large a military medical system as programmed for fiscal year 1999. Yet, several key variables which greatly affect the wartime demand for medical care are still in debate. Settling these issues will enable medical decisionmakers to focus on more finite, albeit projected, demands for wartime care.

Once the demand issue is settled, DOD and the services can then make better decisions on how to effectively and efficiently provide the required medical care. While the services are embarking on efforts to reconfigure their medical units and several DOD components are working on solutions to medical capability problems, it is open to question as to whether the individual efforts will add up to the best system to meet future wartime medical demands. We believe a joint approach to developing a concept of wartime medical care that is aligned with projected demands will enable DOD and the services to focus management on getting to the best system. I would reiterate our belief that cutting the current system in half is not the optimum solution.

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Mr. Chairman, this concludes my prepared statement. I will be glad to respond to any questions you or other members of the Subcommittee may have.

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