

Section 733 Update: Report of the Working Group on Sustainment Base and Training

Introduction

The purpose of this report is to identify the number of military physicians required on active duty beyond those needed to support wartime operations. The military maintains more physicians in the active component than wartime missions require, for several reasons. One of the most important is the need to staff medical facilities that serve military populations posted in locations with very limited or no access to civilian health facilities. Examples include operating locations overseas and some extremely remote sites in the continental United States (CONUS). This “peacetime operational requirement,” added to the wartime estimate, yields a sum that generates two additional sustainment requirements. The first is a population to and from which operationally-based physicians will normally rotate (known as the “rotation base”). The second is a training pipeline to feed the sum of all these requirements (wartime, peacetime operational, and rotation base).

This report summarizes the results of a two-year effort by the Working Group on Sustainment Base and Training. The group was one of three teams formed to update estimates of physician requirements published in the 1994 “Section 733” study. The revised estimates were called for in an August 1995 Program Decision Memorandum (PDM) issued by the Deputy Secretary of Defense. The follow-on assessment was commissioned in an effort to gauge the effects on physician end-strength requirements of changes in U.S. force levels and planning scenarios that had occurred since the Section 733 study was conducted.

The working group took as a given the number of physicians required for two major regional conflicts (MRCs) occurring nearly simultaneously. Reestimating the wartime requirement was the task of another working group. The question addressed by the Sustainment and Training Working Group was: For each physician required in wartime, how many more must be employed in peacetime? The supplemental requirement is referred to here as the “sustainment and training base.”

This report focuses primarily on medical personnel in the active component. It does so because, in contrast with sustainment and training (S&T) programs of the active component, the sustainment and training of reserve component medical personnel generally does not impose additional requirements for active-duty billets.

In assessing S&T requirements, the working group organized active-duty physicians into five categories:

- Those committed to care for the beneficiary population abroad (OCONUS).

- Those committed to care for the beneficiary population in medically isolated areas of the continental United States (ICONUS), where competent civilian care givers are impossible to attract regardless of economic considerations.
- Those physicians needed to meet mobilization requirements beyond primary platform manning and categories already mentioned, including casualty replacements, certain research and development (R&D) personnel, and residual personnel needed to offset the small percentage of the active-duty medical force that would temporarily be unavailable for deployment for medical or administrative reasons.
- Those physicians required beyond mobilization to serve as a peacetime “rotation base” for like personnel assigned to OCONUS, ICONUS, or operational billets.
- A sufficient number of physicians in education and training pipelines to maintain a fully trained medical force that meets the above requirements.

At the request of the Air Force, two additional categories of physicians—command and control and community health physicians—were considered by the working group. As discussed below, the group was able to reach consensus on all but one category—community health physicians.

The working group also was charged with determining the number and size of military treatment facilities (MTFs) needed to care for combat and related casualties and for those peacetime beneficiaries who, by policy, must be treated in MTFs. In addition, the working group evaluated the size of the MTF establishment needed to support training requirements for the military medical corps. The last section of this report discusses the sizing of the medical plant and the factors that influence plant size.

Are There Enough Uniformed Medical Personnel to Care for U.S. Service Members^{3/4} In Peacetime and War?

Health care for military personnel is an integral part of readiness. Because readiness may require judgments about the appropriate treatment of cases in a military environment, and because it requires judgments about service members' fitness for duty, care for military personnel on active duty is usually provided by uniformed medical personnel.

In peacetime, physicians who are earmarked to deploy with field hospitals or who are attached to military units are available, in ample numbers, to provide this care to the active-duty force. (Such care accounted for approximately 20 percent of the workload at DoD medical facilities in 1994.)

In the event of two nearly simultaneous regional conflicts, medical personnel attached to units remaining in CONUS, reservists brought on active duty to provide casualty care, and other reserve component physicians would be available in sufficient numbers to continue the provision of care for non-deploying military members.

OCONUS Facilities

The military departments operate a variety of medical facilities outside the United States. These hospitals and clinics serve military personnel stationed abroad and their dependents. The larger of these facilities also provide a degree of “forward deployed” medical capability that complements the care offered by deployable medical systems. Thus, fixed OCONUS facilities have missions both in peacetime and during wartime mobilizations.

Medical personnel stationed abroad are periodically rotated back to the United States for duty in CONUS medical facilities. Such rotations provide these individuals an opportunity to maintain their skills, while satisfying the desire expressed by many to live and raise their families in the United States. The derivation of rotation requirements is discussed in a later section of this report. The issues addressed here deal solely with the staffing requirements of OCONUS facilities.

The working group used a three-step approach to determine requirements for active-duty physicians generated by OCONUS hospitals. First, OCONUS facilities were identified and their personnel counted. Second, the staffing needs of OCONUS facilities for active-duty military physicians were evaluated. (The alternative to using military physicians is to employ U.S. or foreign civilians.) Third, the resulting staffing levels were adjusted for the mobilization mission (i.e., personnel essential to wartime operations were excluded to prevent double counting). This procedure resulted in a consensus estimate of the number of active-duty physicians required by OCONUS hospitals, beyond those individuals directly supporting wartime mobilization requirements.

Identifying OCONUS Facilities. The working group defined OCONUS medical facilities as hospitals and clinics operated by the U.S. military in foreign countries or in U.S. territories outside the fifty states. In all, some 1,300 physicians—or about 10 percent of DoD’s active-duty physician end-strength—are stationed at these locations (see Table 1).

Table 1.
OCONUS MTF Physicians

Military Department	Physicians
Army	527
Navy	379
Air Force	419
Total	1,325

Note: The figures in this and subsequent tables reflect FY 1995 totals. The tables continue to provide a reasonable construct of medical requirements.

Active-Duty vs. Civilian Staffing at OCONUS Facilities. Not all physicians at OCONUS hospitals are members of the military. The Army, in particular, staffs a significant proportion of its European medical billets with civilians. These personnel are concentrated in Germany; smaller numbers of civilian physicians serve in Army medical facilities in Korea and Japan. The Navy and the Air Force employ few civilian physicians abroad.

Table 2.
Civilian Physician Staffing at
OCONUS MTFs

Military Department	Civilian Physicians
Army	93
Navy	2
Air Force	8
Total	103

Employing civilian physicians in OCONUS hospitals offers important advantages for the military. By using civilians to augment active-duty medical personnel overseas, the services are able to limit the size of the rotation bases and training tails that they must maintain in the United States. (Hiring one civilian may actually reduce active-duty manpower needs by several slots, since there is no need to train replacements or to maintain billets at CONUS facilities into which to rotate personnel returning from overseas duty.) It is not possible to employ civilians at all OCONUS hospitals, however. Some facilities are located in areas where civilian personnel may not wish to serve or where local medical practices differ radically from American standards. Additionally, legal or treaty constraints (such as country-to-country Status of Forces Agreements) may affect the ability of military facilities to hire civilians without going through the host nation.

After considering these factors, the working group concluded that the Army's success in employing civilian physicians in Germany would be difficult—if not impossible—to replicate elsewhere. For that reason, the group chose to use existing MTF staffing patterns as the standard in estimating manpower requirements at OCONUS hospitals.

Mobilization Implications for OCONUS Staffing Requirements. The working group considered the possibility that OCONUS medical facilities might have additional personnel requirements during mobilization. In particular, those OCONUS facilities that either contribute personnel to wartime operations or treat combat casualties might experience an increase in staffing needs as a result of a mobilization.

Some OCONUS facilities have deployable units embedded in them. (During peacetime, for example, the Wurzburg Army Community Hospital in Germany includes personnel attached to the 67th

Combat Support Hospital.) The numbers involved are presented in the table below (Table 3), which divides the total OCONUS staffing requirement into two parts: peacetime physicians who would deploy in wartime and those who would not. The physicians who would deploy are counted as part of the wartime requirement. Hence, absent other considerations, the number of physicians who deploy should be deducted from the active-duty OCONUS total to arrive at the number that must be included in the peacetime sustainment and training base.

There may be other considerations, however. First, the fact that some physicians may deploy raises the question of whether or not there is a wartime staffing requirement in OCONUS facilities for which provision should be made. Upon reviewing the evidence, the working group concluded that an expansion of the hospital staffs was not warranted because, in most instances, those military units served by the facilities in question would also deploy in a mobilization, reducing the prospective patient pools in tandem with the decrease in physician staffing.

Second, the working group recognized a similar situation with respect to OCONUS medical facilities designated to treat combat casualties in wartime. Although combat-related caseloads would be additive to the routine workloads of these hospitals, medical personnel assigned to treat casualties are captured in the calculations of wartime requirements. Therefore, projected wartime caseloads at these facilities were assumed to generate no additional sustainment base or training requirements. Likewise for OCONUS facilities located outside conflict theaters, existing staff levels were judged by the working group to be adequate to handle routine caseloads during a mobilization.

In sum, based on its review, the working group identified no additional requirements for physicians in OCONUS facilities during mobilizations. Table 3 shows the OCONUS physician billets required by the military departments for mobilizations and for routine peacetime caseloads. The sum of the two is the total active-duty physician requirement for OCONUS MTFs.

Table 3.
Active-Duty Physician Staffing at OCONUS MTFs

Military Department	Peacetime Staffing	Mobilization Billets	Peacetime Increment
Army	434	85	349
Navy	377	0	377
Air Force	411	142	269
Total	1,222	227	995

Isolated CONUS (ICONUS) Facilities

The working group also addressed a CONUS analogue to OCONUS facilities—facilities within the United States that are sufficiently small and isolated to require staffing by active-duty medical personnel. Such facilities also require special consideration for the rotation of personnel. The working group considered nine facilities identified by the military medical departments as meeting the ICONUS criteria defined above. One was an Army hospital; two were Navy hospitals; and six were Air Force facilities. Most of these hospitals and clinics are small.

The working group adopted “medical isolation” as the standard by which to judge the isolation of the facilities nominated. A medically isolated facility was defined as one in which there was no practical alternative for providing medical care to service members and their dependents other than the use of active component medical personnel. Under this criterion, it was not sufficient that a base be located at a remote or isolated site—many DoD facilities are in rural areas, and particularly in the western United States, these can be a long way from major cities.

Medical isolation, in this case, renders moot any discussion of a military requirement, as might be considered when evaluating operational requirements: the designation of a facility as isolated rests on its ability to attract competent civilian care providers, regardless of economic considerations. Facilities meeting the “medically isolated” criterion are located in such remote areas that competent civilian providers cannot be used to staff these facilities even in times of mobilization.

Three of the nine facilities considered by the working group are clearly medically isolated—Twentynine Palms and Fort Irwin in California, and Mountain Home Air Force Base (AFB) in Idaho. Fort Irwin and Twentynine Palms are more than 60 miles from the nearest hospital that meets the accreditation standards of the relevant certification bodies. The nearest medical facility to Mountain Home AFB is a nursing home with 20 acute-care beds.

Two other facilities—Altus AFB in Oklahoma and Laughlin AFB in Texas—were also deemed to be medically isolated. In proposing these facilities for consideration, the Air Force had noted that both facilities are located in areas that meet “under-served” criteria established by the U.S. Department of Health and Human Services. The four remaining facilities considered by the working group proved to have some civilian medical capability nearby—often more complete than the capabilities afforded by the base hospital. Table 4 summarizes the physician requirements of the five MTFs deemed by the working group to be medically isolated.

Table 4.
Active-Duty Physician Staffing
Requirements at ICONUS Facilities

Military Department	Physicians
Army	21
Navy	30
Air Force	31
Total	82

Mobilization Support Requirements for Active-Duty Medical Personnel

The Working Group on Sustainment Base and Training considered several other resource planning categories of medical personnel. These included: replacements for casualties and for personnel temporarily unavailable for deployment, medical research and development personnel, and physicians who would provide residual care in CONUS for non-mobilizing active-duty service members. The working group identified valid active-duty requirements (in addition to those already established for mobilization, for manning OCONUS/ICONUS facilities, for the rotation base, and for graduate medical education and other training) for casualty replacements, deployment nonavailability, and certain R&D personnel.

Casualty Replacements. In calculating physician requirements, the military departments must ensure that sufficient numbers of medical personnel will be available to replace physician casualties (combat and disease/non-battle injuries) incurred in wartime. At issue is whether—to be available when needed—these casualty-replacement personnel must come from the active component, or if they can be drawn from the reserves.

In both the Army and Navy, physician casualty replacement is a responsibility of the reserve components. The Air Force, by contrast, relies on active-duty physicians to replace a portion of physician casualties incurred during the first ten days of a deployment. This practice reflects the fact that the Air Force typically enters a conflict theater early and is a high-priority target early in a war, before reserve component personnel become available.

In view of these considerations, the working group chose to use casualty replacement as a basis for generating Air Force active-duty physician requirements only during the first ten days of a deployment. While the other services might require replacements for physicians in selected skill areas not found in the reserves, the numbers involved are relatively small and the replacements could be drawn from reserve component physician pools in related skill areas. Table 5 summarizes the casualty replacement requirements of the three military departments.

Table 5.
Active-Duty Physicians Required
as Casualty Replacements

Military Department	Physicians
Army	0
Navy	0
Air Force	19
Total	19

Research and Development. The working group considered requirements for active-duty medical personnel generated by the missions of the services' medical research and development establishments. These R&D activities may be divided (roughly) into categories of "operational" and other. At issue is how much of the R&D *must* be done by uniformed personnel. A key criterion is whether an "operational" R&D unit (or individual uniformed researcher) has a mission to deploy upon mobilization.

The services have different definitions of operational R&D, but a common thread is R&D that is conducted in an operational environment (wartime or peacetime). "Other" R&D is that conducted in a non-operational environment (e.g., in CONUS laboratories). The services have observed that separating R&D into these categories is somewhat arbitrary, and does not accurately reflect the true interdependence between them. Table 6 shows medical R&D staffing by military department.

Table 6.
Active-Duty R&D Physicians

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Military Department	Physicians
Army	102
Navy	90
Air Force	36
Total	228

The Army, Navy, and to a lesser extent, the Air Force have fashioned deployable units from the various R&D organizations. Both the Army and Navy have experienced great success in establishing and deploying support units that include R&D personnel. Examples include the Navy’s Forward Deployed Laboratory (made up of a cadre of personnel from the Naval Medical Research Unit in Cairo, Egypt, and augmented by personnel from other research units worldwide) and the Army’s Chemical Casualty Site Team and Human Dimensions Team. These units have set the standard for future deployments. Both the Army and Navy have created formal units from their R&D establishments to make medical expertise available to operational commanders. It seems appropriate to treat these units as part of the theater force structure and, as such, as a bona fide military requirement. A total of 86 Army physicians, 26 Navy physicians, and 15 Air Force physicians in the R&D establishment are assigned to such units.

Regarding the nondeploying (“other”) part of the medical R&D establishment, all services maintain that military researchers are the bridge between the “pure” research establishment and the operational forces. While the desirability of uniformed researchers is evident, what is the military necessity? Some observers point out that most of the expertise offered by military research personnel is unique and not contractible. Yet, a large amount of R&D that the services desire to conduct with military personnel is routinely performed in the civil sector with civilian personnel—for example, by organizations such as NASA (aerospace medicine and human engineering), pharmaceutical companies (drugs and vaccines), and the Smithsonian Institution (forensic anthropology).

The consensus of the Sustainment and Training Working Group is that valid active-duty requirements exist for R&D personnel in deployable units, for R&D personnel who deploy to operational settings (but are not in deployable units), and for those personnel who are performing militarily-unique research that *must* be done by a military member. Applying these standards results in the requirements for active-duty physicians enumerated in Table 7.

Table 7.
Active-Duty R&D Physician Requirements

Military Department	Physicians
Army	90
Navy	41
Air Force	19
Total	150

Personnel Temporarily Unavailable for Deployment. Allowance needs to be made for active-duty physicians who would stand in for physicians temporarily unable to deploy, due to illness or other cause, at the time their units mobilize. A similar “nonavailability” requirement exists for OCONUS/ICONUS MTF staffing and for the additional requirements stemming from the need to maintain a rotation base. (The “other” subcategories of casualty replacement and R&D personnel, discussed above, also help generate the nonavailability requirement. The major category that does *not* generate a “temporarily unavailable” requirement is graduate medical education/training.)

The Army and the Navy do not explicitly program end-strength for personnel temporarily unavailable for deployment. They do factor into overall end-strength a “Trainees, Transients, Holdees, and Students” (TTHS) account for the Army and a “Transient, Patient, Prisoner, and Holding” (TPPH) account for the Navy. The purpose of the TTHS/TPPH allowances is to account for personnel who would not be immediately available for duty because they are on medical or legal hold, or are in a transient status.

The Army programs TTHS at 11.75 percent for officers and 11 percent for enlisted personnel, including students (trainees). The working group deducted the trainee portion from the 11.75/11 percent factor, because trainees were counted separately in this study. The non-trainee portion of the Army TTHS factor is approximately 3.4 percent. The Navy currently programs 3.5 percent for TPPH (excluding trainees) against overall medical end-strength. The Air Force computes conceptually similar categories using different methodology.

The working group applied a standard factor, similar to that used by the Army and Navy, to represent nonstudent transients and other personnel temporarily unavailable for deployment. The factor used, 3.5 percent, was applied across the total medical force requirements of the military departments (mobilization plus OCONUS, ICONUS, rotation base, casualty replacement, and operational R&D, excluding graduate medical education/training). The results are displayed in Table 8.

Table 8.
Active-Duty Physicians
Required as Temporary Replacements

Military Department	Physicians
Army	72
Navy	88
Air Force	56
Total	216

Command and Control. The working group also considered issues concerning the command and control of medical establishments. Fixed facilities in the Air Force “belong” to the bases on which they are located—the medical officers who make up the command structure of the base hospitals and clinics are an integral part of the Air Force wings located at the bases. These individuals, of which 64 are physicians, are not available for the mobilization mission.

Because similar (but not identical) relationships exist between facility heads and their local base commanders in the Army and the Navy, the working group was unable to reach an agreement on including only Air Force physicians in the computation of the command and control requirement. The decision was made to count, in addition to the 64 Air Force personnel, 30 Army hospital commanders and 20 Navy hospital commanders who perform functions similar to the Air Force squadron command. This methodology yielded a DoD total of 114 physicians in the command and control category.

Residual Care Requirements in CONUS. The working group considered whether, upon mobilization, a requirement exists for *active-duty* physicians to care for certain categories of military personnel remaining in CONUS. Mainly at issue is whether active-duty medical providers are needed for some types of highly ready or highly trained forces.

The Army and Navy would rely on their reserve components, augmented by existing complements of civilian and contract medical personnel, to backfill CONUS MTFs once active forces had deployed. Neither of these services programs active-duty personnel to meet residual CONUS requirements, nor have they identified categories of nondeploying personnel whose medical care must be provided by active component physicians.

The consensus of the Sustainment and Training Working Group is that the provision of care for nondeployed personnel in CONUS remains a requirement of the uniformed medical establishment but not one that must be met exclusively by active-duty physicians.

Community Health Clinics. The Air Force has identified 22 bases that housed deployable medical units prior to 1995, but no longer contain such units. The Air Force contends that the medical personnel needed to treat active-duty personnel and their dependents at these installations are additive to the wartime requirement and, therefore, should be included in the calculation of sustainment and training requirements. During a mobilization, these active-duty physicians would continue to provide

care to the military personnel and dependents whom they serve in peacetime. The Air Force has identified a requirement for 144 such physicians.

The working group was unable to reach agreement on the need to meet this requirement with active-duty personnel. As noted above, the Army and the Navy face similar situations with respect to the provision of care for non-mobilizing U.S.-based personnel. Neither of those services, however, relies exclusively on the active component to deliver this care. Lacking consensus on the issue, the working group chose not to include this category in its calculation of S&T requirements.¹

Rotation Base

Most medical professionals would not be willing to undertake a succession of tours in OCONUS and ICONUS facilities, due primarily to limitations in the practice of some medical specialties and difficulties in maintaining skills. Living conditions could also be a concern at some locations. Consequently, to retain these people, the military medical departments must provide opportunities for them (and those coming from some other sorts of assignments) to rotate into CONUS billets.

The “rotation base” of each military department is (loosely speaking) the number of its MTF-based (or -affiliated) posts in CONUS. Still speaking loosely, the rotation base is judged to be too small, relative to personnel assigned to OCONUS or ICONUS facilities (and some other billets), if it does not permit career medical personnel to spend a reasonable amount of time in assignments at U.S. hospitals.

An issue is whether it is necessary to maintain CONUS MTF billets that would not otherwise exist in order to avoid excessively long periods of assignment in OCONUS and ICONUS facilities. To the extent that maintenance of such billets is deemed necessary, additional active-duty physician slots would be established in CONUS MTFs. In effect, the MTFs would (in order to provide the incremental rotation base) expand the amount of care they provide to active-duty dependents, retirees, and survivors and dependents of retirees. To make this determination, the working group required:

- A measure of the number of physicians requiring someplace to rotate *to* (Table 9);
- The policies of the military medical departments on rotation;

¹ The Air Force contends that military considerations, other than those directly generated by the mobilization requirement, demand that community health center physicians come from the active component. Noting that the Army and Navy face similar situations, but do not count the providers in question as part of their wartime requirement, the working group as a whole was not persuaded by the Air Force argument.

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- The concomitant number of CONUS rotation slots arising from these considerations (Table 10); and
- The size of rotation base that would exist absent deliberate steps to increase it (Table 11).

Table 9.
Physicians in OCONUS, ICONUS, and
Other Categories Requiring Rotation

Military Department	Physicians
Army	455
Navy	446
Air Force	442
Total	1,343

The rotation policies of the military departments currently are such that the required rotation base in CONUS is of the size specified in Table 10.

Table 10.
Physician Rotation Base Requirements

Military Department	Physicians
Army	752
Navy	680
Air Force	653
Total	2,085

During peacetime, the majority of military physicians who would provide medical care in a mobilization occupy positions in CONUS hospitals. The size of the wartime requirement thus determines how large the CONUS medical establishment must be. The CONUS hospital billets in turn form a pool of positions into which OCONUS and ICONUS personnel can be rotated. By comparing needs against the rotation pool, it is possible to determine the extent to which rotation considerations generate an incremental requirement for personnel. Table 11 describes the size of the pool created in CONUS by the wartime requirement.

Table 11.
Rotation Pool Generated
by Mobilization Requirements

Military Department	Physicians
Army	1,453
Navy	1,136
Air Force	863
Total	3,452

At a global level, the rotation pool generated by the wartime requirement is sufficient to meet the aggregate rotation requirements of personnel stationed abroad or in isolated CONUS locations. Physicians are not perfect substitutes for one another, however, and there may be a need for management actions to maintain specific skills. When account is taken of differences in the specialty mix of physicians in OCONUS (and other positions requiring rotation) and in the specialty mix of the positions in the rotation pool, a requirement for a small number of additional slots can be identified.² For example, OCONUS facilities may require greater numbers of pediatricians than called for in the mobilization requirement. The incremental requirements established by the working group are shown in Table 12.

Table 12.
Incremental Rotation Base Requirement

Military Department	Physicians
Army	18
Navy	27
Air Force	283
Total	328

² Because of the very large rotation pool generated by Army and Navy mobilization requirements (Table 11) relative to the number required absent mobilization needs (Table 10), the additional increment attributable to specialty mismatches is quite small. This is not the case for the Air Force, which has a higher number of mismatches for two reasons: first, mobilization requirements generate a much smaller rotation pool from which to choose matches; second, and more significantly, the Air Force uses a greater degree of subspecialty differentiation.

Graduate Medical Education and Other Medical Training

The appropriate scale of DoD graduate medical education (GME) programs has long been a contentious issue. These programs consume considerable resources, and there are no agreed criteria for sizing them. Properly sizing GME involves several complex factors, not all of which are well understood and some of which are not readily quantifiable. Finally, sizing GME is an intractable problem because there is not a common, well-articulated view of the rationale for DoD GME programs. However, it is generally agreed that DoD must conduct at least some of its GME in-house in order to sustain the quality of military medical care and facilitate the monitoring of clinical standards of active-component physicians.

In the face of these difficulties, the working group was not able to reach agreement on the proper scale of DoD's GME programs. The group was able to reach a consensus on studies to be undertaken to resolve the key questions involved in rationally sizing GME, and it agreed on an interim approach for sizing GME, pending completion of those studies.

The GME Program. DoD provides graduate medical education in many of its CONUS-based hospitals. In FY 1996, GME programs were offered in 27 of 95 hospitals operated by the Department of Defense. A total of about 3,355 uniformed doctors were enrolled in those programs, and 1,320 uniformed doctors were associated with them as clinical faculty. (As is true of civilian practice, clinical faculty members are both health care providers and teachers, and the students provide health care services under the supervision of faculty members.)

The length of training required by each specialty, and the mix of specialties required in various clinical settings, largely are determined by prevailing standards of medical practice as administered by The American College on Graduate Medical Education. Accordingly, these were taken by the working group as "givens." The issue for the group was what percentage of the required training should be provided in DoD GME programs and in the GME programs of civilian teaching hospitals. The leading alternative sources of fully trained physicians are DoD's Health Professionals Scholarship Program (HPSP) and the Financial Assistance Program (FAP). These programs provide various levels of scholarship aid and stipends in return for a period of service in the military. Both allow students to defer their required military service until after completing a civilian GME program. In this case, the physicians enter active duty as fully trained and qualified health care providers. The military medical departments also take in a small number of fully trained physicians as "direct accessions" from the civilian sector.³

³ The working group considered the degree to which GME students and program directors might be deployable and, therefore, count toward the wartime requirement. (This had been a major reason for the establishment of DoD GME programs after the Korean War.) The group decided that GME students and program directors were not deployable, but would be expected to handle that portion of the CONUS casualty caseload that was incurred before reserve physicians became available. However, the Army has expressed concern that early-arriving patients might not be placed in facilities that sponsor GME programs. To allow for such occurrences, the Army has identified a requirement for 138 active component physicians, in addition to the GME directors and students, to handle wartime casualty loads. The working group did not accept this view.

Sources of Entry-Level Military Physicians

DoD has three sources of undergraduate-trained physicians (i.e., individuals with a medical degree but no graduate medical training):

- *The Health Professionals Scholarship Program (HPSP)*. This is DoD’s principal source of undergraduate-trained physicians. Recipients of HPSP scholarships incur a year-for-year service obligation, with a three-year minimum.
- *Financial Assistance Program (FAP)*. Recipients incur a two-year obligation for the first year of assistance, and six months for each additional year.
- *The Uniformed Services University of the Health Sciences*. Graduates of this program incur a service obligation of seven years.

Physicians drawn from these three sources require at least one year of postgraduate training before they can be licensed and practice independently, and two to six years of additional training (residency/fellowship) to become fully qualified specialists.

DoD also obtains by direct accession from civilian practice some fully trained (medical degree plus residency/fellowship) physicians.

Tables 13 and 14 provide some statistics on the educational backgrounds of DoD physicians. The tables reveal several things about the relationship between GME and the military medical corps. First, at any given time, about 28 percent of DoD’s physician inventory is in GME programs (either at DoD MTFs or at civilian hospitals). Second, most GME students serve in military hospitals. Third, the civilians in pre-service residencies (deferred HPSP and FAP) who will later report for duty (but who are not yet in uniform) exceed the number of military doctors in GME programs at civilian institutions.

**Table 13.
Sources of Training of DoD Physicians**

Military Department	Physician Inventory	Accessions from HPSP (Requires GME)	Accessions from USUHS (Requires GME)	Accessions from Deferred HPSP and FAP (Fully Qualified)	Direct Accessions (Fully Qualified)	Yearly Attrition of Physicians
Army	4,774	581	60	92	0	561
Navy	4,167	613	41	50	26	496
Air Force	4,010	293	49	313	16	533
Total	12,951	1,487	150	465	41	1,590

Table 14.
Physicians Participating in GME Programs

	Military GME (Active-Duty Billets at DoD MTFs)	Out-Service GME (Active-Duty Billets at Civilian Schools)	GME Residencies/Fellowships at Civilian Schools ^{3/4} Pre-Service (FAP, and Deferred HPSP)	Other Training (Longer than six months)
Army	1,402	58	328	12
Navy	1,075	116	279	61
Air Force	878	64	856	7
Total	3,355	238	1,463	80

Formulation of the GME Sizing Problem. There was general agreement among the members of the working group on these very broad points:

- The group would like to identify criteria—ideally, a model—which would provide a rational sizing of DoD in-house GME programs relative to alternative sources of fully trained physicians.
- GME programs should be no larger than necessary to meet military requirements, subject to the availability of other reliable sources of qualified active-component physicians.
- The quality of health care provided in a military environment is dependent upon some level of DoD GME for both expertise and R&D in wartime medicine.

These points naturally lead to framing the GME sizing problem as one of determining the minimum size of DoD GME programs consistent with the provision of high-quality medical care to DoD beneficiaries, with any increments above that level justified by cost considerations.

The relevant categories of cost include the costs (to DoD or borne by others) of training in DoD GME versus civilian programs; the costs of providing care in medical centers versus the costs of handling a comparable range of cases in non-teaching hospitals; and the extent to which the training of physicians requires treatment of a diverse patient population, including Medicare-eligible beneficiaries. Previous studies (including the 733 Study) provide some insights into these factors, but additional research is needed to determine DoD's requirements for GME programs.

Interim Approach to Sizing GME. Pending the conduct of additional research, the working group agreed on an interim approach to sizing GME. As a general proposition, the approach is as follows: for the minimum number of physicians deemed necessary for mobilization and sustainment (exclusive of GME): (1) provide, through DoD and civilian programs combined, proportionately the same number of slots as are currently offered; and (2) retain the current DoD/civilian program mix. In adopting this approach, the working group observed that the current scale of GME programs, in relation to the size of the military medical corps, is the result of an evolutionary process and is, if not optimal, at least satisfactory.

Sources of Military Physician Specialists

DoD acquires specialty education (residencies/fellowships) for its physicians in four ways:

GME in DoD Facilities. These are residencies/fellowships carried out in DoD MTFs—principally in the large medical centers. Students in these programs are on active duty.

GME in Civilian Facilities. These residencies/ fellowships are performed outside DoD, usually in teaching hospitals. The students are on active duty.

Deferred HPSP. These individuals, graduates of HPSP, undertake training in civilian residencies/ fellowships (at no cost to the government) prior to reporting to duty for the first time. They incur no additional service obligation.

Financial Assistance Program (FAP). These individuals obtain their medical degree independently, receive a stipend during their residency/fellowship, and incur a service obligation.

DoD also obtains some fully trained physicians by direct accession from civilian practice.

The base of the implied computation is the sum of: the mobilization requirement for physicians; the physician population required in OCONUS and ICONUS locations; “other” requirements for uniformed physicians; and the incremental rotation base. The overall proportions of all GME/pre-service residencies and military GME are shown in Table 15.

Table 15.
Contribution of Graduate Medical Education to the DoD Medical Corps

Military Department	GME Billets (Military and Out-Service) as a Percentage of All Medical Corps Billets	Percentage of Fully-Trained Medical Accessions Obtained from Military GME Programs
Army	30	84
Navy	29	85
Air Force	24	44
Total	28	72

Note: The figures presented above serve only as an indication of the magnitudes involved. The computations were done specialty by specialty, using the proportions applicable to each specialty.

Recommendations on GME. The results of the interim approach developed by the working group to compute GME requirements are presented in Table 16. The group recommends that these data be used to define the minimum scale of DoD programs until the results of two follow-on studies, described below, are available. In making this recommendation, the group does not mean to suggest that GME programs be reduced to the scale shown. Rather, the group urges that increments beyond that scale be justified on cost grounds.

Table 16.
Physician Billets in GME

Military Department	Billets in Military GME Programs	GME Billets at Civilian Institutions ("Out-Service")	Total Medical Corps in GME
Army	1,402	58	1,460
Navy	1,075	116	1,191
Air Force	878	64	942
Total	3,355	238	3,593

To calculate the requirement for GME, the working group applied the methodology described above to the standing requirements for military physicians (established by the Wartime Requirements Working Group) and for the other sustainment categories (OCONUS, rotation base, etc.). To account for physicians who direct GME programs, the working group included in its calculation 127 medical

training program chiefs, senior uniformed physicians who are generally considered nondeployable and thus are additive to requirements. The resulting GME requirement is shown in Table 17.⁴

Table 17.
Active-Duty Physicians Required for
GME and Other Training

Military Department	Physicians
Army	991
Navy	1,088
Air Force	550
Total	2,629

The working group recommends that two follow-on studies be conducted:

- The Office of the Assistant Secretary of Defense for Health Affairs (OASD(HA)), in cooperation with the military departments and their surgeons general, should draft for the consideration of the Deputy Secretary of Defense a statement articulating the rationale for DoD GME programs. The statement should be sufficiently detailed to serve as a foundation for the development of specific criteria for sizing DoD GME programs.
- The Office of Program Analysis and Evaluation (PA&E) and OASD(HA), in cooperation with the military departments, should undertake an analysis to determine the effects of DoD GME program size on physician retention. In connection with that effort, the military departments should identify the number of senior medical personnel required by a medical corps of the size reflected in Table 18.

The Air Force has requested that a third study be conducted, assessing the costs and benefits of GME on care delivered. In proposing that a cost-benefit analysis be performed, the Air Force cited evidence that discontinuing a GME program can increase costs.

Size of the Sustainment and Training Base

Drawing on estimates developed by the working group for the various S&T categories, Table 18 summarizes the sustainment base and training requirements of the military medical establishment. As

⁴ The working group notes that the Navy has developed a new methodology for estimating the requirements for GME and other specialty medical training. This methodology produces results that are similar to, or slightly higher than, those of the working group reported above.

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the table shows, training programs (graduate medical education) account for nearly 60 percent of the total, with OCONUS physicians and the associated U.S. rotation base claiming 21 percent and 7 percent, respectively. Taken together, these three categories account for approximately 90 percent of the S&T requirement.

**Table 18.
Sustainment Base and Training Requirements**

Category	Physicians
Total Wartime Requirement	4,810
Less CONUS Casualty Care	-345
Net Wartime Requirement	4,465
Sustainment and Training Categories	
OCONUS	995
ICONUS	82
Casualty Replacements	19
R&D	150
Command and Control	114
Nondeployability Allowance	216
Net Rotation	328
Graduate Medical Education/Other Training	2,628
Sustainment and Training Total	4,532
Total, Including Wartime Requirements	8,997
1999 Programmed Physician End-Strength	12,571
Total Requirements as a Percentage of the FY 1999 Program	72%

An examination of the total physician requirement (wartime plus sustainment and training) suggests that the number of physician billets programmed by the Department exceeds the required level by approximately 30 percent. That more physicians are programmed than estimated to be required does not suggest that the programmed number should be reduced to the requirement. It is important to note in this regard that physicians provide a stream of services that contribute to the delivery of a statutory medical benefit to DoD beneficiaries. To validate the cost-effectiveness of the residual physicians in providing that benefit, the physician surplus should be subjected to rigorous analysis.

Implications for CONUS Medical Facilities

In commissioning this study, the August 1995 PDM mandated that the analysis determine the number and size of DoD CONUS medical treatment facilities required to meet sustainable wartime and day-to-day operational requirements. The requirement for beds in CONUS MTFs derives from projected wartime casualty flows and from assumptions about where casualties of various types ought to be treated. It is not possible to determine where in CONUS (i.e., at which hospitals) care should be rendered. Given assumptions about casualty flows and how long injured personnel are to be retained, the size of the CONUS bed requirement—if not its location—can be determined.

To calculate this requirement, the working group assumed that all casualties returned to CONUS for treatment would be sent initially to DoD hospitals. These casualties were divided into two groups: those individuals whose injuries are mild enough to permit a rapid resumption of military duty; and those with injuries so severe that a return to duty is unlikely. The first group was presumed to be retained in DoD hospitals for the full course of their treatment. The government has an obligation (moral and legal) to provide high-quality care for the more severely injured individuals constituting the second group. Considering the missions of Department of Defense and Veterans Administration (VA) hospitals, the working group assumed that patients in the second group would be transferred to VA facilities once their medical conditions permitted.

Based on these assumptions and on results of analyses performed by the Wartime Requirements Working Group, CONUS bed requirements for each military department and for DoD as a whole were calculated. As Table 19 shows, these requirements are not distributed evenly across the military departments—the Army's requirements are much greater than those of the Navy and Air Force combined. A review of the results reveals one other point worth noting: the total CONUS bed requirement for DoD as a whole is less than the sum of the requirements of the three military departments. This reflects the fact that the figures presented in the table represent peak requirements, and those requirements would occur at different times for the individual services in a two-theater conflict. For purposes of this analysis, the assumption was made that combat casualties—once in CONUS—could be treated in military facilities operated either by the home service or another service. Thus, the total bed requirement shown in the table represents the peak for the Department as a whole, and not the sum of the peak caseloads projected for the individual services.

Table 19.
CONUS Bed Requirements for Casualty Care

Military Department	Army	Navy	Air Force	Total Bed Requirement
Beds Required	8,100	4,350	1,450	13,400

The results reported here are larger than the 8,990-bed CONUS casualty-care figure identified in the 1994 Section 733 study. The difference arises from several factors, the most important of which is a change in the theater evacuation policy assumed. The 1994 study was based on an assumption that wartime casualties requiring hospitalizations of more than 30 days would be evacuated to CONUS and those patients with shorter expected stays would be treated in theater facilities. For this analysis, the working group assumed a shorter evacuation policy (15 days), consistent with Desert Shield/Desert Storm experience and current policy. This had the effect of reducing theater hospital bed requirements, while increasing the requirements for CONUS hospital beds.

If CONUS facilities served no other military purpose than treating casualties in wartime, the analysis could stop here. CONUS facilities fulfill other military functions, however. They serve as:

- The primary treatment facilities for active-duty military personnel;
- Centers for the training of medical personnel and medical units (“medical skills training”);
- Places to which deployed personnel can be rotated (“rotation base”); and
- Peacetime active-duty assignments for personnel who would man deployable medical platforms upon mobilization (“unit readiness training”).

Beyond these military missions, of course, CONUS MTFs provide the majority of the health care delivered to military beneficiaries—active-duty members, their dependents, military retirees, and the dependents and survivors of retirees.

Each of the military medical departments was asked to develop a list identifying the minimum set of facilities that satisfied requirements for CONUS casualty patient loads (as defined in the Wartime Requirements Study) and also met requirements for the training base, the rotation of deployed personnel, and the employment of medical personnel assigned to deployable platforms. Table 20 enumerates these facilities and also measures their size in “expanded bed capacity,” a methodology established by OASD(HA).

Table 20.
CONUS Hospital Bed Requirements

Military Department	CONUS Bed Requirement for Casualty Care	Required CONUS MTFs (Service Nominations)		Programmed MTFs	
		Number	Expanded Bed Capacity	Number	Expanded Bed Capacity
Army	8,100	21	7,385	23	7,507
Navy	4,350	14	3,845	19	4,234
Air Force	1,850	21	4,566	21	4,566
Total	13,400	79	15,796	88	16,307

As the table shows, the Army claimed that 21 of 23 MTFs, with about 98 percent of expanded bed capacity, are required for military missions. The Navy associated 14 of 19 MTFs, accounting for 90 percent of expanded bed capacity, with military missions. The Air Force, which is significantly reducing CONUS capacity, associated all of its U.S. MTF capacity with military missions.

The working group compared the CONUS casualty-care projections derived in the Wartime Requirements Study with the capacity of the facilities designated by the military departments as being essential for casualty care and/or for the sustainment and training of the medical establishment. For the Army, the estimated CONUS casualty bed requirement equals 92 percent of the Army's CONUS MTF bed capacity. For the Navy, the figure is 88 percent. By contrast, the Air Force identified a militarily-required MTF structure of 4,566 expanded beds, more than double the number estimated by the Wartime Requirements Study to be needed for CONUS casualty care. In all three cases, programmed bed capacity is slightly larger than the capacities deemed as militarily essential. Implicitly, the military departments are stating that only a small fraction of their currently programmed MTF capacity will be maintained solely to provide beneficiary care.

These data mean that DoD's current hospital structure could accommodate all CONUS-evacuated casualties without having to resort to VA or private-sector hospitals, while still offering thousands of beds to other DoD beneficiaries. The Army's and the Navy's programmed hospital structures are fairly close to their projected casualty-care requirements, but the Air Force structure is far larger than the casualty-care requirement suggests is necessary. To the extent that the current MTF structure provides a hedge against higher-than-anticipated casualties, it is Air Force facilities that serve that purpose. The roughly 22 percent of programmed CONUS MTF bed capacity that exceeds the casualty-care requirement is subject to justification on the basis of economic efficiency and/or other military needs.

The military departments' stated requirements for MTFs—for all military missions—yield an MTF structure somewhat greater than that required for CONUS casualty care. The residual demands

on CONUS MTF capacity have not been subjected to analysis using a common methodology. When the Army and the Navy applied new methodologies, each excluded about 10 percent of its CONUS expanded bed capacity from the strict definition of military requirements. The Air Force excluded a smaller portion of its hospitals and expanded bed capacity from military requirements. These disparate outcomes are due in part to the distribution of militarily-required activities (such as training programs) to most MTFs by the Air Force. As reported by the military departments, few MTFs are, then, “not militarily required.”

In the future, it is possible that the peacetime sustainment portion of the total medical military requirement can be reduced. One avenue for accomplishing this is cross-service performance of some medical functions, such as individual skills training. Toward that end, facilities in the National Capital Region and in San Antonio, for example, are already moving toward greater “jointness” in operation. To provide additional insights in this area and to guide future planning, the working group recommends that further research be conducted into the military departments’ requirements for CONUS MTF capacity. Specifically:

- PA&E and OASD(HA), in cooperation with the military departments, should investigate the extent to which militarily-required activities can be consolidated in CONUS MTFs, and the effects that such consolidations might have on total required MTF capacity. As part of that assessment, PA&E and OASD(HA) should develop a uniform methodology for determining the military departments’ requirements for CONUS MTF capacity.

Conclusions

This report reviewed the requirements for active-duty physicians beyond those personnel directly supporting wartime operations, and compared currently programmed physician end-strengths to the sum of wartime plus sustainment and training requirements. The results indicate that the total number of physicians programmed by the Department is roughly 30 percent larger than required. The excess physicians are not distributed evenly across the military services, nor should they necessarily be, given differences in MTF locations and in service policies governing the use of active-duty versus reserve component physicians. Moreover, the existence of a physician surplus does not necessarily imply that the additional doctors are delivering care not encompassed in the statutory benefit due DoD beneficiaries. The excess physicians should, however, be subjected to a cost-benefit analysis to determine if the benefit could be delivered more effectively through other means.

This report also assessed the capacity of CONUS military hospitals in terms of projected casualty caseloads, medical training requirements, readiness training, and rotation base support. The results indicate that roughly 22 percent of programmed CONUS MTF bed capacity exceeds casualty-care requirements. Again, this is not to say that the excess capacity is either evenly distributed among the services or is not contributing to delivery of the health care benefit. Other militarily-unique requirements may combine to justify the additional capacity. The findings of the follow-on studies

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recommended by the working group should provide insights useful for determining how much, if any, of this excess capacity should be maintained.