

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

DOD GRADUATE MEDICAL EDUCATION PROGRAMS
AND MEDICAL READINESS TRAINING

Report No. 96-168

June 18, 1996

Department of Defense

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Acronyms

ACLS	Advanced Cardiac Life Support
ATLS	Advanced Trauma Life Support
C-4	Combat Casualty Care Course
DMHRS	Defense Medical Human Resource System
GME	Graduate Medical Education
GMO	General Medical Officer
MEDCEN	Medical Center
OASD(HA)	Office of the Assistant Secretary of Defense (Health Affairs)
RRC	Residency Review Committee
USUHS	Uniformed Services University of the Health Sciences



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June 18, 1996

**MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (HEALTH
AFFAIRS)**

**SUBJECT: Audit Report on the DoD Graduate Medical Education Programs and
Medical Readiness Training (Report No. 96-168)**

We are providing this audit report for review and comment. We considered management comments on a draft of this report in preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. As a result of management comments we revised Recommendation 1.b. We request that the Assistant Secretary of Defense (Health Affairs) provide additional comments on Recommendations 1.a. through 1.e. We also request that the Assistant Secretary reconsider the position taken on Recommendations 5. and 6. We request comments by August 19, 1996.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Michael A. Joseph, Audit Program Director, or Mr. Sanford W. Tomlin, Senior Auditor, at (804) 766-2703. See Appendix H for the report distribution. Team members are listed inside the back cover.

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for Auditing

Office of the Inspector General, DoD

Report No. 96-168
(Project No. 5LF-0016)

June 18, 1996

The DoD Graduate Medical Education Programs and Medical Readiness Training

Executive Summary

Introduction. The DoD military physicians must meet the civilian physician requirements plus develop the additional knowledge and skills to provide medical care in a hostile, wartime environment. Military physicians assigned to combat support units practice a vastly expanded form of medicine. Intimate knowledge of the work environment is required to recognize the hazards and stresses of the troops.

After 4 years of basic medical school, civilian and military physicians receive special education in a Graduate Medical Education (GME) program. An accurate cost of the DoD GME programs was not available. However, according to estimates provided by the Office of the Assistant Secretary of Defense (Health Affairs) and the military surgeons general, the DoD GME programs cost about \$186 million annually.

Audit Objectives. The originally announced objective of the audit was to determine whether the DoD GME programs were cost-effectively and efficiently managed and to evaluate the management control program applicable to the primary audit objective. Because our survey indicated that the DoD GME programs may not adequately consider readiness training and wartime requirements, we reannounced the audit to focus on determining whether DoD physician education programs include adequate medical readiness training, and what GME programs are needed to support readiness requirements. Because of issues related to methodologies for costing medical care, and because of ongoing efforts to determine wartime physician requirements, we did not determine whether the DoD GME programs are managed cost-effectively and efficiently.

Audit Results. DoD is making efforts to enhance the medical readiness training received by GME students and staff physicians. The GME programs at Tripler Army Medical Center, Naval Medical Center San Diego, and Wilford Hall Medical Center were innovative in providing readiness training to GME students. Additionally, the Office of the Assistant Secretary of Defense (Health Affairs) recently issued guidance that will improve medical readiness. However, further improvements can be made in providing medical readiness training.

A majority of DoD active duty staff physicians assigned to combat support units at the eight medical centers visited, and GME students at all DoD teaching hospitals had not received necessary medical readiness training and readiness training received was not adequately documented. For example, the unweighted sample results showed less than 50 percent of the active duty staff physicians assigned to combat support units and students attending DoD GME programs had completed the Combat Casualty Care Course. As a result, medical combat support units may not be able to adequately support the active duty forces during wartime deployment. Medical commanders were not able to accurately determine whether their staff physicians met medical readiness requirements (see Part I for details). Appendix F summarizes the potential benefits resulting from the audit.

DoD GME programs may be producing more physicians than required to support readiness. In addition, for those medical specialties not required to support readiness, DoD does not know whether providing care in-house is the most cost-effective source. To maximize the benefits of Defense Health Program resources, DoD must accurately size its GME programs. Developing methodologies to cost health care and GME programs is essential to the sizing effort (Appendix C).

The audit identified material weaknesses in the Office of the Assistant Secretary of Defense (Health Affairs) and surgeons general management control programs related to ensuring that staff physicians and GME students receive appropriate readiness training and that training provided is properly documented. Appendix A describes the management controls assessed and discusses the management control deficiencies.

Summary of Recommendations. We recommend that the Assistant Secretary of Defense (Health Affairs) issue medical readiness training guidance and standards; update, distribute, and use approved military manuals and medical textbooks in all GME programs; and promote the development of an automated physician readiness training recording system.

Management Comments. The Assistant Secretary of Defense (Health Affairs) concurred with the recommendations to update, distribute, and use approved military manuals and textbooks in all GME programs and will incorporate this requirement into the mission of the newly established Defense Medical Readiness Training Institute. The Assistant Secretary of Defense (Health Affairs) partially concurred with the recommendations to issue medical readiness training guidance and standards, and indicated that guidance in the recently published Medical Readiness Strategic Plan 2001 and DoD Instruction 1322.24, "Military Medical Readiness Skills Training," December 20, 1995, is sufficient. The Assistant Secretary of Defense (Health Affairs) did not concur with the recommendations to promote the development of a single DoD automated system to record physician readiness training and stated that the new Centralized Credentials Quality Assurance System will provide the readiness training oversight needed at the DoD policy level. See Part I for a discussion of management comments and Part III for the complete text of management comments.

Audit Response. Management comments on the recommendations to update, distribute, and use military manuals and textbooks in GME programs were fully responsive. As a result of the management comments on readiness training guidance and standards, we revised the recommendation requiring physicians to serve an operational tour immediately before or after their residency. The Medical Readiness Strategic Plan 2001 and DoD Instruction 1322.24, do not specifically require the medical readiness training guidance and standards we recommended. Therefore, we request that the Assistant Secretary provide details on how the recently issued medical readiness training guidance will address the requirements incorporated in the recommendations to issue medical readiness training guidance and standards. The new Centralized Credentials Quality Assurance System will not provide the readiness training documentation recommended and we request that management reconsider its position on the recommendation. We request that the Assistant Secretary provide comments on all unresolved recommendations by August 19, 1996.

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Part I - Audit Results

Audit Background

Military Medicine. The DoD military physicians must meet the civilian physician requirements plus develop the additional knowledge and skills to provide medical care in a hostile, wartime environment. Military physicians assigned to support aviation, infantry, mobile armor, shipboard, or undersea operations practice a vastly expanded form of medicine. Intimate knowledge of the work environment is required to recognize the hazards and stresses of the troops. An effective military physician has the capacity to move between a field and fixed medical facility and provide quality care in both.

Graduate Medical Education. Graduate medical education (GME) is the specialized education that all physicians receive after 4 years of basic medical school. To gain a certification in a medical or surgical specialty, a physician must complete a GME program. GME programs, civilian and military, are designed to train medical school graduates in a variety of specialties such as cardiology, radiology, and urology. This specialized training is often conducted at teaching hospitals, many of which are associated with medical schools. GME programs run from 1 to 7 years, depending on the medical specialty. Both civilian and DoD GME programs are monitored and approved by civilian medical accreditation authorities called residency review committees (RRCs). RRCs have been established for each medical specialty taught by a GME program. The purpose of the RRCs accreditation criteria is to produce competent, fully trained specialists capable of meeting all civilian licensure and certification requirements.

Military GME. During the late 1940s, DoD had difficulty recruiting physicians and established GME programs to recruit and retain a career force of specialized military physicians. The trend in civilian medicine was toward specialization and civilian physician incomes were in the top 3 percent of the national average. DoD started offering in-house GME programs as a means of obtaining the physicians needed to meet military requirements. Unlike civilian GME programs, it is important that DoD GME programs train interns (first year students), medical residents (specialists), and fellows (residency graduates receiving further training) to meet wartime medical requirements. Appendix D contains additional background information on training needs and differences between civilian and military medicine due to combat.

DoD has established an extensive network of 27 military teaching hospitals that provide intern programs and resident and fellowship training in 76 specialties and subspecialties. Thirteen of the teaching hospitals are medical centers (MEDCENS). MEDCENS are large hospitals that provide a broad range of health care services, serve as referral centers within a geographic area of

responsibility, and conduct as a minimum, a surgical GME program. An accurate cost of the DoD GME program was not available. However, according to estimates provided by the Office of the Assistant Secretary of Defense (Health Affairs) (OASD[HA]) and the military surgeons general, the DoD GME programs cost about \$186 million annually. In FY 1994, DoD provided GME training to 3,364 students at its teaching hospitals. The 3,364 GME students were active duty personnel. Additionally, 1,672 GME students received their training from civilian teaching hospitals. Of the 1,672 GME students, 1,415 were deferred from active duty service until they completed GME training. The remaining 257 GME students were categorized as full time out service (active duty personnel attending civilian GME programs).

Military GME Specialties. DoD GME programs can be broadly divided into two types, nonsurgical and surgical specialties. The GME readiness curricula for the nonsurgical specialties prepares specialists to accept responsibility for the nonsurgical aspects of combat deployment, such as infectious and tropical disease treatment, medical evacuation, and sanitation. The GME readiness curricula for the surgical specialties prepares surgeons for the responsibilities and conditions of wartime surgery in austere, non-ideal conditions. See Appendix E for additional background on combat surgery.

Medical Readiness Training. Physicians should receive many types of medical readiness training throughout their careers, such as operational tours, humanitarian missions, and level 1 trauma training, which are further discussed in Part I. Additionally, physicians new to the military should receive initial or entry level medical readiness training. DoD offers an 8-day Combat Casualty Care Course (C-4) at Camp Bullis, Texas, operated by the Joint Medical Readiness Training Center. The Military Departments also offer readiness courses that cover much of the training offered in C-4. The Military Departments and the Joint Medical Readiness Training Center are revising the C-4 training to reduce duplication and reflect changes in military doctrine that have occurred since the 1970s. The C-4 training was designed to prepare medical department officers for their clinical and leadership roles in war and in other military operations. C-4 students attending the course are introduced to casualty care at the forward edge of battle and are provided the basic abilities, knowledge, and skills necessary to lead health service support personnel in theaters of joint operations under arduous conditions. C-4 students are also introduced to joint health service support doctrine and are provided the basic knowledge, skills, and abilities necessary to function effectively as staff officers for combat commanders in theaters of joint operations. All physicians completing C-4 are certified in Advanced Trauma Life Support (ATLS) and helicopter medical evacuation.

Audit Results

The Director of the Joint Medical Readiness Training Center stated that a concept of joint interoperability exists in the DoD medical community. Joint interoperability means a physician needs to know how to fill the responsibility of their medical specialty at all levels of care. The intent of this concept is to enable DoD to shift its physicians during combat to where they are needed without fear of whether they could function effectively. The concept is appropriate as the Military Departments are downsizing and the Medical Readiness Strategic Plan 2001 (the Strategic Plan) emphasizes joint interoperability of all medical assets within theaters of operations.

Life Support Training. All DoD physicians were required to maintain Basic Life Support certification. However, on December 20, 1995 OASD(HA) canceled the instruction requiring Basic Life Support certification. Basic Life Support training teaches physicians to resuscitate patients who have gone into cardiac arrest, a frequent occurrence for trauma patients, by opening the airway and performing chest compressions. Advanced cardiac life support (ACLS) training teaches physicians to resuscitate patients in cardiac arrest using basic life support techniques, in conjunction with defibrillation, endotracheal intubation, and intravenous medications. ATLS training teaches physicians how to care for casualties during the early phase of treatment. Obtaining ACLS and ATLS certification requires only 16 hours of training and 12 hours of training, respectively. The certificates for ACLS and ATLS are good for 2 years and 4 years, respectively.

Audit Objectives

The originally announced objective of the audit was to determine whether the DoD GME program was cost-effectively and efficiently managed and to evaluate the management control program applicable to the primary audit objective. Because our survey indicated that the DoD GME programs may not adequately consider readiness training and wartime requirements, we reannounced the audit to focus on determining whether DoD physician education programs include adequate medical readiness training, and what GME programs are needed to support readiness requirements. Because of issues related to methodologies for costing medical care, and because of ongoing efforts to determine wartime physician requirements, we did not determine whether the DoD GME programs were managed cost-effectively and efficiently. The problems are discussed further in Appendix C. We will address the costing issues in our planned audit of DoD health care cost accounting systems.

The details of the audit scope and methodology and the management control program are discussed in Appendix A. We identified material management control weaknesses that are also discussed in Appendix A. See Appendix B for a summary of prior audit coverage related to the audit objectives.

Medical Readiness Training

A majority of DoD active duty staff physicians assigned to combat support units at the eight MEDCENs visited, and GME students at all DoD teaching hospitals had not received necessary medical readiness training and readiness training received was not adequately documented. Those conditions occurred because of the following.

- o DoD-wide and Military Department medical readiness guidance was inadequate.

- o DoD GME programs lacked reasonable comparability in the types of readiness curricula taught.

- o DoD did not take full advantage of the various readiness training opportunities that were available to supplement GME programs and staff physician readiness training.

- o DoD did not have an adequate system to record readiness training and monitor physician readiness.

As a result of physicians not receiving or documenting necessary medical readiness training, medical combat support units may not be able to adequately support the active duty forces during wartime deployment. Medical commanders were not able to accurately determine whether staff physicians met medical readiness requirements.

Background

Medical Readiness Planning. In March 1995, OASD(HA) issued the Strategic Plan to provide a baseline for addressing the most critical issues affecting medical readiness. Training is one of the nine functional areas identified in the Strategic Plan. Military medical readiness not only includes combat surgery and preventive medicine in the field, but the medical capability necessary to support the continuum of military operations. The Strategic Plan requires the following medical capability to support the FY 1996 through FY 2001 Defense planning guidance.

- o Military physicians are to be physically fit to deploy and to be highly trained and proficient in the art of military medicine.

- o Military physicians are to be trained with the supplies and equipment of their respective deployable platforms and units.

- o Military medical leaders, at all levels, are to be well-founded in military medicine doctrine; procedures; tactics; and techniques.

o Military physicians are to be ready for rapid mobilization and strategic deployment to sustain medical support for any mission within the operational spectrum.

Deployability of DoD Physicians. All DoD physicians, except commanding officers; executive officers; plans, operations, and medical intelligence staff; and blood donor center personnel assigned to a medical treatment facility are deployable in the event of a contingency. All DoD physicians who graduated from civilian or DoD GME programs are deployable to a combat zone. Physicians in fellowship programs are deployable at any time. Upon full mobilization, medical residents can be deployed after 2 years of specialty training. GME students may be deployed as a general medical officer after a 1-year internship. In the Korean War, medical residents were deployed to combat zones.

Echelon System of Medical Care. The distribution of medical resources and medical capabilities to the various medical units within the theater of operations is referred to as echelons. For the echelon system of care to function effectively, physicians must be familiar with their roles within the system and the medical equipment used at the various echelons of care. While the echelon system of medical care is not rigidly set, it can normally be divided into four levels within theaters of operations.

First Echelon. The first echelon is the battlefield. A fellow service member or trained medical aidman provides first aid and conveys or directs the casualty to the battalion aid station. Because of the proximity to the battlefield, the aid station provides essential emergency care allowing return of the casualty to duty or preparation for evacuation to the rear.

Second Echelon. Care at the second echelon is rendered at an assembly point, clearing station, or brigade medical company. There the casualty is examined and wounds and general status are evaluated to determine priority, as a single casualty among other casualties, for return to duty or continued evacuation to the rear. Emergency care, including resuscitation, is continued and, if necessary, additional emergency measures are instituted. However, care does not go beyond the measures dictated by the immediate necessities.

Third Echelon. Care at the third echelon is provided in a medical facility staffed and equipped to provide resuscitation, initial wound surgery, and postoperative treatment. Casualties whose wounds make them nontransportable receive surgical care at the closest mobile surgical hospital. If the injuries permit additional transportation without detriment, surgical care is provided in a hospital further to the rear.

Fourth Echelon. Care at the fourth echelon is provided in a general hospital staffed and equipped for definitive care. General hospitals are located in the communications zone, which is the support area to the combat zone. The mission of general hospitals is the rehabilitation of casualties to duty status. If rehabilitation cannot be accomplished within a predetermined holding period, the casualties are evacuated to the zone of interior (usually the continental United States) for reconstructive surgery and rehabilitation.

Adequacy of Readiness Training

A majority of DoD active duty staff physicians assigned to combat support units at the eight MEDCENs visited, and GME students at all DoD teaching hospitals had not received the necessary medical readiness training. Only 606 of the 1,914 staff physicians at the eight MEDCENs we visited were assigned to medical combat support units. Of the 606 physicians, we projected that 280 had not completed C-4 training, and 314 and 439 were not certified in ACLS and ATLS, respectively. The GME period of a new physician's career is the most opportune time to receive initial medical readiness training (the military knowledge and broad medical skills needed to function in the forward echelons). However, GME students received little readiness training. Of the 3,283 GME students attending DoD GME programs (see Appendix A), we projected that only 1,263 had completed C-4 training. After completion of GME, physicians had little exposure to initial or specialized readiness training. Without adequate readiness training the physicians may not be fully capable of supporting the active duty forces during wartime.

Reasons for Deficiencies in Medical Readiness Training. The deficiencies in medical readiness training were attributable to the following.

- o DoD-wide and Military Department medical readiness guidance and standards were inadequate. Although the draft DoD Instruction, "Military Medical Readiness Skills Training," improves readiness training guidance, it does not include the minimum combat training courses and lifesaving skills that each military physician must have to perform combat medicine.

- o DoD GME programs lacked reasonable comparability in the types of readiness curricula taught. We reviewed 223 out of 245 responses to a Uniformed Services University of the Health Services (USUHS) survey of DoD GME programs to determine military unique curricula. We found, 62 programs reported no readiness curricula being taught and 8 programs reported C-4 attendance as the only readiness curricula in the programs.

- o DoD did not take full advantage of the various readiness training opportunities, such as operational assignments and deployable medical equipment training that were available to supplement GME programs and staff physician readiness training.

Guidance and DoD Standards. Many staff physicians had not completed C-4 training or maintained ACLS and ATLS certifications because DoD-wide and Military Department medical readiness guidance and standards were inadequate. Additional guidance to standardize the GME readiness curricula and the use of military medical textbooks is also needed. The OASD(HA) had not issued a comprehensive medical readiness training directive outlining the minimum combat training courses and lifesaving skills that each military physician must have to perform combat medicine. Without adequate readiness standards, medical commanders could not adequately assess and determine whether assigned physicians met readiness needs.

DoD Guidance. DoD had little guidance on GME and medical readiness. DoD Directive 1215.4, "Medical Training in the Reserve Components," November 27, 1990, discusses only the training of Reservists. DoD Directive 6020.2, "Basic Life Support (BLS) Training," July 19, 1991, discussed only basic life support training for all military personnel and was canceled December 20, 1995.

The Under Secretary of Defense for Personnel and Readiness has drafted a new directive, unnumbered, "Health Services Operations and Readiness," which assigns the responsibility for policies and procedures on medical readiness to the OASD(HA). The draft is being coordinated with DoD Components for review and comment.

The OASD(HA) issued DoD Instruction 1322.24, "Military Medical Readiness Skills Training," on December 20, 1995. DoD Instruction 1322.24 contains the policy and procedures for providing, assessing, and monitoring military medical skills training for all military medical personnel. The instruction requires that the commander certify, during training periods, the completion of medical readiness training for all health care personnel and ensure the certification is documented in the Centralized Credentials Quality Assurance System. The instruction represents a significant improvement in medical readiness training guidance, but it does not provide specific standards for readiness training required by physicians. Further, the instruction does not mention the DoD-wide development of the Defense Medical Human Resource System (DMHRS) as a training data base, but recognizes the Navy Centralized Credentials Quality Assurance System as the repository for medical readiness training. The Centralized Credentials Quality Assurance System was designed to maintain the credentials of physicians and nurses, not to network with systems of other Military Departments or to provide a record of the training courses completed by physicians. DoD Instruction 1322.24 cancels DoD Directive 6020.2.

Military Departments Guidance. Military Department guidance related to staff physician and GME medical readiness training was inadequate. The Army and Air Force had issued general readiness training guidance that did not require advanced lifesaving skills or specify readiness course requirements for combat or mobilization assignments. The Navy had issued more specific guidance on readiness training requiring advanced life-saving training and specific readiness courses for physicians assigned to combat or mobilization units. However, the guidance was not complete. In addition, for GME students, the Army and the Navy had no formalized guidance requiring C-4 training. Because of the lack of consistent guidance for all medical readiness training, the initiative of the commanding officers was the primary influence on the amount of readiness training at the eight MEDCENS.

Army Guidance. The Army Health Services Command Regulation 350-4, "HSC [Health Services Command] Training Requirements," April 9, 1992, provides Army guidance on physician readiness training. The individual training requirements in the regulation focused on self-development

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testing, common task testing, and leadership assessment. Completion of C-4, ACLS, ATLS, and basic life support were not incorporated into the Army's individual readiness training requirements.

Navy Guidance. The Navy has issued readiness training guidance but the guidance is incomplete. The guidance did not provide time frames for training completion. As a result, most of the staff physicians assigned to combat units had not completed the required training. For example, unweighted sample results showed that 30 of the 69 Navy staff physicians assigned to combat support units had not received C-4 or equivalent training. The Bureau of Medicine and Surgery Instruction 6440.5A, "Medical Augmentation Program," April 19, 1994, requires that all staff physicians assigned to medical combat support units maintain ACLS and ATLS certification and attend C-4 training unless they are assigned to a shipboard mobilization platform. Navy physicians assigned to shipboard mobilization platforms were required to have shipboard specific training instead of C-4 training.

Air Force Guidance. Air Force Instruction 44-102, "Patient Care and Management of Clinical Services," July 1994, required ACLS training for physicians who provide care to patients in delivery rooms, emergency rooms, operating suites, recovery rooms, and special care units. The Air Force has issued no other guidance requiring staff physicians to complete C-4 training and to maintain ACLS and ATLS certification.

GME Student Guidance. The Army and Navy had no formalized instruction requiring GME students to attend C-4 training. At the Army and Navy MEDCENs we visited, GME officials stated that C-4 training was normally scheduled during internship (the first year of GME) because of the time and work load involved in attending residency programs. Air Force Instruction 41-117, "Medical Officer Education," July 25, 1994, requires all residents to attend C-4 training. Air Force GME officials stated that this requirement was not met because of insufficient C-4 allocations. C-4 instructors at Camp Bullis stated that only one team was teaching C-4 and most classes were filled to capacity. However, the course capacity could easily be doubled with the addition of another C-4 training team. Based on our statistical sample, we projected that only 1,263 of the 3,283 GME students attending the DoD GME programs had completed C-4 training.

Need for OASD(HA) Guidance. The OASD(HA) should issue guidance and standards on the combat training and advanced lifesaving skill requirements for active duty physicians assigned to combat support units. In addition, guidance should be issued on the types of readiness training to be incorporated into DoD GME programs. The only DoD-wide guidance in this area was DoD Instruction 6020.2, which required that all health care personnel be certified in basic life support. However, DoD Instruction 6020.2 was canceled December 20, 1995, by DoD Instruction 1322.24 and basic life support certification is no longer required in DoD. We projected that 81 percent of the staff physicians assigned to combat support units at the eight MEDCENs visited were certified in basic life support. DoD guidance requiring C-4 training, and ACLS and ATLS certification would enhance medical readiness.

C-4 attendance would give staff physicians and GME students a military and combat orientation and better prepare them for deployment or for assignments to medical combat support units. In addition, physicians assigned to combat support units should maintain current ACLS and ATLS certifications. The ability to handle the potential mass casualties and trauma cases that combat can bring would be greatly enhanced if all staff physicians assigned to medical combat support units maintained the up-to-date skills and knowledge developed in ACLS and ATLS courses. However, after completion of GME, physicians are less likely to receive readiness training because of the demands of their peacetime work load.

GME Program Comparability. The DoD GME programs lacked reasonable comparability in the types of readiness curricula taught. OASD(HA) did not require teaching hospitals to implement military readiness curricula as part of the various GME specialty programs. DoD teaching hospitals did not take full advantage of the various readiness training materials. Some DoD GME officials believed that if GME contained readiness training, then the RRCs would not accredit their programs.

Comparability of GME Readiness Curricula. There was a lack of reasonable comparability in the types of readiness curricula taught in GME programs within DoD teaching hospitals. In FY 1995, OASD(HA) tasked USUHS to determine the types of military readiness curricula that had been incorporated into the DoD GME programs. All responding DoD teaching hospitals reported some type of readiness curricula, usually in the form of lectures; however, not all GME programs being taught within a teaching hospital had established a readiness curriculum. Of 223 GME programs reporting to USUHS on military readiness curricula, 62 programs reported no readiness curricula being taught and 8 programs reported C-4 attendance as the only readiness curricula in the programs. The military readiness curricula varied greatly for the remaining 153 GME programs. Consistent guidance on medical readiness training would help emphasize readiness training at all teaching hospitals. The emphasis on military unique curricula or readiness training largely depended on the hospital commander or GME program director's experience and priorities. The following are examples of readiness curricula reported to USUHS for general surgery residents.

- o At Tripler Army MEDCEN, the general surgery program used objectives from the "Military Unique Curricula" manual for general surgery, developed by USUHS and distributed to the surgeons general in FY 1988, as the basis for their curriculum. Over 20 readiness topics or training experiences were covered such as burn management, combat abdominal injuries, mass casualty drills, retained unexploded ordnance in tissues, surgery in the hostile environment, triage, and trunkal and extremity injuries.

- o The National Naval MEDCEN cited no readiness curriculum.

- o The Naval MEDCEN Portsmouth cited C-4 training as the only readiness curricula.

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- o The Keesler MEDCEN cited no readiness curriculum.
- o The Wright-Patterson MEDCEN cited C-4 training as the only readiness curriculum.

Military Unique Curricula. The lack of comparability within GME programs was further evidenced by inconsistencies in the use of the "Military Unique Curricula" manual developed by USUHS and the textbooks on military medicine developed by the Surgeon General of the Army. The implementation of a reasonably comparable military readiness curricula would enhance the ability of the DoD GME programs to produce military specialists with the skills, knowledge, and capability of sustaining and supporting our Armed Forces under the DoD joint interoperability concept.

Military Unique Curricula Manual. The "Military Unique Curricula" manual was the result of a FY 1987 OASD(HA) tasking for the USUHS to develop a curricula for the DoD GME programs that included all aspects of practice of a specialty unique to the military. The USUHS manual considered all specialties as falling within two general categories, medical and surgical. The content of the manual was to provide a means of teaching the basic military medical skills and knowledge needed to provide care in the forward echelons. Surgeons general distributed the manual to each GME program director in FY 1988. Each of the eight MEDCENs visited had used portions of the USUHS manual as the basis for developing readiness curricula; however, for only 31 of 165 GME programs. USUHS officials believed the manual was never fully used because of the lack of oversight needed for implementation into GME programs.

Military Medical Textbooks. Of the eight MEDCENS we visited, only five reported that textbooks with military medicine content were used in the GME curricula. They were the Textbook of Military Medicine series and Operational Anesthesia. Four MEDCENS reported using the Textbook of Military Medicine as part of their GME curricula. The four remaining MEDCENS were not aware of the availability of the series. DoD had not established procedures to distribute and incorporate textbooks on military medical readiness into its GME programs. The distribution and incorporation of the textbooks could help increase and standardize the readiness content of GME curricula and avoid duplication of efforts among the Military Departments.

o **Textbook of Military Medicine Series.** In 1989, the Office of the Army Surgeon General began distribution of the Textbook of Military Medicine series with the intent of the textbooks being a useful addition to readiness training programs for GME students and military physicians. The textbooks were structured and organized to be used by physicians within each Department. As of May 17, 1995, five textbooks were available for distribution. Two additional textbooks are planned for publication in FY 1996. Officials involved with the publishing of the textbooks stated that a method of marketing the product had not been developed. The availability of the textbooks was transmitted primarily by word-of-mouth.

o **Operational Anesthesia.** The anesthesia program at Naval MEDCEN San Diego produced a textbook, *Operational Anesthesia* (1994-1995), that was required reading and testing for residents. The textbook was readiness oriented and its incorporation into the curricula of the other DoD anesthesia residency programs could have increased the readiness content of those programs. However, the textbook was not used outside the Naval MEDCEN San Diego anesthesia residency program. OASD(HA) should require that teaching hospitals submit any locally produced textbooks, before use in GME programs, to the USUHS Associate Dean for GME for approval and possible distribution to other teaching hospitals.

RRCs Accreditation of Training. Directors of GME programs with limited or no GME readiness content stated that RRCs would not accredit off-site readiness training. For example, the Director of GME at Brooke Army MEDCEN stated that residents did not receive any training using the 41st Combat Support Hospital equipment because RRCs prohibited off-site training. The position that readiness training would not receive accreditation from the RRCs was not accurate. DoD teaching hospitals such as Tripler Army MEDCEN and Naval MEDCEN San Diego aggressively pursued off-site readiness training for GME programs and received accreditation from the RRCs. As stated later, RRCs have allowed residents to practice off-site, using deployable equipment not normally used in teaching facilities.

Readiness Training Opportunities. DoD did not take full advantage of the various readiness training opportunities available to supplement GME programs or continuing readiness training. The following training opportunities were available throughout the Military Departments to staff physicians and GME students: operational tours, humanitarian missions, deployable medical equipment training, and trauma care. Commanding officers and clinical directors at the DoD MEDCENs informed us that while such training opportunities enhanced medical readiness, the training also decreased the level of peacetime care provided by the MEDCENs. In addition, some GME program directors believed the RRCs criteria restricted the use of many readiness training opportunities.

The OASD(HA) needs to issue guidance requiring GME program directors to include in their GME programs the various readiness training opportunities. The OASD(HA) needs to emphasize that the knowledge and skills obtained during most readiness training opportunities have no counterpart in civilian practice. That difference is best illustrated by the knowledge and skills needed to practice surgery in combat zones. See Appendix E for a discussion of combat surgery.

Operational Tours. Officials at OASD(HA) stated that all active duty physicians should serve an operational tour (an assignment outside a medical treatment facility, usually to a tactical unit) or a tour to a non-MEDCEN hospital in close contact with operational units, either before or immediately after residency training. OASD(HA) officials believed that operational tours greatly enhanced the physician's military knowledge and readiness capability. However, the Military Departments did not agree on the optimal point at which a physician should serve an operational tour. The Navy,

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because of its operating environment, had more opportunities for the use of general medical officers (GMOs). GMOs are physicians who have completed their internship and who practice general or preventive medicine. About twice as many naval residents had served as GMOs compared to the Army and Air Force. In the Navy, each ship (a tactical unit) provides a contained and somewhat isolated population in which the medical skills of a GMO could be utilized. The Army and Air Force prefer that physicians serve operational tours after completing residency training. Tactical units in the Army and Air Force are normally stationed at military bases with access to a nearby medical treatment facility or a base clinic at remote locations. Except in remote locations, a GMO would not prove useful in the Army and Air Force because active duty personnel would normally obtain medical care at the medical treatment facility.

Officials at OASD(HA) stated that GMOs tended to make better residents and the operational tour as a GMO was a valuable military and medical learning experience. However, a GMO did not have the medical proficiency of a fully qualified specialist and that deficiency could be a problem in caring for serious injuries or illnesses in remote locations.

GMO Training. The opportunity to serve as a GMO was probably the most beneficial readiness training opportunity GME students could receive. Of the eight MEDCENs reviewed, unweighted sample results showed Naval MEDCEN San Diego had 37 of 44 residents and fellows that had served as GMOs. Brooke Army MEDCEN and Walter Reed Army MEDCEN had 10 of 31 and 20 of 62 residents and fellows that had served as GMOs, respectively.

The GMO can apply for additional specialized medical training to serve as a flight surgeon, field surgeon, or undersea medical officer. If assigned to a GMO billet, GME students are required to obtain a medical license from one of the 41 states allowing independent medical practice after internship completion. GMO tours normally ranged from 1 to 3 years. After a GMO tour, the physician may apply to a residency program or continue to serve as a GMO.

GMO Training in San Diego. In FY 1993, the Naval MEDCEN San Diego developed an innovative transitional year internship program. Transitional interns are those who have not selected a specific specialty for training. The program was innovative because it corrected internship training deficiencies identified by residents who had served operational tours. The program was designed to encourage and better prepare interns to serve as a GMO. The GMO innovations were incorporated into five other Naval MEDCEN San Diego internship programs (general medicine, obstetrics/gynecology, pediatrics, psychiatry, and surgery.) There were advantages to GME students and to the Military Departments, in having GME students who have completed an internship serve as a GMO before entering a residency program. Naval Medical Center San Diego cited the following as advantages:

- o the opportunities for the GME student to practice independent medicine while gaining an acculturation of military operations,

- o the opportunity to evaluate the adequacy of a student's medical skills and military socialization before the student's placement into a residency program, and

- o DoD medical readiness enhancement by the medical knowledge and military experiences GME students received during the operational tours as GMOs.

Humanitarian Missions. The Military Departments have been increasingly involved in humanitarian missions throughout the world, such as establishing field hospitals in Croatia and Naval Station, Guantanamo Bay, Cuba. The two hospitals required from 6 to 11 staff physicians at all times. Humanitarian missions provide excellent readiness training opportunities for staff physicians and GME students.

- o During FY 1995, Tripler Army MEDCEN sent 27 physicians to islands in the South Pacific on four exercises lasting from 1 to 3 weeks. The Tripler Army MEDCEN staff pointed out that during the exercises medical personnel got exposure to a variety of infectious and tropical diseases, which they would not see at Tripler.

- o The National Naval MEDCEN sent a special psychological rapid intervention team, consisting of four physicians to assist flood victims in Albany, Georgia, for 5 days.

- o The Wilford Hall MEDCEN has developed mobile field surgical teams and critical care aeromedical transport teams. The five Air Force surgical teams (consisting of 19 physicians) were on site within 4 hours after the FY 1995 bombing in Oklahoma City, Oklahoma. From FY 1992 to FY 1995, Wilford Hall MEDCEN Ophthalmology Department participated in humanitarian exercises in the Dominican Republic, Honduras, and Mexico. The exercises involved four to six physicians and lasted from 1 to 2 weeks. The Wilford Hall MEDCEN Ophthalmology Director stated that during the exercises, the team of physicians saw 700 to 800 patients per day and performed as many eye surgeries in 1 week as would have been performed in 4 months at Wilford Hall.

Tripler and Wilford Hall allowed GME students to participate in the medical care provided on humanitarian missions. GME program directors stated that the medical experiences provided on humanitarian missions had no equal for contingency medical training. RRCs were fully aware of the GME students participation in humanitarian missions and fully accredited the GME programs. Our discussions with GME program directors at other sites disclosed that they were opposed to sending GME students on humanitarian missions because they believed the RRCs would not continue to accredit the programs. We realize that the opportunities for staff physician and GME student participation in those missions are limited and they are not a substitute for DoD-wide readiness guidance and standards. However, we believe, to the extent possible, DoD staff physicians and GME students should participate in the missions.

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Deployable Medical Equipment Training. DoD MEDCENs did not take full advantage of the readiness training opportunities of having residents train using deployable medical equipment. Medical combat support units used deployable medical equipment including air transportable hospitals, combat support hospitals, and fleet hospitals. The use of the equipment in operational environments was distinctly different from the equipment and environment found in MEDCENs or teaching hospitals. Lessons learned from Desert Shield and Desert Storm showed many of the physicians deployed to medical combat support units were unfamiliar with their medical roles within the echelon of care system and the use and operation of the unit's medical equipment. Residents participation in the use of deployable medical equipment could greatly enhance their deployment capabilities.

Although six of the eight MEDCENs we visited exposed students in some GME programs to deployable medical equipment training, individual training records were not available showing the number of residents who had received training. According to command personnel, GME student exposure to deployable medical equipment training was limited. Further, that exposure was not part of the GME programs standard curricula. Brooke Army MEDCEN did not train residents on the equipment used by the 41st Combat Support Hospital, also located at Fort Sam Houston, Texas. Additionally, Naval MEDCEN Portsmouth did not provide any deployable medical equipment training to residents, because such training would require travel to Camp Pendleton, California.

Trauma Care Training. During a March 30, 1995, testimony before the U.S. House of Representatives, Committee on National Security, the Congressional Budget Office stated, "Only about 5 percent of the primary diagnoses that military medical personnel treat during peace time match a wounded-in-action casualty related diagnosis." The Congressional Budget Office also stated that during residency many military physicians receive level 1 trauma training at the civilian hospitals with which DoD has GME training affiliations. To meet the American College of Surgeons criteria for a level 1 trauma center, a hospital must be capable of providing comprehensive emergency care 24 hours a day. After military physicians complete their residency training, their exposure to war-related diagnoses is very restricted because they are practicing in DoD hospitals and those facilities typically do not provide level 1 trauma care.

The Congressional Budget Office report stated that level 1 trauma provides the best wartime training in trauma care and casualty-related diagnosis for many military physicians, and suggested that more military staff physicians be exposed to caring for level 1 trauma patients. One method suggested by the Congressional Budget Office was to expand the use of civilian facilities accepting DoD residents into their level 1 trauma programs, allowing military staff physicians to periodically participate in treating level 1 trauma patients. The Military Departments have established affiliations with 26 civilian hospitals, many of which are level 1 trauma centers, allowing military residents to train at the facilities.

The only DoD hospitals providing level 1 trauma care were the Brooke Army MEDCEN and the Wilford Hall MEDCEN. The facilities were able to perform level 1 trauma care because they have established a unique relationship with the city of San Antonio, Texas. That affiliation allows civilian trauma patients to be brought to the hospitals for care. The Congressional Budget Office report was supportive of the trauma programs at the two hospitals and suggested that many more military surgeons need level 1 trauma exposure.

During our visit to the two hospitals, we were told that they were in the process of acquiring level 1 trauma certification from the American College of Surgeons. The Air Force was rotating surgeons from other Air Force hospitals through Wilford Hall for a 3-week trauma refresher course so they can gain exposure to the trauma cases. As of September 13, 1995, at least 26 surgeons had been cycled through the Wilford Hall trauma refresher training. The intent is to rotate surgeons through the program every 5 years. We believe the approach is an excellent step towards ensuring that surgeons maintain their readiness skills.

Recording Readiness Training

DoD did not have an adequate system to record readiness training and monitor physician readiness. Several duplicative efforts were ongoing within the Military Departments to automate readiness training records. Minimal standardization existed between the teaching hospitals visited and between the Military Departments for recording information in individual physician records or maintaining the data in an automated system. As a result, OASD(HA), the surgeons general, hospital commanders, and unit commanders did not have reliable information on physician readiness. Without accurate recordkeeping systems, medical commanders will not be able to accurately certify that assigned physicians meet medical readiness standards as proposed in the recently drafted unnumbered DoD Instruction entitled, "Military Medical Readiness Skills Training."

Each of the Military Departments have separate automated systems that capture portions of physician readiness training. In FY 1994, OASD(HA) contracted for the development of a DoD-wide automated system called DMHRS. The development of DMHRS was not aggressively pursued and coordinated among the Military Departments. Any automated system for recording readiness training will require an extensive effort to capture and input the data maintained on manual records.

Physician Training Records. Our review of 311 staff physician records at 8 MEDCENs disclosed no single automated or manual record showing all the training that physicians had received. Each Military Department used a different primary training record. Unweighted sample results showed that 140 of the 311 primary records sampled were incomplete. Most of the records were being maintained manually. To determine readiness training for the physicians in our sample, we reviewed records from four different sources:

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credentialing files, personnel files, education and training files, and mobilization files. However, none of the files documented experience received from various humanitarian missions. We determined whether humanitarian missions were performed through briefings from senior MEDCEN physicians.

Records did not show all the training received because physicians did not always provide course completion certificates or other information to the personnel maintaining the various manual files or automated systems. For example, follow-up documentation provided by the Air Force MEDCENs disclosed 18 of the 83 staff physicians in our sample had completed readiness training courses that were not recorded (followup by the Army and Navy MEDCENs was incomplete and could not be quantified.) If a standard automated system existed, medical readiness training completions could be entered by the training sponsor, eliminating the need for physicians to provide documents of training completions.

Automated Systems. The DoD did not have a standard automated system to record and monitor physician readiness training. The Army and the Navy attempted to record physician readiness training in modules of their automated personnel systems. The systems were not accurate because training completions recorded in manual records were not entered into the systems. The two Air Force sites we visited had developed automated systems for maintaining readiness training records. However, those systems did not show a complete record of the physicians' readiness training because they did not contain training completions recorded in the personnel files and the credentialing files. A memorandum issued by the Deputy Secretary of Defense on October 13, 1993, directed the Military Departments to focus on corporate information management. Under the corporate information management concept, functions common to the Military Departments processed on different systems should be migrated into a single DoD standardized automated system.

The DMHRS will cost an estimated \$3 million annually, and includes a component that will automate physician files and track medical readiness through a training data base. Although the DMHRS might record future training completions, we have concerns that it will not capture prior training. That data can be obtained only through extensive research of manual records and input from the physicians. Unless OASD(HA) is willing to ensure that the manual effort is performed to establish an accurate readiness training data base, the DMHRS will not be of optimum value for many years to come. Because of the various independent efforts ongoing to develop an automated information system for maintaining readiness training, we believe OASD(HA) should put a moratorium on the development of the independent systems and expedite the development of the DMHRS or a similar DoD-wide system. Further, to ensure the accuracy of the system, DoD-wide procedures for recording training completions need to be prescribed.

Summary

A majority of DoD active duty staff physicians assigned to combat support units at the eight MEDCENs visited, and GME students at all DoD teaching hospitals had not received necessary medical readiness training. Additionally, the readiness training that was received was not adequately documented. Those conditions occurred because DoD:

- o readiness guidance and standards were inadequate,
- o GME programs lacked standardized readiness curricula,
- o did not fully utilize readiness training opportunities, and
- o had not developed an adequate system to record and monitor physician training and readiness.

The OASD(HA) needs to provide stronger oversight of the Military Departments' efforts to correct medical readiness training deficiencies. The OASD(HA) oversight is needed to ensure the Military Departments efforts in improving medical readiness training provide the medical and military skills and knowledge needed to support the entire spectrum of military operations.

Management Comments on the Finding and Audit Response

Unsolicited Management Comments. Although not required to comment, the Associate Dean for GME at the USUHS stated that the report represented a balanced view of many areas in medical readiness training needing improvement. He further stated that the number of DoD GME Programs responding to the University's survey on medical readiness, which we used in the draft report, has increased from 151 to 245.

Audit Response. Based on the comments from the Associate Dean at the USUHS, we reviewed the additional responses and changed our analysis and summary in the final report accordingly. For more details see Appendix A, "Content of GME Programs."

Recommendations, Management Comments, and Audit Response

Revised Recommendation. As a result of management comments, we revised Recommendation 1.b. to add tours to non-MEDCEN hospitals in close contact with operational units.

We recommend that the Assistant Secretary of Defense (Health Affairs):

1. Issue DoD-wide medical readiness training guidance and standards that at a minimum:

a. require all DoD physicians assigned to medical combat support units to complete the Combat Casualty Care Course or equivalent training and maintain certification in advanced cardiac life support and advanced trauma life support,

b. require physicians to serve an operational tour or a tour to a non-MEDCEN hospital in close contact with operational units, either before attending residency training or immediately after residency graduation,

c. require graduate medical education programs to include the Combat Casualty Care Course, humanitarian missions when possible, and deployable medical equipment readiness training opportunities,

d. set forth specific guidance on level 1 trauma refresher training for all DoD surgeons assigned to medical combat support units, and

e. set forth specific guidance for recording all medical readiness training, to include humanitarian missions.

Management Comments. The ASD(HA) concurred and stated the recently published Medical Readiness Strategic Plan 2001 and DoD Instruction 1322.24 will provide the corrective action needed.

Audit Response. The ASD(HA) comments were partially responsive. Review of the Medical Readiness Strategic Plan 2001 disclosed that this document recognizes the need to evaluate the medical readiness training of individuals, identify the requirements and standards needed, develop a standardized documentation method, and identify compliance. The recently issued DoD Instruction 1322.24 requires that all medical personnel have at least 5 days of medical readiness training annually. We believe this requirement is a major improvement over prior guidance. However, neither the plan nor the Instruction require completion of the Combat Casualty Care Course, advanced life support certification, participation in humanitarian missions, level 1 trauma refresher training, or specific guidance for recording of all readiness training as proposed in Recommendations 1.a., 1.c., 1.d., and 1.e. Instead, the Instruction defers the determination of the minimum medical readiness training to the

Military Departments. Therefore, until the Military Departments issue guidance on minimum training standards we cannot determine whether the minimum medical readiness training guidance and standards recommended will be implemented.

In response to the final report, we request that the Assistant Secretary provide details of how the Medical Readiness Strategic Plan 2001 and the new DoD Instruction 1322.24 will implement the training guidance and standards in Recommendations 1.a., 1.c., 1.d., and 1.e. We also request that the Assistant Secretary comment on the revised Recommendation 1.b.

2. Update and distribute the "Military Unique Curricula" manual to graduate medical education program directors for incorporation into all graduate medical education programs.

3. Require that the Textbook of Military Medicine series be distributed to all graduate medical education teaching facilities and incorporated into program curriculum where applicable.

4. Require DoD teaching hospitals to submit all locally produced manuals or textbooks to the Uniformed Services University of Health Sciences Associate Dean for Graduate Medical Education for approval and possible distribution to other teaching hospitals.

Management Comments. The ASD(HA) concurred and stated that a new Defense Medical Readiness Training Institute is being established under the Uniformed Services University of Health Sciences. The Institute will have the authority and responsibility to achieve an appropriate level of standardization and consensus on texts and other teaching materials.

Audit Response. Management comments on Recommendations 2., 3., and 4. are fully responsive. We believe the establishment of the Defense Medical Readiness Training Institute is a major step toward standardizing medical readiness training and correcting the conditions reported. The Institute will also provide a setting for incorporating interoperability into the Military Departments medical readiness training.

5. Promote and expedite the development of the Defense Medical Human Resource System or a similar automated system.

6. Impose a moratorium on automated systems being independently developed by the Military Departments to record physician readiness training.

Management Comments. The ASD(HA) nonconcurred with the recommendations, stating that the readiness training fields of the Centralized Credentials Quality Assurance System will provide the detail needed for DoD policy-level oversight. The Assistant Secretary further stated that the Military Departments have a need for greater levels of detail than DoD in readiness

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training reporting, so it would not be appropriate to restrict the Military Departments in their use of the training recording systems most suited to their specific needs.

Audit Response. The ASD(HA) comments were not responsive to Recommendations 5. and 6. We agree that the Centralized Credentials Quality Assurance System may provide the readiness detail needed for DoD policy-level oversight. However, the system will not provide the detail needed at lower levels. The system does not document physician medical readiness training and will not correct the deficiencies reported in the finding concerning the lack of readiness training documentation and the unnecessary spending of resources to develop duplicate systems. Allowing the Military Departments to independently develop systems does not promote the concept of joint interoperability and is not a cost-effective solution to system requirements. Even if a standard DoD system is not developed, some oversight of the various systems being developed is needed at the ASD(HA) level to ensure the systems properly interface to facilitate joint interoperability. We request that the ASD(HA) reconsider its position and provide additional comments in its response to the final report.

Part II - Additional Information

Appendix A. Audit Process

Scope

We conducted interviews and collected data and reports from responsible personnel at the Congressional Budget Office, General Accounting Office, DoD Commission on Roles and Missions of the Armed Forces, Joint Chiefs of Staff, OASD(HA), the offices of the surgeons general, USUHS, Joint Medical Readiness Training Center, and 27 DoD teaching hospitals. Of the 27 teaching hospitals, 13 are MEDCENS. MEDCENS are large hospitals that provide a broad range of health care services, serve as referral centers within a geographic area of responsibility, and conduct, as a minimum, a surgical GME program. We randomly selected 8 of the 27 teaching hospitals to visit and all the selected teaching hospitals were MEDCENS. We reviewed and sampled physician and GME student records at the eight MEDCENS from a physician's date of service entry to FY 1995. We collected DoD guidance and information related to GME program curricula, GME student readiness training opportunities, and physician readiness requirements.

Content of GME programs. We reviewed the GME programs at 27 DoD teaching hospitals. Fitzsimons Army MEDCEN and Navy MEDCEN Oakland were not included because they are being closed as the result of base realignment and closure. During the audit, USUHS performed a survey to determine the military unique features of DoD GME programs. USUHS received responses from 245 GME programs and we reviewed the responses to determine the military readiness curricula in 223 GME programs. We excluded 14 of the responses from our review because they were for GME programs at Fitzsimons Army MEDCEN. We excluded three responses because they addressed USUHS GME programs that are not affiliated with a teaching hospital. Three responses did not provide sufficient detail for analysis and two were for GME instructors not students. We conducted interviews with responsible GME program, medical department, and USUHS personnel on the military and readiness content on the remaining 223 programs.

Readiness Training Received. We determined whether DoD active duty staff physicians assigned to combat support units at 8 MEDCENS and GME students at all DoD teaching hospitals were receiving adequate medical readiness training. We reviewed individual training records at 8 MEDCENS, but did not review medical unit training records. We reviewed various studies on medical readiness and training that were conducted from FY 1976 to FY 1996. Additionally, we interviewed DoD experts on medical readiness. Specifically, we reviewed the adequacy of training records and the types of readiness training and assignments the physicians had received throughout the physicians military careers. We also reviewed the types of readiness training opportunities GME students at the eight MEDCENS received. The details of our sample are discussed under Statistical Sampling Methodology.

Readiness Requirements. We reviewed OASD(HA) and Military Department guidance on medical readiness requirements. We looked at the number of students in GME programs, the type and number of GME specialties needed, and the military subject areas that should have been covered in medical readiness training. We reviewed the 733 study to determine physician requirements (see Appendix B). In addition, we received information from the Military Departments that identified specialties and subspecialties needed to support readiness requirements.

Use of Computer-Processed Data. As stated previously, we used several sources to document the training provided to staff physicians and GME students. We verified training records from computer-processed sources to manual records when possible. We relied on the computer processed training data whenever manual training records were not available. Our review of the manual training records showed the computer-processed training data were incomplete and could not always be verified. However, we accepted the computer-processed training data because reliance on the computer-processed training data would overstate, not understate, the readiness training shown in the audit results and would not change the conclusions in the report.

Audit Standards and Locations. This program results audit was made from January through December 1995. The audit was made in accordance with auditing standards issued by the Comptroller of the United States, as implemented by the Inspector General, DoD. Accordingly, the audit included tests of management controls as were considered necessary. Appendix G lists the organizations visited or contacted during the audit.

Statistical Sampling Methodology

The following statistical sampling methodology was used during the audit.

Sampling Plan. We designed a statistical sampling plan by using two-stage cluster sampling with probability proportional to size. The plan was based on the methodology explained in "Elementary Survey Sampling" by Scheaffer, Mendenhall, Ott, 4th Edition, Pages 300-303.

In the first stage of the two-stage sampling procedure, we used probability proportional to size to select 8 teaching hospitals from a universe of 27 teaching hospitals. All the selected teaching hospitals were MEDCENs. In the second stage, we randomly selected GME students enrolled in the eight MEDCENs. The selected students' training records were reviewed to determine who had completed C-4 combat related courses. According to OASD(HA), a total of 3,152 students were enrolled at the 27 teaching hospitals at the time of the audit. The actual number of students at the eight MEDCENs selected were different than the number originally provided. Accordingly, we adjusted the overall size of the universe based on the differences in the number of students at the sampled MEDCENs. The new adjusted universe was estimated as 3,283 students.

Appendix A. Audit Process

We also determined the total number of staff physicians assigned to combat support units at the 8 MEDCENs statistically selected. Of the total 1,914 staff physicians at the 8 MEDCENs, 606 staff physicians were assigned to medical combat units as shown in Table A-1.

Table A-1. Staff Physicians Assigned to Combat Support Units

<u>Hospital</u>	<u>Staff Physicians</u>
Brooke Army Medical Center	73
Tripler Army Medical Center	56
Walter Reed Army Medical Center	45
Bethesda Naval Medical Center	54
Portsmouth Naval Medical Center	92
San Diego Naval Medical Center	125
David Grant Medical Center	62
Wilford Hall Medical Center	<u>99</u>
Total	606

We drew samples of staff physicians at each of the eight MEDCENs. We treated 606 staff physicians as the universe from which we projected the number of staff physicians with training in each of the following four categories of combat related groups: ACLS certification, ATLS certification, basic life support (BLS) certification, and C-4 course completion. We used ratio estimation methodology to project the number of staff physicians assigned to combat support units with training in the above categories.

Sample Results. We computed DoD-wide statistical projections from the sample results for GME students who have completed C-4 training. For the staff physicians assigned to combat support units at the MEDCENs visited, we computed projections for medical readiness training in the categories discussed above. We computed all projections by using 95-percent confidence intervals. The results are provided in Table A-2.

Table A-2. Medical Readiness Training Projections

<u>Category</u>	<u>Point Estimate</u>	<u>Lower Bound</u>	<u>Upper Bound</u>
Students with C-4 training	1,263	814	1,712
Staff physicians assigned to combat support units with training in:			
ACLS	292	248	336
ATLS	167	129	205
BLS	492	458	525
C-4	326	275	376

The projections for students apply to the universe of 3,283, estimated to be enrolled at the 27 teaching hospitals. Our projection show that we are 95 percent confident that between 814 and 1,712 students had completed C-4 related combat training. The unbiased point estimate of 1,263 is the most likely number of students who had completed C-4 training.

The projection for staff physicians apply to the universe of 606 staff physicians assigned to combat support units at the 8 MEDCENs. To interpret these projections using C-4 training as an example, we are 95 percent confident that of 606 staff physicians assigned to combat support units, between 275 and 376 staff physicians had completed C-4 training. The unbiased point estimate of 326 is the most likely number of staff physicians with C-4 training at the 8 MEDCENs.

Management Control Program

DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of Management Control Program. We reviewed the adequacy of OASD(HA) and the Military Department surgeons general management controls related to readiness training and training record documentation for GME students and staff physicians. We also reviewed the results of any self-evaluation of those management controls.

Adequacy of Management Controls. We identified material management control weaknesses as defined by DoD Directive 5010.38 relating to the DoD GME programs and medical readiness. The OASD(HA) and the surgeons

Appendix A. Audit Process

general guidance and procedures were not adequate to ensure that GME students and staff physicians received readiness training and that readiness training was properly documented.

Recommendations 1.a., 1.b, 1.c., 1.d, 1.e., and 5., if implemented, will improve the OASD(HA) and the surgeons general management controls over medical readiness. The benefits associated with recommendations are summarized in Appendix F. A copy of the final report will be provided to the senior official responsible for management controls for OASD(HA) and the Military Departments.

Adequacy of Management's Self-Evaluation. The OASD(HA) and the surgeons general did not identify GME as an assessable unit and, therefore, did not identify or report the material management control weakness identified by the audit. The OASD(HA) and surgeons general believed that GME was identified as an assessable unit at each military treatment facility, therefore, separate identification was not necessary.

The OASD(HA) and the Surgeons General of the Navy and the Air Force identified readiness as an assessable unit; however, they assigned a low level of risk to the assessable unit and did no further testing. We believe that OASD(HA) and the Surgeons General of the Navy and the Air Force should have assigned a high level of risk to the area and should have conducted an evaluation of the management controls. Because OASD(HA) and the Surgeons General of the Navy and the Air Force did not conduct evaluations, they did not identify or report the material management control weaknesses identified by the audit. The Surgeon General of the Army did not identify medical readiness as an assessable unit and, therefore, did not identify or report the material management control weakness identified by the audit.

Appendix B. Summary of Prior Audits and Other Reviews

During the past 5 years, several reports were issued that discussed related aspects of GME programs and medical readiness. The reports are summarized below.

General Accounting Office. Report No. GAO/HEHS-95-244 (OSD Case No. 1017), "Military Physicians: DoD's Medical School and Scholarship Program," September 1995, was mandated by the National Defense Authorization Act for fiscal year 1995. The General Accounting Office report compared the cost and benefits of obtaining DoD physicians from the USUHS and the Health Professions Scholarship Program. The report stated that by most measures USUHS is the more costly way to educate and retain military physicians. However, when all DoD costs and Federal costs are considered along with the longer DoD retention period for USUHS physicians, the USUHS cost is nearly equal to the scholarship program.

The report further stated that the USUHS provides other benefits to DoD such as research in casualty care, preventative medicine and trauma, as well as extensive medical readiness training to its students, but the impact of that training is unclear. The report contained no recommendations but was instrumental in the decision Congress made to continue USUHS. The report stated that Congress may want to require DoD to justify both USUHS and the Health Professions Scholarship Program in the context of the DoD specific short- and long-term requirements for military physicians.

Inspector General, DoD. Office of the Inspector General, DoD, Report No. 96-079, "Evaluation Report on the Management of Combat Stress Control in the Department of Defense," February 29, 1996, stated that combat stress was not centrally managed within DoD. The report stated the Army had very good combat stress programs, but Navy and Air Force combat stress programs were inadequate. The report recommended that the OASD(HA), Joint Staff, and Military Departments continue all activities to implement the combat stress improvement actions outlined in the Medical Readiness Strategic Plan (MRSP) 2001. The report further recommended that the OASD(HA) assume functional responsibility for combat stress management, issue policy to the Military Departments, and the Joint Staff incorporate combat stress into the joint doctrine. The OASD(HA), the Director Joint Staff, and the Military Departments concurred with the recommendations.

Program Evaluation Report, "Joint Medical Readiness Training Center," July 28, 1994, stated that the lack of medical readiness was a recurring problem for DoD. The report focused on initial and sustainment training for all medical personnel, specialized training for certain individuals, and joint training. The report recognized the need for initial medical readiness training and concluded that Military Departments should provide such training.

Appendix B. Summary of Prior Audits and Other Reviews

Inspections Report No. 93-INS-12, "Medical Requirements Determination Process," September 30, 1993, identified significant oversight issues requiring the attention of the OASD(HA). The report recommended that the OASD(HA) update the MRSP; establish mechanisms to improve visibility and readiness aspects of the DoD medical program; develop, in coordination with the military surgeons general, a process to ensure future program objective memorandum submissions are based on validated requirements and not historical budget data; and establish controls to improve integration of peacetime and wartime capabilities.

The OASD(HA) concurred with the first two recommendations. The OASD(HA) commented that the third recommendation on program objective memorandum submissions was incorrect by not recognizing that the Deputy Secretary of Defense modified an October 1991 decision to unify the medical missions by limiting the unified medical program to the peacetime mission. The OASD(HA) nonconcurred with the fourth recommendation, stating that current procedures were in line with the Secretary of Defense's preference for broad policy guidance, which allowed the Military Departments great latitude in the development and execution of their individual programs and often did not highlight medical readiness initiatives.

Inspections Report No. 93-INS-13, "Medical Mobilization Planning and Execution," September 30, 1993, stated that specific areas within DoD medical mobilization planning and execution process needed improvement. The report contained a total of 29 recommendations addressed to the Secretaries of the Army, Navy, and Air Force; the Assistant Secretaries of Defense (Command, Control, Communications, and Intelligence), (Force Management and Personnel), (Health Affairs), the then (Production and Logistics), the then (Program Analysis and Evaluation), and (Reserve Affairs); the Joint Staff; and the Military Commanders in Chief of the then Unified and the Specified Commands. Management concurred with recommendations concerning medical unit participation in joint exercises; assigning the Army as the lead service for implementing and budgeting the Single Integrated Medical Logistics Manager mission in the U.S. European Command, the U.S. Central Command, and the U.S. Pacific Command theatres in peacetime and wartime. Further action was required on recommendations dealing with military mobilization plans, medical readiness of the Active Duty and Reserve components, and the medical logistics planning and execution system.

Congressional Budget Office. The Congressional Budget Office paper, "Restructuring Military Medical Care," July 1995, stated that the DoD health care system is much larger than needed to satisfy its wartime mission and is not focused on maintaining combat medical skills. A number of alternatives for performing the wartime mission and providing health care to eligible military beneficiaries are examined in the paper. In keeping with the Congressional Budget Office mandate to provide objective analysis, it made no recommendations.

Report of the Commission on Roles and Missions of the Armed Forces (the Commission). The Commission report, "Directions for Defense," May 24, 1995, included coverage and recommendations on various functions of DoD that required improvements or a change in orientation to ensure its ability to conduct effective, unified military operations. The Commission stated that the DoD system of medical care was in need of restructuring. The report provided evidence that medical readiness problems persist despite lessons learned during the Gulf War. The report maintained that operational readiness must be the unequivocal top medical priority. The report recommended that DoD reemphasize the primacy of medical support to military operations, establish uniform procedures for the sizing of the DoD operational medical needs, and increase access to medical care in the private sector. The report also recognized that the peacetime medical establishment is larger than needed to support wartime requirements.

Section 733 Study. The Under Secretary of Defense (Comptroller), Program Analysis and Evaluation directorate performed the study, issued in April 1994, as a result of congressional direction in section 733 of the National Defense Authorization Act for fiscal years 1992 and 1993. Congress directed DoD to determine:

- o the size and composition of the medical system needed to support the Armed Forces during a war or lesser conflict in the post-Cold War era, and

- o adjustments needed in the medical system to enhance the cost-effectiveness of the medical benefits provided during peacetime.

The 733 study reported that only 6,300 active physicians are required to meet the threats of the post-Cold War era. The projected number of active duty DoD physicians for FY 1999 totals 12,600 or twice the number needed for readiness according to the 733 study. The Military Department surgeons general disagreed with the conclusions of the 733 study and a follow-on study is ongoing with results expected in March 1996.

Appendix C. Other Matters of Interest

Excess GME Capacity. The DoD GME programs may be producing more physicians than required to support readiness. In addition, for those medical specialties not required to support readiness, DoD does not know whether providing care in-house is the most cost-effective source. To resolve the above issues, DoD needs to:

- o determine the number and type of physicians required to support readiness,

- o develop methodologies to determine, by medical specialty and geographic region, which health care can be provided cost-effectively in the Military Health Services System, and

- o size GME programs to produce the number of physicians needed to support readiness requirements and nonreadiness related health care that can be provided cost-effectively in-house.

Physicians Needed to Support Readiness. The recent 733 study and the Commission concluded that DoD has more physicians than needed to support readiness. Senior health care officials within the Military Departments do not agree on the types of physicians needed to support readiness requirements. As shown in Table C-1., DoD has experienced significant reductions in its active duty forces, but the number of active duty physicians has increased since 1987.

Table C-1. Comparison of Total Active Duty Physicians to Active Duty Personnel

<u>Military Departments</u>	<u>Fiscal Year</u>	<u>Active Duty Physicians</u>	<u>Total Active Duty</u>	<u>Ratio of Physicians Compared to Active Duty Forces</u>
Army	1987	5,266	776,661	1:148
Army	1994	5,089	536,519	1:106
Navy	1987	3,628	784,333	1:217
Navy	1994	4,357	637,682	1:147
Air Force	1987	3,976	602,584	1:152
Air Force	1994	4,263	422,321	1:100
DoD	1987	12,870	2,163,578	1:168
DoD	1994	13,709	1,596,056	1:116

Section 733 Study. The 733 study reported that only 6,300 active physicians are required to meet the requirements of two simultaneous conflicts. The projected number of active duty DoD physicians for FY 1999 totals 12,600 or twice the number needed for readiness according to the 733 study. The Military Department surgeons general disagreed with the conclusions of the 733 study and a follow-on study was ongoing at the time of the audit. We determined a more current estimate of the excess active duty physicians (7,409) by comparing the 733 study readiness requirement (6,300) to the FY 1994 end strength of active duty physicians (13,709).

Report of the Commission. The report of the Commission also recognized that the peacetime medical establishment is larger than needed to support likely wartime requirements.

Specialties Needed to Support Readiness. Much disparity existed among the Military Departments concerning which specialty and subspecialty physicians and the associated in-house GME programs were needed for readiness. The Military Departments provided us with lists of readiness essential specialties and subspecialties. Using the Military Departments' lists, we determined the following:

- o 23 (34 percent) of 67 Army in-house GME programs were readiness essential,
- o 18 (58 percent) of 31 Navy in-house GME programs were readiness essential, and
- o 31 (84 percent) of 37 in-house Air Force GME programs were readiness essential.

The GME programs identified as readiness essential do not correspond to the number of specialties and subspecialties identified by the Military Departments as readiness essential because some specialties or subspecialties are not taught in a specific DoD GME program. For example, in the Army, field; flight; and operational medicine billets can be filled by GMOs. DoD does not maintain a specialty or subspecialty GME program teaching the three types of medicine. OASD(HA) had not determined which specialties and subspecialties are readiness essential. Further, MEDCENS have many physicians so specialized they would never deploy to a theater of operations during wartime. For example, a neurovascular surgeon would never be deployed to the forward echelon as a GMO. Table C-2 lists the readiness essential specialties and subspecialties identified by the Military Departments.

Appendix C. Other Matters of Interest

Table C-2. Readiness Essential Specialties/Subspecialties Identified by Military Departments

<u>Specialty/Subspecialty</u>	<u>Military Departments Determined as Readiness Essential</u>		
	<u>Army</u>	<u>Navy</u>	<u>Air Force</u>
Aerospace medicine		X	X
Allergy and immunology			X
Anesthesiology	X	X	X
Aviation medicine		X	
Cardiac surgery			X
Cardiology			X
Cardio-thoracic surgery		X	
Child psychiatry	X		X
Colorectal surgery		X	X
Critical care			X
Dermatology	X	X	X
Dermatological surgery			X
Developmental pediatrics			X
Diagnostic radiology	X	X	X
Emergency medicine	X	X	X
Endocrinology			X
Family practice	X	X	X
Field surgery	X		
Flight surgeon	X		X
Gastroenterology			X
General Medical Officer		X	X
General surgery	X	X	X
Hematology/Oncology			X
Infectious disease	X		X
Internal medicine	X	X	
Interventional radiology			X
Nephrology	X		X
Neurology	X	X	X
Neurosurgery	X	X	X
Neuropathology			X
Nuclear medicine	X		X
Obstetrics/Gynecology	X	X	X
Obstetrics/Gynecology endocrinology			X
Obstetrics/Gynecology maternal-fetal			X
Obstetrics/Gynecology oncology			X
Occupational medicine		X	X

Table C-2. Readiness Essential Specialties/Subspecialties Identified by Military Departments (cont'd)

<u>Specialty/Subspecialty</u>	<u>Military Departments Determined as Readiness Essential</u>		
	<u>Army</u>	<u>Navy</u>	<u>Air Force</u>
Operational medicine	X		
Ophthalmology	X	X	X
Ophthalmology-cornea external			X
Orthopedics	X	X	X
Orthopedics hand surgery			X
Orthopedics sports medicine			X
Otolaryngology	X	X	X
Pathology	X		X
Pathology forensics			X
Pathology hematology			X
Pediatrics		X	X
Pediatrics-neonatology			X
Pediatric surgery			X
Peripheral-vascular surgery			X
Plastic surgery	X	X	X
Preventive medicine	X	X	X
Psychiatry	X	X	X
Pulmonary medicine			X
Radiology-MRI			X
Thoracic surgery	X		X
Undersea medicine		X	
Urology	X	X	X

X = Service determined specialty/subspecialty as readiness essential.

Methodology Used to Determine the Cost-Effectiveness of Health Care Provided in the Military Health Services System. Health care provided by DoD physicians in excess of readiness requirements should be justified on an economic basis. TRICARE regional personnel and senior personnel at the MEDCENs disclosed that they were not determining which types of health care could be more economically provided in-house or obtained from the civilian community.

DoD-wide guidance did not exist on how to compare the cost of in-house health care with the cost of care purchased from the civilian sector. Additionally, significant inconsistencies existed between military treatment facilities on the types of cost charged to the Medical Expense and Reporting System accounts including GME expense accounts.

Appendix C. Other Matters of Interest

Opportunities for Cost Savings. There is an excess of specialized physicians and hospital beds in the United States. According to the American Council of Graduate Medical Education, by the year 2000 there will be a shortage of 35,000 generalist physicians and an excess of 115,000 specialist physicians. A study by the Pew Health Professions Commission (Pew Commission) "Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century," November 1995, predicted dramatic marketplace changes in health care. The Pew Commission recommended medical schools be reduced by 20 percent over the next decade. The Pew Commission also stated that because of managed care, health care providers will be forced to operate more efficiently and as many as half of the nations 5,000 hospitals will close. We believe there are many cost-saving opportunities for DoD health care because of the civilian excesses. To realize those opportunities DoD needs to develop an economic analysis methodology to determine which types of health care, by geographic region, can be provided cost-effectively within the Military Health Services System.

Sizing GME Programs. At a minimum, DoD GME programs need to be sized and maintained to provide the physicians needed to support readiness requirements. However, to provide physicians not required to support readiness, DoD needs to develop a methodology to determine the most cost-effective source of GME and size GME programs accordingly. OASD(HA) and GME program managers are not sure how much GME programs cost. We reviewed the GME cost accounts from several MEDCENS and found significant differences in the types of cost and methodology for allocating charges to those accounts. Health Care Systems Support Activity personnel monitored the costs charged to GME by several MEDCENS during the first half of FY 1995 and were aware of inconsistencies. We have scheduled a DoD health care cost accounting system audit and will perform a detailed review of the GME cost accounts during the audit. DoD cannot perform an accurate analysis of its GME programs until consistent and accurate cost data are available in the area.

The OASD(HA) issued a Strategic Plan for Rightsizing Graduate Medical Education in the Military Health Services System in March 1994. The plan does not address GME cost-effectiveness, but does project the closure of 65 GME programs and an associated reduction of 264 GME students by 1999. Those reductions are attributable to downsizing, base realignment and closure actions, and elimination of duplicative residency programs in close geographical proximity. Considering cost-effectiveness will allow for further reductions and improved efficiency of GME programs.

Conclusion. To maximize the benefits of Defense Health Program resources, DoD must accurately size its GME programs. Developing methodologies to determine the cost of health care and GME programs is essential to the sizing effort. TRICARE tasks lead agents and medical treatment facility commanding officers to provide care in a cost-effective manner. Without consistent costing methodologies, the tasking may be impossible to accomplish. Such an effort will require strong centralized coordination and management. We question whether OASD(HA) has the authority necessary to do so.

Appendix D. Excerpts From The Medic's War, Center of Military History, U.S. Army by Albert E. Cowdrey, 1987

Brigadier General Crawford F. Sams, head of the medical staff unit to the General Headquarters, Supreme Commander for the Allied Powers, testified before the Armed Forces Medical Policy Council on June 18, 1951 in regards to deficiencies in front line evacuation in Korea and the effect of the prewar medical professionalization program upon the practice of field medicine. On front line evacuation General Sams stated, "My impression is about 4,000 men who have died should be alive."

General Sams linked defective evacuation directly to the centerpiece of Army medical policy since World War II, medical specialization and professional development. The civilian medical profession had specialized, indeed over specialized, he held, and the Army had followed suit. But the trend had gone too far and brought adverse effects as well. Military medicine was not, and could not be, the same as its civilian counterpart. It most resembled civilian medicine in the hospitals. It differed widely in preventive medicine, because soldiers lived so differently from civilians. It differed absolutely in "the evacuation of battle casualties, and that has no parallel in civilian medicine. That particular responsibility we are now failing in."

In a survey conducted in Korea during March 1951, Eighth Army doctors reported that they needed more training in a variety of basics: in map reading, in setting up and packing medical and dental chests under field conditions, on the chain of command, and on their "specific duties as Battalion or Regimental Surgeon[s]." Additional training they felt, was needed in field tactics and the organization of a medical company. A division surgeon opined that medical officers should learn more about tactical defense of a medical installation, how to set up a perimeter defense, and how to use the hand grenade and bayonet. For existing deficiencies the doctors admitted that the Medical Service was not alone at fault. "All officers," concluded the report, "felt that the course [in field medicine] would have been of more value if they had been impressed with its usefulness". But "at that time the majority were preparing to specialize in surgery, x-ray, laboratory, therefore they had little or no interest in field medicine".

Appendix D. Excerpts from the Medic's War, Center of Military History, U.S. Army by Albert E. Cowdrey, 1987

An Army physician, following his liberation from a North Korean Prisoner of War camp, stated during a debriefing that if medical officers in Korea in 1950 "had any field training, which he regretted not having, a good number of men and equipment could have been saved and gotten out. They could have at least known something about the tactics being used." In 1952, the Eighth Army surgeon, Brigadier General L. Holmes Ginn, Jr., protested that a military assignment now seem paradoxical even to Regular Army medical officers whose viewpoint had been thoroughly professionalized, to say nothing of the drafted civilians who saw military service as an intrusion upon their lives. He concluded that:

Most young doctors coming to Korea have not been given the word on the simple fundamentals of the care of the wounded man, or the problems involved in the management of battle casualties. Field training with a division, declared Brigadier General Ginn, is an indispensable ingredient of [the medical officer's] education, especially if he is in the regular service, ... no matter how rarified and sacrosanct his MOS (military occupational specialty); along with knowledge and skill, a young medical officer must be taught a sense of mature responsibility toward his patients which comes from experience and from living with his mistakes.

Appendix E. Emergency War Surgery Defined in the Second U.S. Revision, Emergency War Surgery NATO Handbook, 1988

According to the **Emergency War Surgery NATO Handbook**, war surgery represents no crude departure from accepted surgical standards. A major responsibility of all military surgeons is to maintain these standards as fully as possible, even under adverse physical conditions.

There are, however, differences between war surgery and surgery in the civilian setting, including the following.

- o The tactical situation may impose major constraints upon the performance of the indicated operation, and threats to the safety of the patient and medical personnel may make appropriate care inconvenient, if not impossible.

- o The high-velocity weapons of war may produce tremendously greater tissue destruction than the low-velocity weapons producing civilian wounds.

- o There are few civilian wounds which resemble the multiple fragment wounds of artillery or mortar shell bombs, booby traps, and land mines.

- o Wounds are cared for by many surgeons along an evacuation chain that extends from combat zone to home, rather than by one surgeon and his staff throughout all phases of wound repair.

- o Casualties are frequently received in large numbers over a short time in combat hospitals. Although an occasional catastrophe of similar magnitude has occurred in a few metropolitan civilian hospitals, this is a commonplace occurrence in forward combat hospitals.

- o During aeromedical evacuation, the casualty will require long flights during which lowered air pressure may complicate abdominal, chest, eye, head, and spinal wounds. The cabins of high altitude aircraft are pressurized only to about 4,000-8,000 feet above sea level, and not to sea level pressures.

Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and Type of Benefit
1.a., 1.b., 1.c., 1.d., and 1.e.	Management controls and program results. Issuing guidance on medical readiness requirements and documentation will enhance medical readiness.	Nonmonetary.
2.	Program results. Improving curricula will enhance medical readiness.	Nonmonetary.
3.	Program results. Improving curricula will enhance medical readiness.	Nonmonetary.
4.	Program results. Improving curricula will enhance medical readiness.	Nonmonetary.
5.	Management controls and economy and efficiency. Improve medical readiness record keeping and reporting.	Nonmonetary.
6.	Economy and efficiency. Prevent overlapping efforts in developing automated systems.	Undeterminable because DMHRS costs are not known at this time.

Appendix G. Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller) Washington, DC
Program Analysis and Evaluation, Washington, DC
Joint Staff, Deputy Director for Medical Readiness, Washington, DC
Assistant Secretary of Defense (Health Affairs), Washington, DC
Joint Medical Readiness Training Center, San Antonio, TX

Department of the Army

Office of the Surgeon General, Falls Church, VA
Army Medical Command, San Antonio, TX
Brooke Army Medical Center, Fort Sam Houston, TX
Darnall Army Hospital, Fort Hood, TX
Dewitt Army Hospital, Fort Belvoir, VA
Eisenhower Army Medical Center, Fort Gordon, GA
Madigan Army Medical Center, Fort Lewis, WA
Martin Army Hospital, Fort Benning, GA
Tripler Army Medical Center, Honolulu, HI
Walter Reed Army Medical Center, Washington, DC.
William Beaumont Army Medical Center, Fort Bliss, TX
Womack Army Hospital, Fort Bragg, NC

Department of the Navy

Office of the Chief of Naval Operations, Washington, DC
Office of the Surgeon General, Pentagon, Washington, DC
Bureau of Medicine and Surgery, Washington, DC
National Naval Medical Center, Bethesda, MD
Naval Medical Center, Portsmouth, VA
Naval Medical Center, San Diego, CA
Naval Hospital, Bremerton, WA
Naval Hospital, Camp Pendleton, CA
Naval Hospital, Jacksonville, MS
Naval Hospital, Pensacola, FL
Naval Health Services Education and Training Command, Bethesda, MD
Naval Medical Information Management Center, Bethesda, MD

Appendix G. Organizations Visited or Contacted

Department of the Air Force

Secretary of the Air Force, Washington, DC
Office of the Surgeon General, Washington DC
David Grant Medical Center, Travis Air Force Base (AFB), CA
Keesler Medical Center, Biloxi, MS
Malcolm Grow Medical Center, Andrews AFB, MD
Scott Medical Center, Scott AFB, IL
Wilford Hall Medical Center, Lackland AFB, TX
Wright-Patterson Medical Center, Dayton, OH
Ehrling Berquist Hospital, Offutt AFB, NE
Elgin Hospital, Elgin AFB, IL
Brooks School of Aerospace Medicine, Brooks AFB, TX
Air Force Military Personnel Center, San Antonio, TX
Randolph Air Force Base, San Antonio, TX

Other Defense Organizations

Commission on Roles and Missions of the Armed Forces, Arlington, VA
Defense Manpower Data Center, Arlington, VA
Office of the Civilian Health and Medical Program of the Uniform Services,
Aurora, CO
Uniform Services University of Health Sciences, Bethesda, MD

Non-Defense Organizations

Congressional Budget Office, Washington, DC
General Accounting Office, Norfolk, VA
General Accounting Office, Washington, DC

Non-Government Organizations

Electronic Data Systems, San Antonio, TX
Institute for Defense Analyses, Arlington, VA
Systems Research and Applications Corporation, San Antonio, TX
Vector Research, Ann Arbor, MI

Appendix H. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)
Program Analysis and Evaluation
Deputy Chief Financial Officer
Deputy Comptroller (Program and Budget)
Under Secretary of Defense (Personnel and Readiness)
Assistant Secretary of Defense (Command, Control, Communications
and Intelligence)
Assistant Secretary of Defense (Health Affairs)
Assistant to the Secretary of Defense (Public Affairs)
Director, Defense Logistics Studies Information Exchange

Joint Staff

Deputy Director for Medical Readiness, Director for Logistics

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency
President, Uniformed Services University of Health Sciences

Non-Defense Federal Organizations and Individuals

Office of Management and Budget
General Accounting Office
 National Security and International Affairs Division
 Technical Information Center
 Health, Education, and Human Services

Chairman and ranking minority member of each of the following congressional committees and subcommittees
Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice,
 Committee on Government Reform and Oversight
House Committee on National Security

Part III - Management Comments

Assistant Secretary of Defense (Health Affairs) Comments

Final Report
Reference



HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301-1200

MAY 06 1996

MEMORANDUM FOR THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Audit Report on the DoD Graduate Medical Education Programs and
Medical Readiness Training (Project No. 5LF-0016)

Thank you for the opportunity to comment on the recommendations of the subject report. The relationship of medical readiness to our programs in graduate medical education is a very important and multifaceted topic. It includes not only the immediate readiness training that we provide to military physicians, but also the military-unique and specialty-specific features of graduate medical education in the specialties, which were not addressed in the audit report. In addition, recent analyses have clearly shown that military graduate medical education is the single most important factor in retaining an experienced military physician force, in which one third of our physicians have over 5 years of post-residency experience. This experience level, critically necessary for our system's readiness and success in combat, was not assessed in the audit. My comments on the report's recommendations, therefore, are made with the realization that the audit did not focus on the overall importance of graduate medical education to readiness, but only on one discrete aspect of this relationship.

I note that the audit team and my staff agreed that the final report would reflect two corrections. First, the final executive summary, second paragraph, should state that DoD supported 3,621 GME students, not 5,036, in 1994. The other 1,415 trainees were not DoD-supported, but were deferred from entry on active duty at no expense to DoD while they trained in civilian programs. Second, the first sentence of the final paragraph on page 13 should state that officials at OASD(HA) stated that all active duty physicians should serve a tour assigned to an operational unit or to a non-medical center medical treatment facility in close contact with operational units, either before or immediately after residency training.

The following comments are keyed to the Recommendations for Corrective Action starting on page 20:

1. Issue DoD-wide medical readiness training guidance and standards.

Concur with comment. The recently published Medical Readiness Strategic Plan 2001 (MRSP 2001) provides a strong overall framework for implementing this recommendation. The new Department of Defense Instruction, Military Medical Readiness Skills Training, is about to be published. Monitoring of the execution of its provisions, as well as tracking of the new implementation plans required by MRSP 2001,

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will provide the necessary follow-through that will translate policy into effective action. I understand that recommendation 1.b will be modified to reflect the agreement on operational and non-medical center tours described above.

Revised

2. Update and distribute the "Military-Unique Curricula" manual.
3. Require distribution and program incorporation of the Textbook of Military Medicine series.

4. Require USUHS oversight and approval of locally produced teaching materials.

I concur with these three recommendations with a common comment: The new Defense Medical Readiness Training Institute (DMRTI) is a flag officer command now being established under the Uniformed Services University of Health Sciences. Its broad oversight authority and responsibility will extend to all medical readiness training and to military-unique graduate medical education conducted in DoD, as well as to support of the development of joint medical doctrine. Achieving an appropriate level of standardization and consensus on texts and other teaching materials, setting standards, and assessing outcomes are all key features of the new Institute's mission. Its operation under USUHS will be overseen in turn for me by the policy-level Defense Medical Readiness Training and Education Council (DMRTEC). The new Institute is specifically oriented to enhancing the reach and effectiveness of both our readiness training and professional military medical education.

5. Promote and expedite development of the Defense Medical Human Resource System or a similar system.

6. Impose a moratorium on other automated systems to record physician readiness training.

Nonconcur. The readiness training fields of the new Centralized Credentials Quality Assurance System (CCQAS), are well suited to the level of detail needed for DoD policy-level oversight. CCQAS is fully resourced and on track for deployment. The Services have need for greater levels of detail than does DoD in readiness training reporting, for example, the data needed to assess units meeting the training criteria for the Unit Status Report (USR) system. It would not be appropriate to restrict the Services in their use of the training recording systems most suited to their specific needs.

With respect to the observations on page 27 and 28 on management controls, I agree that implementation of Recommendation 1 will improve our control posture. Use of the new CCQAS data system, which is already well on its way to implementation, will better complete our management control structure than implementation of Recommendation 5. In assigning an appropriate risk level to readiness training as an assessable unit, I will ask the DMRTEC to consider the issue.

To conclude, I am confident that we have begun to devote an appropriate level of new emphasis to the crucial topic of medical readiness, both within our graduate medical education programs and in the whole Defense Health Program. The Service Surgeons General and I have the strongest possible commitment to the aggressive execution of MRSP 2001 with its implementing plans, its related DOD Instruction, and the powerful new vehicle of the Defense Medical Readiness Training Institute. My point of contact is Colonel Michael A. Dunn, Director, Clinical Consultation, at DSN 225-6800.


Stephen C. Joseph, M.D., M.P.H.

Uniformed Services University of the Health Sciences Comments

Final Report
Reference



GRADUATE MEDICAL EDUCATION

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
F. EDWARD HÉBERT SCHOOL OF MEDICINE
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BETHESDA, MARYLAND 20814-4796

April 30, 1996



TEACHING HOSPITALS
WALTER REED ARMY MEDICAL CENTER
NAVAL HOSPITAL, BETHESDA
MALCOLM GROW AIR FORCE MEDICAL CENTER
WILFORD HALL AIR FORCE MEDICAL CENTER

Mr. Gene Akers
DoD IG
521 Butler Farm Road
Suite 206
Hampton, VA 23666

Dear Mr. Akers:

The Uniformed Services University of the Health Sciences was not on the distribution list of the draft DoD IG report related to GME programs. I was, however, provided with a copy by COL Mike Dunn, OSD(HA). In general, I felt that it represented a balanced view of many of the areas for improvement that we had also identified in our review, done for DoD(HA) last July. Based on recent information, it is clear that there are already a number of HA initiatives in progress to correct the deficiencies even before your report is released in its final form. I am particularly pleased by your recognition that the University can make a valuable contribution by playing an expanded role in readiness training. This is a mission that we feel is appropriate to the University and would welcome.

If you would accept one editorial note, the report cites in several places that the number of programs responding to the USUHS survey was 151. Actually, the number was 242 from the medical treatment facilities of the three Services, plus three from USUHS, for a total of 245.

I appreciated the opportunity you gave me to provide some input during the information gathering phase of the study. If I can be of further assistance, please let me know.

Best wishes,

Howard E. Fauver, Jr., M.D.
Associate Dean for Graduate Medical Education

Revised
Page 24

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This report was prepared by the Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, DoD.

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