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Report to Congressional Committees

June 2021

DEFENSE HEALTH CARE

Actions Needed to Define and Sustain Wartime Medical Skills for Enlisted Personnel

Accessible Version

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GAO-21-337

GAO Highlights

Highlights of GAO-21-337, a report to congressional committees

June 2021

DEFENSE HEALTH CARE

Actions Needed to Define and Sustain Wartime Medical Skills for Enlisted Personnel

Why GAO Did This Study

DOD has over 73,000 active-duty enlisted medical personnel who must be ready to provide life-saving care to injured and ill servicemembers during deployed operations, using their wartime medical skills.

Senate Report 116-48 accompanying a bill for the National Defense Authorization Act for Fiscal Year 2020 included a provision for GAO to review DOD's efforts to maintain enlisted personnel's wartime medical skills. This report examines, among other objectives, the extent to which (1) the military departments have defined, tracked, and assessed enlisted personnel's wartime medical skills, and (2) DOD has developed plans and processes to sustain these skills and assessed risks associated with their implementation. GAO analyzed wartime medical skills checklists and guidance; reviewed plans for skills sustainment; and interviewed officials from DOD and military department medical commands and agencies, and nine inpatient military medical treatment facilities.

What GAO Recommends

GAO is making 30 recommendations, including that military departments fully define and implement wartime medical skills for enlisted medical personnel subspecialties, track skills training, and establish performance goals and targets for training completion, as appropriate; and that DOD develop metrics to assess how military medical treatment facility workload and civilian partnerships sustain these skills and assess risks to skills sustainment. DOD concurred and described some related actions, as discussed in the report.

View GAO-21-337. For more information, contact Brenda S. Farrell at (202) 512-3604 or FarrellB@gao.gov.

What GAO Found

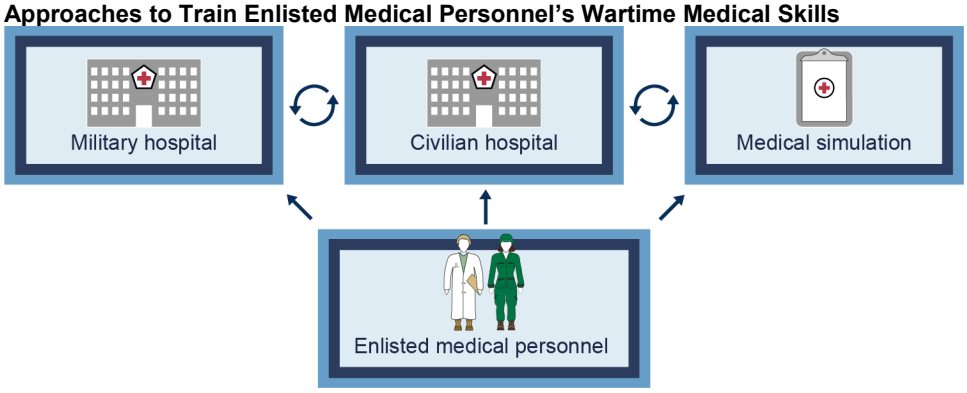
The military departments have not fully defined, tracked, and assessed wartime medical skills for enlisted medical personnel. The departments have defined these skills for 73 of 77 occupations. However, among other issues,

- the Army and the Air Force have not defined skills for numerous highly-skilled subspecialties that require additional training and expertise, such as Army Critical Care Flight Paramedics. Subspecialty personnel are key to supporting lifesaving medical care during deployed operations.
- The Army does not consistently track wartime medical skills training for enlisted medical personnel in its official system.
- The military departments are not able to fully assess the preparedness of enlisted medical personnel because, according to officials, they have not developed performance goals and targets for skills training completion.

As a result, the military departments lack reasonable assurance that all enlisted medical personnel are ready to perform during deployed operations.

The Department of Defense (DOD) has not fully developed plans and processes to sustain the wartime medical skills of enlisted medical personnel. While the Defense Health Agency (DHA) has initiated planning efforts to assess how the military departments' three primary training approaches sustain readiness (see figure), these efforts will not fully capture needed information. For example, DHA's planned metrics to assess the role of military hospitals and civilian partnerships in sustaining readiness would apply to a limited number of enlisted occupations. As a result, DHA is unable to fully assess how each training approach sustains readiness and determine current and future training investments.

Approaches to Train Enlisted Medical Personnel's Wartime Medical Skills



Source: GAO analysis of Department of Defense information. | GAO-21-337

DOD officials have identified challenges associated with implementing its training approaches. For example, DOD relies on civilian partnerships to sustain enlisted medical personnel's skills, but DOD officials stated that licensing requirements and other issues present challenges to establishing and operationalizing civilian partnerships. DOD has not analyzed or responded to such risks, and may therefore be limited in its ability to sustain wartime medical skills.

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Abbreviations

(ASD)HA	Assistant Secretary of Defense for Health Affairs
DHA	Defense Health Agency
DOD	Department of Defense
MHS	Military Health System
MTF	medical treatment facility

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June 17, 2021

The Honorable Jack Reed
Chairman
The Honorable James M. Inhofe
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Adam Smith
Chairman
The Honorable Mike Rogers
Ranking Member
Committee on Armed Services
House of Representatives

Military medical personnel must be ready to provide life-saving care to injured and ill servicemembers in an expeditionary setting, using their wartime medical skills.[1] While recent Department of Defense (DOD) efforts to assess and improve the wartime medical skills of military personnel have focused on officers, particularly physicians, enlisted medical personnel constitute over two-thirds of all active-duty medical personnel. In fiscal year 2019, there were 73,454 active-duty enlisted medical personnel across the Army (38%), the Navy (37%), and the Air Force (25%), spanning 80 occupations. These personnel perform key roles in the delivery of healthcare in an expeditionary environment, including serving as first responders that provide point-of-injury care, serving as members of highly-mobile surgical teams, and working in field hospitals and hospital ships.

In recent years, DOD has taken steps in response to congressional mandates to further establish military medical treatment facilities (MTF) as platforms for sustaining the operational readiness of active-duty medical providers while increasing efficiency. For example, in 2016, DOD submitted to the congressional defense committees a modernization

[1]Wartime medical skills are those specific abilities required by medical personnel that are essential to the success of the medical mission during deployed operations. An expeditionary setting is a setting in which servicemembers are deployed and/or operational. Department of Defense Instruction 6000.19, *Military Medical Treatment Facility Support of Medical Readiness Skills of Health Care Providers* (Feb. 7, 2020).

study in response to section 713 of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015.[2] The study's main goals were to increase medical force readiness to support military operations and achieve cost savings, and it included an MTF analysis of 24 military hospitals to determine whether they should maintain inpatient capabilities or birthing centers. The study recommended changes for 10 of the 24 hospitals, including closing inpatient services in whole or part at eight of them. In September 2016, we reported that the study's recommendations positioned DOD to improve the effectiveness and efficiency of the Military Health System (MHS), but that there were shortcomings in its methodology.[3] To strengthen any future assessments of MTF changes, we recommended that DOD describe steps taken to assess the reliability of supporting data. DOD concurred with the recommendation and has taken some steps to implement it.[4]

The National Defense Authorization Act for Fiscal Year 2017 enacted further reforms to the MHS to improve and maintain operational medical force readiness, including by requiring DOD to implement measures to maintain the critical wartime medical readiness skills of health care providers.[5] Following this legislation, in 2018, DOD initiated a project to define the wartime medical skills of deployable enlisted medical occupations which, according to DOD officials, are common to at least two military departments. In February 2019, we reviewed DOD's plans to maintain the wartime medical skills of physicians and identified concerns, among other things, with the metric DOD had developed to assess physicians' clinical readiness.[6] We recommended that DOD identify and mitigate limitations in this metric, and DOD concurred with this

[2]Pub. L. No. 113-291, § 713 (2014).

[3]GAO, *Defense Health Care Reform: DOD Needs Further Analysis of the Size, Readiness, and Efficiency of the Medical Force*, GAO-16-820 (Washington, D.C.: Sept. 21, 2016).

[4]In its July 2018 update to the modernization study, DOD included the sources of its data and some data limitations. However, as of September 2020, DOD had not yet described its efforts to test data reliability. As a result, this recommendation remains open.

[5]Pub. L No. 114-328, § 725 (2016).

[6]GAO, *Defense Health Care: Actions Needed to Determine the Required Size and Readiness of Operational Medical and Dental Forces*, GAO-19-206 (Washington, D.C.: Feb. 21, 2019).

recommendation.[7] Subsequently, in February 2020, DOD issued DOD Instruction 6000.19, outlining principles for the sustainment of wartime medical skills, including direction for the military departments to define wartime medical skills and implement a process to assess and maintain those skills.[8]

The Senate report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2020 included a provision for us to review DOD's efforts to maintain the wartime medical skills of DOD's enlisted medical personnel.[9] This report assesses the extent to which (1) the military departments have defined wartime medical skills for enlisted medical personnel and tracked and assessed skills sustainment, (2) DOD has developed plans and processes to sustain enlisted personnel's wartime medical skills and assessed risks associated with their implementation, and (3) the military departments have established and met recruitment and retention goals for enlisted medical personnel from fiscal years 2015 through 2019 and relied on relevant information in their use of recruitment and retention bonuses.

For our first objective, we reviewed lists of joint and military department wartime medical skills for individual enlisted medical occupations, known as "checklists." Specifically, we evaluated the military departments' efforts to define checklists for enlisted medical occupations, integrate joint skills and military department-specific checklists, and review and update checklists. We also reviewed the military departments' efforts to determine appropriate sustainment training frequencies for skills within checklists. We evaluated these efforts against DOD and military

[7]Specifically, we recommended that DOD mitigate limitations regarding data reliability, the lack of complete information on reserve component providers and patient care workload performed outside of MTFs, and the lack of linkage between the metric and patient care and retention outcomes. As of November 2019, DOD had not taken any actions to address this recommendation. For further information on our related work, see the Related GAO Products page of this report.

[8]Department of Defense Instruction 6000.19. DOD Instruction 6000.19 tasks the military departments with establishing expeditionary knowledge, skills, and abilities, which we refer to as wartime medical skills, for health care providers.

[9]S. Rep. No. 116-48 at 208-209 (2019).

department guidance,[10] our prior work on strategic training,[11] and *Standards for Internal Control in the Federal Government*.[12] Specifically, we determined the monitoring and control activities components of internal controls were significant to this objective, along with the underlying principles that management should remediate identified internal control deficiencies on a timely basis and implement control activities through policies.

We also reviewed military departments' checklists, policy documents, and training documents in order to evaluate their efforts to prescribe how personnel are trained on medical skills found within checklists. We compared this to DOD guidance, our prior work on strategic training, and Standards for Internal Control in the Federal Government.[13] Specifically, we determined that the control activities component of internal controls was significant to this objective, along with the underlying principle that management should implement control activities through policies. To perform these analyses, we included enlisted medical occupations from the Army, the Navy, and the Air Force, with the exception of several occupations that have been marked for deletion, do not have a deployed

[10]DOD Instruction 6000.19. U.S. Army Training and Doctrine Command Pamphlet 350-70-14, *Training and Education Development in Support of the Institutional Domain* (Mar. 27, 2015); U.S. Army Medical Command Operation Order 20-30, *Enabling a Ready Medical Force (RMF)* (June 2020); Chief, Navy Bureau of Medicine and Surgery Letter 6000, *Naval Knowledge, Skills, and Abilities Process and Readiness Criteria Implementation* (Dec. 17, 2019); and Air Force Instruction 41-106, *Air Force Medical Readiness Program* (July 29, 2020).

[11]GAO, *Human Capital: A Guide for Assessing Strategic Training and Development Efforts in the Federal Government*, GAO-04-546G (Washington, D.C.; Mar. 1, 2004).

[12]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.; Sep. 2014).

[13]Department of Defense Directive 1322.18, *Military Training* (Oct. 3, 2019); GAO-04-546G; and GAO-14-704G. To perform our analysis of Army checklists, we excluded the Army's general Individual Critical Task Lists and focused on its more narrowly focused Individual Critical Task List Readiness Requirements, which, according to officials, are limited to medical skills needed in a deployed environment.

medical mission, or are not managed by the respective military department's enlisted medical corps.[14]

To evaluate the extent to which the military departments track data on the completion of checklist training requirements for enlisted medical personnel, we reviewed military department guidance and data management tools against DOD guidance and *Standards for Internal Control in the Federal Government*.[15] Specifically, we determined that the monitoring component of internal controls was significant to this objective, along with the underlying principle that management should establish and operate monitoring activities to monitor the internal control system and evaluate results. We also evaluated the military departments' ability to assess the readiness of enlisted medical personnel by determining the extent to which they have developed targets for readiness in accordance with our prior work and *Standards for Internal Control in the Federal Government.*[16] Specifically, we determined that the risk assessment component of internal controls was significant to this objective, along with the underlying principle that management should define objectives clearly to enable identification of risks.

To solicit views on the effectiveness of wartime medical skills checklists we interviewed officials from the Office of the Assistant Secretary of

[14]We excluded the following Army enlisted medical occupations for the purposes of our first objective: Cardiovascular Specialist, which is marked for deletion; Ear, Nose, and Throat Specialist, which is marked for deletion; Chief Medical Noncommissioned Officer, which, according to officials, is advisory/administrative in nature and requires qualification in another enlisted occupation; and Special Forces Medical Sergeant, which is not included as a part of the U.S. Army Medical Department's Enlisted Corps. We excluded the following Navy enlisted medical occupations for the purposes of our first objective: Naval Special Warfare Special Operations Tactical Medic and Naval Special Warfare Special Operations Combat Medic. We excluded the following Air Force enlisted medical occupations for the purposes of our first objective: Aerospace & Operational Physiology, which, according to an official, is being transitioned out of the enlisted medical corps; Histopathology, which, according to an official, does not have an expeditionary readiness mission; Dental Laboratory, because—according to an official—personnel in this occupation do not perform their in-garrison role when deployed, but instead predominantly serve as escorts to base visitors or in support roles; and Pararescue. The Marine Corps does not maintain its own enlisted medical workforce, and instead relies on servicemembers from the Navy to provide medical care to its personnel in a deployed setting.

[15]Department of Defense Instruction 1322.24, *Medical Readiness Training (MRT)* (Mar. 16, 2018). GAO-14-704G.

[16]GAO, *Veterans Justice Outreach Program: VA Could Improve Management by Establishing Performance Measures and Fully Assessing Risks*, GAO-16-393 (Washington, D.C.: Apr. 28, 2016). GAO14-704G.

Defense for Health Affairs, the military departments, and a nongeneralizable sample of MTF officials at nine inpatient MTFs and six MTF clinics. To select the inpatient MTFs, we obtained and analyzed Defense Health Agency (DHA) data on 2019 patient volume for MTFs within the United States, including daily inpatient census information and annual ambulatory, or non-inpatient, encounters as a measure for the size of each MTF. We selected three inpatient MTFs per military department to reflect a range of facility sizes within the context of this group. We also considered information such as whether MTFs had a medical simulation program. To select the MTF clinics we contacted, we obtained and analyzed DHA data from 2019 on the average number of ambulatory encounters for MTFs within the United States as a measure of the size of each MTF. We selected two MTFs per military department, including a range of sizes. To assess the reliability of data sets used to select MTFs, we solicited information from an official responsible for the oversight of the data concerning data management practices and any concerns regarding our planned use of the data. We found the data to be sufficiently reliable for the purpose of selecting MTFs to solicit views on enlisted medical personnel training.

For our second objective, we reviewed DOD and military department guidance outlining principles for sustaining wartime medical skills.[17] We also interviewed cognizant officials regarding their efforts to measure the contributions of MTF workload and civilian partnerships to readiness sustainment, as required by DOD Instruction 6000.19.[18] In addition, we interviewed military department officials responsible for medical simulation training programs concerning the role of these programs in sustaining readiness, and reviewed DHA plans to assess medical simulation's contribution to sustainment of wartime medical skills. We compared these efforts with our prior work on training in the federal government, which emphasizes the need for evaluative data to make reasoned decisions about the optimal mix of training mechanisms to employ in the federal government, as well as *Standards for Internal Control in the Federal Government.*[19] Specifically, we determined that the information and communication component of internal controls was significant to this objective, as well as the underlying principle that

[17]DOD Instruction 6000.19. Operation Order 20-30. Chief, Navy Bureau of Medicine and Surgery Letter 6000. AFI 41-106.

[18]DOD Instruction 6000.19.

[19]GAO-04-546G; GAO-14-704G.

management should use quality information to achieve the entity's objectives.

To gain an understanding of how wartime medical skills are sustained in practice, including how the military departments identify and address gaps in training, we reviewed relevant military department guidance and interviewed senior clinical staff and enlisted leaders at nine inpatient MTFs and contacted leadership at six MTF clinics. We compared efforts to sustain enlisted personnel's wartime medical skills with DOD guidance directing a clinical readiness assessment process.[20] Finally, we interviewed DHA, military department, and MTF officials concerning their assessment of risk related to potential challenges to implementing efforts to sustain enlisted personnel wartime medical skills, and assessed these efforts in light of *Standards for Internal Control in the Federal Government*.[21] Specifically, we determined that the risk assessment component of internal controls was significant to this objective, as well as the underlying principle that management should identify, analyze, and respond to risks related to achieving defined objectives.

For our third objective, we obtained and reviewed recruitment data for enlisted medical personnel for fiscal years 2015 through 2019 from each of the three military departments and compared the actual number of recruits to established goals. We chose this time period because it constituted the most recent and complete data available at the time of our review. Similarly, we obtained and reviewed data on the staffing of occupations at individual skill levels for fiscal years 2015 through 2019 from each of the military departments and compared them to authorized positions, as specified in department staffing documents.[22] We compared DOD's management of retention goals to key principles for human capital management, which state that decisions regarding investments should be based largely on the expected improvement in agency results,[23] and

[20]DOD Instruction 6000.19.

[21]GAO14-704G.

[22]Authorized strengths are the total number of authorized military and civilian personnel positions identified on the manning document for an MTF. For military positions, authorized means the Secretary of the appropriate military department has agreed to commit an authorized position, as defined by 10 U.S.C. § 101, against the manning document. DOD Instruction 6000.19.

[23]GAO, *A Model of Strategic Human Capital Management*, GAO-02-373SP (Washington, D.C.: Mar. 15, 2002).

Standards for Internal Control in the Federal Government.[24] Specifically, we determined that the risk assessment component of internal controls was significant to this objective, as well as the underlying principle that management should define objectives clearly to enable the identification of risks. We also obtained and analyzed data on spending on recruitment and retention bonuses for enlisted medical occupations for fiscal years 2015 through 2019 from each of the military departments.

To assess the reliability of data on recruitment, staffing rates, and bonus spending, we interviewed officials responsible for the oversight of the data concerning their data management practices and whether they had any concerns regarding our planned use of the data. We found the data to be sufficiently reliable to report the number of recruits against each department's goals, staffing rates, and spending on bonuses in each fiscal year from 2015 through 2019. In addition, we obtained and reviewed data models used by the military departments to determine recruitment and retention bonuses, and interviewed responsible military department officials concerning their decision-making processes for offering these bonuses. We compared this information with DOD guidance[25] and practices outlined in the *Report of the Eleventh Quadrennial Review of Military Compensation,*[26] which collectively identify factors the military departments should consider when offering bonuses.

We conducted this performance audit from November 2019 to June 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[24]GAO14-704G.

[25]Department of Defense Instruction (DOD) 1304.31, *Enlisted Bonus Program* (Nov. 5, 2020).

[26]Department of Defense (DOD), *Report of the Eleventh Quadrennial Review of Military Compensation* (June 2012).

Background

Roles and Responsibilities within the Military Health System

The responsibility for health care delivery within the MHS is shared among the military departments—the Army, the Navy, and the Air Force—and the DHA, with oversight from the Office of the Secretary of Defense and advice from the Joint Staff. As such, multiple officials and organizations are responsible for DOD's enlisted medical personnel, their readiness, and the MTFs to which many of them are assigned.

The Under Secretary of Defense for Personnel and Readiness is the principal staff assistant and advisor to the Secretary for health-related matters and, in that capacity, develops policies, plans, and programs for health and medical affairs.[27]

The Secretaries of the military departments are responsible for organizing, training, and equipping military forces—including enlisted medical personnel—as directed by the Secretary of Defense. They are also responsible for ensuring the readiness of military personnel and providing military personnel—including enlisted medical personnel—and authorized resources in support of the combatant commanders and the DHA.

- Each military department maintains one or more commands or agencies, which are responsible for developing and maintaining the readiness of medical personnel, including enlisted medical personnel. These include the U.S. Army's Medical Command and the Medical Center of Excellence within the U.S. Army Training and Doctrine Command, the Navy's Bureau of Medicine and Surgery, and the Air Force Medical Readiness Agency.
- The Surgeon General of each respective military department serves as the principal advisor to the Secretary of the military department concerning all health and medical matters of the military department. Each military department also maintains a senior enlisted advisor to

[27]Department of Defense Directive 5124.02, *Under Secretary of Defense for Personnel and Readiness (USD(P&R))* (June 23, 2008).

the Surgeon General and an enlisted corps chief that oversees the enlisted corps.

The Assistant Secretary of Defense for Health Affairs (ASD(HA)) serves as the principal advisor for all DOD health-related policies, programs, and activities.[28] The ASD(HA) has the authority to develop policies, conduct analyses, provide advice, and make recommendations to the Secretary of Defense and others; issue guidance; and provide oversight on matters pertaining to the MHS. Further, the ASD(HA) prepares and submits a DOD unified medical program budget which includes, among other things, the Defense Health Program budget to provide resources for MTFs and the TRICARE Health Program.

The Director of the DHA manages, among other things, the execution of policies issued by the ASD(HA) and manages and executes the Defense Health Program appropriation.[29] The Director of the DHA is also responsible for the TRICARE Health Program. In December 2016, Congress expanded the role of the DHA by directing the transfer of responsibility for the administration of each MTF from the military departments to the DHA by September 30, 2021.[30] Specifically, the Director of the DHA will be responsible for budgetary matters, information technology, health care administration and management, administrative policy and procedure, and military medical construction, among other things.

Size and Composition of the Enlisted Medical Workforce

Each military department's medical command or service maintains an enlisted corps that provides care to servicemembers in both deployed and nondeployed settings, and to qualified beneficiaries in the United States and around the world. Personnel within each department's enlisted corps—collectively referred to as "enlisted medical personnel" for the purposes of this report—perform jobs in more than 80 unique enlisted medical occupations across the three military departments. These occupations include clinical positions ranging from first responders—such

[28]Department of Defense Directive 5136.01, *Assistant Secretary of Defense for Health Affairs (ASD(HA))* (Sept. 30, 2013) (incorporating change 1, effective Aug. 10, 2017).

[29]Department of Defense Directive 5136.13, *Defense Health Agency (DHA)* (Sept. 30, 2013).

[30]10 U.S.C. § 1073c(a)(1). Initially, the transfer of responsibilities to the DHA was to occur by October 1, 2018. However, in August 2018, Congress amended 10 U.S.C. § 1073c to require this transition occur by September 30, 2021. Pub. L. No. 115-232, § 711 (2018).

as Army Health Care Specialists (also referred to as Combat Medics) and Navy Independent Duty Corpsmen embedded within combat units—to personnel performing support roles, such as Operating Room Technicians and Radiology Technologists. Members of the enlisted corps also fill nonclinical positions, such as Biomedical Equipment Specialists and medical materiel personnel, as well as dental care positions.

Enlisted medical personnel constitute over two-thirds of all active-duty medical personnel, with the remainder comprising officers serving in the military departments' various corps, including the medical corps—consisting of surgeons and physicians—and the nurse corps. In fiscal year 2019, there were 73,454 active-duty enlisted medical across the Army (28,003), the Navy (27,074), and the Air Force (18,377). Appendix I provides an overview of fiscal year 2019 active-duty end strength levels by military department and occupation.

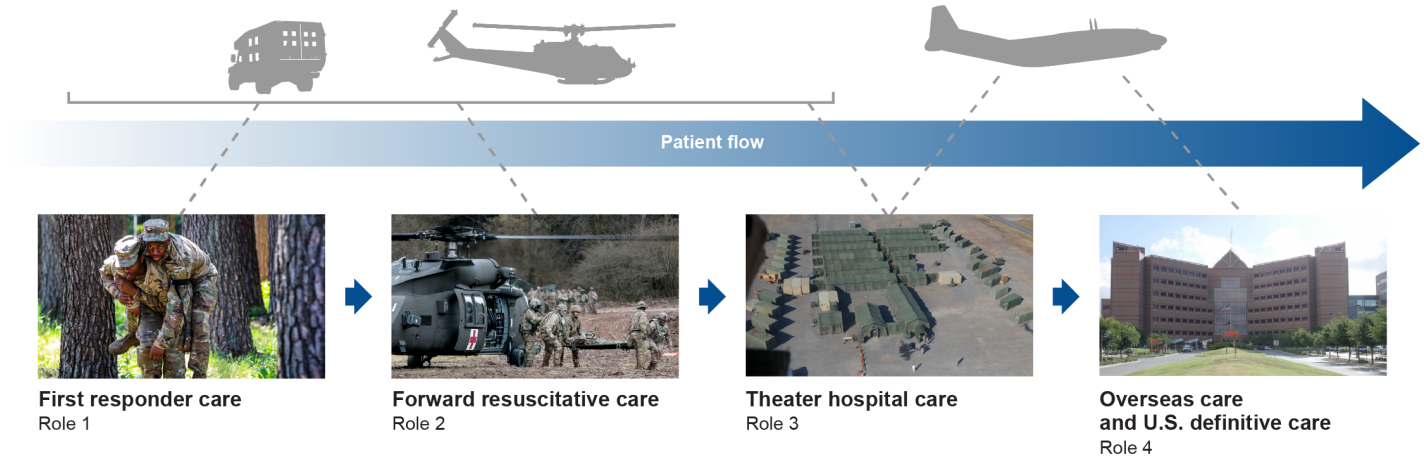
Role of Enlisted Medical Personnel in the Delivery of Health Care

Enlisted medical personnel simultaneously support operational medical care and the delivery of beneficiary health care to patients across the globe, both within DOD's direct care network of MTFs and within operational force units. Specifically, enlisted medical personnel serve in a variety of roles within MTFs. DOD's 721 MTFs vary in size and capabilities, from small clinics to ambulatory surgery centers, hospitals, and medical centers, as well as dental clinics. According to DOD Instruction 6000.19, the primary purpose of MTFs is to support the readiness of the military services. MTFs must spend most of their resources supporting wartime skills, development and maintenance for military medical personnel, or the medical evaluation and treatment of servicemembers. Within MTF clinics, enlisted medical personnel serve in occupations such as Paramedics, Physical Therapy Specialists, and Behavioral Health Specialists, while their roles within larger MTFs can expand to include occupations such as Operating Room Technicians, Radiology Technologists, Medical Laboratory Specialists, and Respiratory Therapy Services.

Enlisted medical personnel also serve critical roles in operational medical care, treating servicemembers and other eligible persons in support of the full range of military operations. DOD has established four categories (referred to as roles) of operational medical care, which extend from the forward edge of the battle area to the United States, with each role

providing progressively more intensive treatment. Care in roles 1 through 3 is provided by medical personnel assigned to deployable units. Role 4 care facilities are MTFs that also provide beneficiary medical care in nondeployed settings. Figure 1 illustrates the different roles of care.

Figure 1: Department of Defense Roles of Operational Medical Care



Source: GAO analysis; Department of Defense, U.S. Army, and Defense Visual Information Distribution Service (photos). | GAO-21-337

The four roles of care provide progressively more intensive treatment, as detailed:

- **Role 1 – First responder care.** This role provides immediate medical care and stabilization in preparation for evacuation to the next role of care, and treatment of common acute minor illnesses. Enlisted medical personnel in these settings include Army Health Care Specialists, Navy Corpsmen, and Air Force Medics.
- **Role 2 – Forward resuscitative care.** This role provides advanced emergency medical treatment as close to the point of injury as possible to attain stabilization of the patient. In addition, it can provide postsurgical inpatient services, such as critical care nursing and temporary holding. Examples of role 2 units include forward surgical teams, shock trauma platoons, area support medical companies, and combat stress control units. Enlisted medical personnel in these settings include Operating Room Technicians and Corpsmen.
- **Role 3 – Theater hospital care.** This role provides the most advanced medical care available outside the United States and overseas definitive care. Role 3 facilities provide significant preventative and curative health care. Examples include Army combat support hospitals, Air Force theater hospitals, and Navy expeditionary

medical facilities. Enlisted medical personnel in these settings include Radiology Technologists and Pharmacy Specialists.

- **Role 4 – Overseas care and U.S. definitive care.** This role provides the full range of preventative, curative, acute, convalescent, restorative and rehabilitative care. Examples of role 4 facilities include MTFs such as Landstuhl Regional Medical Center in Landstuhl, Germany and Naval Medical Center Portsmouth at Portsmouth, Virginia. Enlisted medical personnel in these settings include Physical Therapy Specialists and Patient Administration Specialists.

In addition to the four roles of medical care, en route care to transport patients is also provided via casualty evacuation, medical evacuation, and aeromedical evacuation from the point of patient injury, illness, or wounding. Enlisted medical personnel in these settings include Air Force Aerospace Medical Service personnel who serve as Aeromedical Evacuation Technicians.

Training and Career Path for Enlisted Medical Personnel

Enlisted medical servicemembers train to develop and sustain medical skills throughout their careers. This training consists of the following:

- **Initial training.** Following the completion of basic training, enlisted medical personnel in each military department receive initial training for their occupation, consisting of two distinct phases. DOD provides Phase I training at its Medical Education and Training Campus at Joint Base San Antonio-Fort Sam Houston in Texas. For Army and Air Force enlisted servicemembers, the length of this training varies based on occupation and the respective military department. For example, training to become a Radiology Technologist lasts 840 hours for enlisted soldiers and 760 hours for airmen, whereas members of both military departments complete 776 instructional hours to become a Nuclear Medicine Technologist. Phase I training for Navy enlisted medical personnel consists of 14 weeks of training at the Medical Education and Training Campus—known as “A” School—related to patient care that qualifies them as Hospital Corpsmen. Thereafter, some Navy Hospital Corpsmen will go on to receive additional training in a specialized military occupation. Following Phase I training, enlisted medical personnel across the Army, the Navy, and the Air Force generally complete Phase II training in MTFs or civilian hospitals, consisting of hands-on clinical experience relevant to their occupation.

- **Expeditionary medical training.** Each of the military departments offers medical training classes to prepare its medical personnel for expeditionary settings. Specifically, the U.S. Army Medical Center of Excellence oversees medical training programs for medical personnel, including specialty courses such as the Combat Paramedic Program that prepares Army Health Care Specialists to have an extended scope of practice designed to meet the needs of current and future operating environments. Similarly, the Navy Medicine Operational Training Center, which consists of six detachments, provides instruction in different areas of Navy medicine such as trauma training for Hospital Corpsmen and flight medicine. Finally, while there is no specific Air Force organization focused exclusively on expeditionary medical training, the Air Force does offer additional training opportunities, such as advanced training for Critical Care Air Transport Teams.
- **Sustainment training.** Enlisted medical personnel sustain their skills through several modalities. These include on-the-job experiences, such as working in MTFs or performing rotations in civilian hospitals, as well as formal courses mandated by the military departments and DOD. In addition, the military departments have developed simulation training capabilities to augment live-patient experiences in order to sustain critical clinical skills, including those necessary for trauma care.

Incentives to Recruit and Retain Enlisted Medical Personnel

DOD's compensation package for enlisted medical personnel comprises a collection of pays and benefits used to recruit and retain active-duty servicemembers, including basic pay, allowances for housing and subsistence, and federal tax advantages. In addition, servicemembers can be provided with compensation for specific duties and occupations or conditions of service in the form of special and incentive pays, including bonuses. DOD Instruction 1304.31, *Enlisted Bonus Program,* states that it is DOD policy to use these bonuses as incentives in meeting personnel requirements by attracting and retaining servicemembers with specific skills or in specific career fields.[31] According to this instruction, it is also DOD policy to use these bonuses in a cost-effective manner and in support of management objectives. These bonuses include enlistment bonuses, which provide a monetary incentive to encourage an individual

[31]DOD Instruction 1304.31.

with no prior military service to enlist, and retention bonuses, which provide a monetary incentive to retain adequate numbers of qualified enlisted personnel in certain reenlistment categories. Types of retention bonuses include selective retention bonuses, which offer a monetary incentive for continued military service, and conversion bonuses, which incentivize a servicemember to convert to a designated military skill in which there is a shortage of trained and qualified personnel.

The Under Secretary of Defense for Personnel and Readiness is responsible for developing policies, plans, and programs for, among other things, recruitment and compensation (including bonuses, special pay, and incentives), and exercises the authorities of the Secretary of Defense to set bonuses and special and incentive pays.[32] Each military department manages the execution of its respective enlisted bonus program.

The Military Departments Have Not Fully Defined, Tracked, and Assessed Wartime Medical Skills for Enlisted Medical Personnel

The Military Departments Have Defined Wartime Medical Skills for Most Occupations

The military departments have developed "checklists" of wartime medical skills for most department-specific occupations.[33] Section 725 of the NDAA for Fiscal Year 2017 required DOD to implement measures to maintain the wartime medical readiness skills and core competencies of

[32]Department of Defense Directive 5124.02, *Under Secretary of Defense for Personnel and Readiness (USD(P&R))* (June 23, 2008).

[33]Each military department has specific terms for what we refer to broadly in this report as "checklists" that list the wartime medical skills for each occupation. The Army's checklists are called Individual Critical Task List Readiness Requirements; the Air Force's checklists are called Comprehensive Medical Readiness Program checklists; and the Navy's checklists are known as Naval Medical Readiness Criteria. For the purposes of our analysis, we included checklists associated with both clinical and nonclinical enlisted medical occupations, along with occupations performing care in deployable units and providing care to casualties in military treatment facilities. We did not include enlisted medical occupations serving under the United States Special Operations Command or occupations scheduled for deletion or transition out of the enlisted medical community, as previously discussed.

health care providers within the armed forces.[34] In addition, DOD Instruction 6000.19 *Military Medical Treatment Facility Support of Medical Readiness Skills of Health Care Providers* directs the military departments to establish expeditionary knowledge, skills, and abilities (referred to as wartime medical skills for the purposes of this report) for health care providers, including enlisted medical personnel.[35] As of January 2021, the military departments had developed wartime medical skill checklists for 73 of 77 enlisted medical occupations within the scope of our review. These checklists outline training requirements on specific skills that are intended to prepare enlisted medical personnel to perform their roles in a deployed environment and facilitate the tracking of training on these skills. Specifically:

- The Army has developed a checklist identifying wartime medical skills for all 21 enlisted medical occupations within the scope of our review.[36] According to Army officials, this was accomplished by adapting the Army's broader skills assessment program, known as Individual Critical Task Lists, into a set of more narrowly focused checklists of wartime medical skills comprising those skills needed to operate in a deployed environment.[37]
- The Navy had developed a checklist for 36 of 40 occupations and was in the process of developing the four remaining checklists.[38] The Navy's checklists include three separate categories of skills that each represent different aspects of readiness, such as core practice and combat specialty knowledge.
- The Air Force had developed checklists for all 16 of its occupations that were within the scope of our review.[39] These checklists identify the skills needed in order to operate in an expeditionary environment as a part of its Comprehensive Medical Readiness Program. Similar

[34]Pub. L. No. 114-328, § 725 (2016).

[35]DOD Instruction 6000.19.

[36]As previously noted, we excluded four Army enlisted medical occupations, including two occupations that are marked for deletion, one special operations occupation, and one occupation which officials indicated is administrative in nature.

[37]The Army refers to the narrowly-focused checklists as Individual Critical Task List Readiness Requirements.

[38]As previously noted, we excluded two Navy special operations medical occupations.

[39]As previously noted, we excluded four Air Force enlisted medical occupations, including two occupations that do not have a deployed medical mission and one occupation that is being transitioned out of the enlisted medical corps.

to the Navy, Air Force checklists include different categories of skills, including fundamental clinical skills and skills specific to operating in an expeditionary environment.

Appendix II provides a full list of enlisted medical occupations for which the military departments have created checklists that define wartime medical skills.

The Army and the Air Force Have Not Defined Skills for Numerous Highly-Skilled Subspecialties

The Army and the Air Force maintain highly-skilled subspecialties within some of their enlisted medical occupations that require additional training and expertise, and which are key to supporting lifesaving medical care during deployed operations. However, neither the Army nor the Air Force has defined wartime medical skills for all of these subspecialties. Specifically, the Army's subspecialties denote specialized skills, qualifications, and requirements that are closely related to and are in addition to those inherent to the occupation. For example, enlisted medical personnel serving as Critical Care Flight Paramedics—a subspecialty within the Army Health Care Specialist occupation—provide en route care to transport patients and receive significantly more complex training than personnel serving as Health Care Specialists. Similarly, the Air Force maintains specialized positions associated with particular equipment or functions within a select number of occupations, as well as special experience identifiers, which denote special experience and training. For example, enlisted medical personnel qualified as members of the Surgical Services occupation can receive additional specialized training in urological or orthopedic surgery. These subspecialists serve unique roles in the provision of medical care during deployed operations beyond the scope of practice for their general occupation. DOD Instruction 6000.19 *Military Medical Treatment Facility Support of Medical Readiness Skills of Health Care Providers* directs the military departments to establish wartime medical skills for health care providers, including enlisted medical personnel.[40] Additionally, Army guidance directs the identification of wartime medical skills for occupational subspecialties.[41]

[40]DOD Instruction 6000.19.

[41]U.S. Army Training and Doctrine Command Pamphlet 350-70-14.

We found that while the Army and the Air Force have defined wartime medical skills for subspecialties such as the Army's Dental Laboratory Specialty and the Ophthalmology subspecialty of the Air Force's Optometry occupation, they have not defined wartime medical skills for numerous other subspecialties.[42] Through review of skills checklists and our interviews with military department officials, we identified a number of examples of subspecialties without defined wartime medical skills. Specifically, the Army—which has focused on defining wartime medical skills for general occupations, according to Army officials—has not defined wartime medical skills for the Computer Axial Tomography Scan subspecialty of the Biomedical Equipment Specialist occupation or the Certified Medical Coder subspecialty of the Patient Administration Specialist occupation. Additionally, the Army has not defined wartime medical skills for three subspecialties associated with the Health Care Specialist occupation: the Civil Affairs Medical Sergeant, Critical Care Flight Paramedic, and Immunization and Allergy Specialist subspecialties.[43] Similarly, the Air Force has not defined wartime medical skills for the Flight and Operational Medical Technician or Critical Care Technician subspecialties within the Aerospace Medical Service occupation, or for the Diagnostic Medical Sonography subspecialty within the Diagnostic Imaging occupation.

Standards for Internal Control in the Federal Government states that management should remediate deficiencies by, for example, completing and documenting corrective actions to remediate internal control deficiencies on a timely basis.[44] Additionally, these standards state that management should implement control activities through policies, including by periodically reviewing policies for continued relevance and effectiveness in achieving the entity's objectives.[45] However, neither the Army nor the Air Force have taken corrective action to define wartime

[42]In addition to checklists defined for the 16 Air Force occupations discussed above, the Air Force has also developed a wartime medical skills checklist for the Ophthalmology subspecialty.

[43]The Army has developed training documents that outline skills and competencies for the Critical Care Flight Paramedic and Immunization and Allergy Specialist subspecialties, but has not developed a checklist limited to those wartime medical skills necessary to ensure that personnel are prepared to perform their deployed medical duties.

[44]GAO-14-704G.

[45]GAO-14-704G.

medical skills for their remaining occupational subspecialties, such as by developing and implementing a plan to address all subspecialties.

Specifically, Army officials stated that they plan to conduct a meeting in February 2021 during which subject matter experts—including experts from occupational subspecialties—will review and identify medical skills and competencies for the Health Care Specialist occupation and associated subspecialties. However, guidance for this meeting did not instruct subject matter experts to identify wartime medical skills for the Health Care Specialist occupation's subspecialties. Similarly, although Army officials stated that they plan to hold such a meeting in November 2021 for the Biomedical Equipment Specialist occupation, officials were unable to provide guidance for this meeting, as the guidance had not yet been finalized. According to Army officials, the Army does not have plans to conduct a similar meeting for the Patient Administration Specialist occupation—including its Certified Medical Coder subspecialty—in 2021. Army officials acknowledged the missing checklists, but stated that other documents, such as the broader Individual Critical Task Lists, serve to identify wartime medical skills for these occupations. However, as noted above, DOD Instruction 6000.19 directs the military departments to establish wartime medical skills for health care providers, including enlisted medical personnel. Consistent with this, the Army has created checklists for other occupational subspecialties that focus exclusively on wartime medical skills.

Similarly, an Air Force official stated that the Air Force has not finalized a plan with timelines to define wartime medical skills for occupational subspecialties. Specifically, an Air Force official stated that officials are considering how they might define wartime medical skills for occupational subspecialties, such as incorporating subspecialty skills into checklists for general occupations or developing new, subspecialty-specific checklists.[46] Moreover, Air Force Instruction 41-106 and other documentation do not require the identification of subspecialty skills for existing or future enlisted medical subspecialties with an expeditionary role.[47] As a result,

[46]An Air Force official stated that the Air Force is prioritizing development of checklists for officer and enlisted occupations and subspecialties that are difficult to train or present higher risks if not trained correctly, including the Independent Duty Medical Technician and Critical Care Technician subspecialties.

[47]AFI 41-106 and U.S. Air Force, *Criteria for Creating/Reviewing a Comprehensive Medical Readiness Program Item* (May 31, 2012).

an Air Force official stated that wartime medical skills have not been identified for all subspecialties.

Without taking corrective action—such as developing and implementing a plan that includes timelines—to define and implement wartime medical skills for all enlisted medical subspecialties, the Army and the Air Force will lack reasonable assurance that subspecialty personnel have been trained on the skills necessary to perform their roles in the expeditionary environment. Additionally, without establishing guidance that requires the development of wartime medical skills for current and future enlisted medical subspecialties with an expeditionary role, the Air Force will lack a mechanism to help ensure that wartime medical skills are defined for occupational subspecialties on a continual basis.

The Navy Has Fully Incorporated Joint Wartime Medical Skills into Its Checklists but the Army and the Air Force Have Not

The military departments have developed joint wartime medical skills ("joint skills") for enlisted medical occupations, which, according to officials, are common to at least two military departments. The Navy has fully incorporated these joint skills into its checklists for enlisted occupations; however, the Army and the Air Force have not. DOD Instruction 6000.19 directs wartime medical skills to be integrated with joint clinical readiness metrics (i.e., joint wartime medical skills).[48]

In December 2017, DOD chartered the Joint Medical Readiness Requirements Council, under which it developed a joint working group composed of senior leadership and subject matter experts to develop joint skills for common medical occupations.[49] Since then, the working group has developed joint skills for 12 enlisted medical occupations common to the military departments, and is in the process of developing joint skills for three other common occupations.[50] The 12 common enlisted medical occupations with joint skills correspond to 15 Navy occupations, 11 Army

[48]DOD Instruction 6000.19. DOD officials we spoke with envisioned this being accomplished by the military services incorporating joint skills into their checklists.

[49]According to DOD officials, this working group defines joint skills for enlisted medical occupations common to two or more military departments.

[50]According to a DOD official, DOD had not yet begun requiring that enlisted medical personnel train on joint skills as of February 2021.

occupations, and 13 Air Force occupations. Table 1 shows the common enlisted medical occupations for which the military departments have developed joint skills.

Table 1: Common Military Occupations with Joint Wartime Medical Skills and Corresponding Military Department Occupations for Enlisted Personnel

Common occupation[a]	Army occupation	Navy occupation	Air Force occupation
Medical Care and Treatment, General	Health Care Specialist	Hospital Corpsman/ Medical Care and Treatment, General	Aerospace Medical Service
Operating Room Services	Operating Room Specialist	Surgical Technologist	Surgical Service
Respiratory Therapy Services	Respiratory Specialist	Respiratory Therapist	Cardiopulmonary Lab
Independent Duty Corpsman/Independent Duty Medical Technicians	N/A	Submarine Force Independent Duty Corpsman Fleet Marine Force Reconnaissance Independent Duty Corpsman Surface Force Independent Duty Corpsman Deep Sea Diving Independent Duty Corpsman	Independent Duty Medical Technician[b]
Environmental Health/Preventive Medicine Technician	Preventive Medicine Specialist	Preventive Medicine Technician	Bioenvironmental Engineering Public Health
Dental Care, General (Enlisted)	Dental Specialist	Dental Assistant	Dental Assistant
Behavioral Health Sciences/Mental Health Technician	Behavioral Health Specialist	Behavioral Health Technician	Mental Health Services
Pharmacy Technician	Pharmacy Specialist	Pharmacy Technician	Pharmacy
Laboratory Technician	Medical Laboratory Specialist	Medical Laboratory Technician	Medical Laboratory
Biomedical Equipment Maintenance[c]	Biomedical Equipment Specialist	Bio-Medical Equipment Technician	Biomedical Equipment Maintenance
Physical Occupational Therapy Services[c]	Physical Therapy Specialist	Physical Therapy Technician	Physical Medicine
Radiology Technologist[c]	Radiology Specialist	Advanced X-Ray Technician	Diagnostic Imaging

Source: GAO analysis of Department of Defense (DOD) information | GAO-21-337

[a]According to DOD officials, DOD defines joint wartime medical skills for enlisted medical occupations common to two or more military departments.

[b]The Independent Duty Medical Technician position is a subspecialty of the Aerospace Medical Service occupation.

[c]As of January 2021, all joint wartime medical skills have received approval by the Deputy Assistant Secretary of the Navy (Military Manpower and Personnel) with the exception of those for the Biomedical Equipment Maintenance, Physical Occupational Therapy Services, and Radiology Technologist common occupations.

The Navy developed its enlisted medical checklists in parallel with the process to develop joint skills for the 12 common occupations and has therefore fully incorporated these skills into its checklists for all 15 affected Navy occupations.[51] The Army and the Air Force have integrated some joint skills into their checklists. For example, the checklist for the Army Health Care Specialist occupation includes joint skills related to training on treating biological and chemical casualties. Similarly, the Air Force's Biomedical Equipment Maintenance, Mental Health Services, and Cardiopulmonary Laboratory checklists include joint skills related to training on maintaining therapeutic equipment, performing psychological first aid, and knowledge of respiratory care clinical practice guidelines, respectively.

However, through our review of military department checklists and interviews with cognizant officials, we identified several examples of joint skills that were not present. For example, the Army's Respiratory Therapist checklist does not include a joint skill related to performing a minimum of 320 hours of respiratory therapy care in a critical care setting every 2 years. Also, its checklist for the Health Care Specialist occupation does not include a joint skill that includes training on performing a walking blood bank. Similarly, the joint skills for Independent Duty Medical Technicians—a subspecialty within the Air Force's Aerospace Medical Service occupation—specify that members of this occupation should maintain an active clinical practice of 360 patients per year, but this is not included in the corresponding Air Force checklist. In addition, the Air Force's Laboratory Technician checklist does not include a joint skill that servicemembers should demonstrate proficiency in performing manual blood counts.

Standards for Internal Control in the Federal Government states that management should remediate deficiencies by, for example, completing and documenting corrective actions to remediate internal control deficiencies on a timely basis.[52] Further, these standards state that management should implement control activities through policies, including by periodically reviewing policies for continued relevance and effectiveness in achieving the entity's objectives.[53] Army and Air Force

[51]Our analysis of Navy checklists for joint wartime medical skills includes Navy checklists that have not been approved, as well as joint wartime medical skills that have been completed but not approved.

[52]GAO-14-704G.

[53]GAO-14-704G.

officials stated that they have not taken corrective actions to ensure joint skills are fully incorporated into their wartime medical skills, such as by developing and implementing update plans. Specifically, although Army guidance requires subject matter experts to meet as a result of triggering circumstances—such as changes in joint education and training—an Army Medical Command official stated that the Army has not yet convened a group of subject matter experts to review skills and competencies for its affected positions, despite joint skills for nine of 12 common occupations being completed in October 2019.[54] Similarly, the Air Force last updated checklists for two affected positions prior to the initiation of joint efforts in November 2018 to define wartime medical skills for common occupations. Moreover, while Army guidance tasks Army Medical Department Corps Chiefs with ensuring joint skills and individual checklists are integrated and Navy guidance outlines its plans for doing so, neither Air Force Instruction 41-106, *Air Force Medical Readiness Program,* nor other Air Force documentation require that joint skills be incorporated into wartime medical skills when creating or updating checklists.[55]

Until the Army and the Air Force take corrective action, such as developing and implementing a plan to fully incorporate joint skills into their respective wartime medical skills checklists, these military departments will lack reasonable assurance that enlisted medical personnel from affected occupations are sustaining joint skills, and DOD will lack the ability to collect timely and accurate information regarding the status of training on joint skills. Additionally, without establishing guidance that requires the incorporation of joint skills into its wartime medical skills checklists, the Air Force will lack reasonable assurance that its wartime medical skills checklists will be updated as joint skills are identified for additional common occupations or as changes are made to existing joint

[54]U.S. Army Training and Doctrine Command Pamphlet 350-70-1, *Training Development in Support of the Operational Training Domain* (Feb. 12, 2019), and U.S. Army Training and Doctrine Command Regulation 350-70, *Army Learning and Policy Systems* (July 10, 2017). The Deputy Assistant Secretary of the Navy (Military Manpower and Personnel) approved of joint wartime medical skills for nine enlisted occupations on October 21, 2019.

[55]Operation Order 20-30. Chief, Navy Bureau of Medicine and Surgery Letter 6000, *Naval Knowledge, Skills, and Abilities Process and Readiness Criteria Implementation, Enclosure 2* (Dec. 17, 2019).The Air Force has issued a flowchart outlining the process to create and review wartime medical skills. U.S. Air Force, Criteria for Creating/Reviewing a Comprehensive Medical Readiness Program Item (May 31, 2012).

skills. As a result, enlisted medical personnel in the Air Force may also not receive training on necessary joint skills.

The Military Departments Have Established Processes to Update Wartime Medical Skills, but the Air Force Has Not Reviewed Skills for All Enlisted Occupations

The military departments have established processes to periodically review and, if necessary, update wartime medical skills checklists in accordance with DOD Instruction 6000.19, which directs the military departments to review wartime medical skills in accordance with military department procedures.[56] Specifically, Army guidance directs subject matter experts to review skills and competencies—including wartime medical skills—at least once every 3 years for enlisted medical occupations, while Navy and Air Force guidance require an annual review of wartime medical skills checklists.[57]

While the Army and the Navy are not yet required to review their checklists due to the checklists' recent implementation, the Air Force has not reviewed most of its checklists within the last year, as directed by Air Force Instruction 41-106. Specifically, the Army implemented its wartime medical skills checklists in 2019, and the checklists therefore have not yet been subject to review. Similarly, the Navy began implementing its checklists in July 2020, and had started to review such checklists in October 2020, according to officials. However, we determined that as of January 2021, 15 of 17 Air Force checklists had not been reviewed within the past year, in accordance with Air Force Instruction 41-106. This includes six checklists that had not been reviewed since 2017 and three that had not been reviewed since 2016. Two Air Force officials that oversee the identification and training of wartime medical skills for individual occupations acknowledged that, as a result, their current checklists are obsolete and likely insufficient for sustaining readiness.

Although Air Force Instruction 41-106 directs the annual review of wartime medical skills checklists, the Air Force has not consistently conducted these annual reviews, and officials stated that efforts to ensure checklists were reviewed were inconsistent. In July 2020, the Air Force

[56]DOD Instruction 6000.19.

[57]U.S. Army Training and Doctrine Command Pamphlet 350-70-14; Chief, Navy Bureau of Medicine and Surgery Letter 6000, *Enclosure 2*; and AFI 41-106.

shifted the responsibility of managing its wartime medical skills checklists—including efforts to ensure that checklists are reviewed annually—from the United States Air Force School of Aerospace Medicine to the Medical Readiness Branch of the Air Force Medical Readiness Agency. An Air Force official stated that this office subsequently established a process to ensure that wartime medical skills checklists are reviewed annually, and several draft versions of updated checklists have been created.

However, Air Force officials have not taken corrective action, such as by developing and implementing a plan to finalize these updates or to review the remaining outdated wartime medical skills checklists for enlisted medical personnel, some of which date to 2016. *Standards for Internal Control in the Federal Government* states that management should remediate deficiencies by, for example, completing and documenting corrective actions to remediate internal control deficiencies on a timely basis.[58] Air Force officials stated that they are focusing instead on the development of checklists for a number of high priority officer and enlisted occupations.[59] Without taking corrective action to review and update outdated wartime medical skills checklists for its enlisted medical personnel, such as by developing and implementing an update plan, the Air Force will lack reasonable assurance that these checklists will be updated in a timely manner and that key enlisted medical personnel will receive the training necessary to perform medical operations in a deployed setting.

Army Wartime Medical Skills Checklists Do Not Consistently Prescribe Sustainment Training Methods

The Navy and the Air Force have prescribed the methods by which enlisted medical personnel should be trained on wartime medical skills—such as in a classroom or through clinical experience—but the Army has not consistently prescribed how specific skills should be sustained. For example, Navy and Air Force checklists indicate enlisted medical personnel should receiving training on some skills through direct patient

[58]GAO-14-704G.

[59]An Air Force official stated that the enlisted occupations and subspecialties included in this effort are those which are difficult to train or pose higher risk if not trained correctly, including the Cardiopulmonary Lab occupation, Surgical Services occupation, Independent Duty Medical Technician subspecialty, and Critical Care Technician subspecialty.

care, while they receive training on other skills through formal courses or knowledge-based assessments. In contrast, Army checklists provide limited information on where enlisted medical personnel first receive training on tasks, such as in a school or training conducted in a soldier's duty station.

Additionally, while the Army has prescribed how wartime medical skills should be sustained in other publications outside its checklists, it has not done so consistently. For example, the Army has published a training manual, known as the *Soldier Training Publication,* for the Health Care Specialist occupation that prescribes how skills should be sustained for approximately half of the wartime medical skills found in that occupation's checklist. However, the *Soldier Training Publication* for the Respiratory Specialist occupation does not prescribe the methods by which any wartime medical skills should be sustained.[60] Similarly, Army training documents that outline procedural steps for performing individual wartime medical skills do not consistently prescribe the methods by which skills should be sustained, such as through simulation or live patient care.

DOD Directive 1322.18, *Military Training,* states that it is DOD policy that servicemembers should receive, to the maximum extent possible, timely and effective individual and collective training to enable performance to standard during operations.[61] Additionally, our *Guide for Assessing Strategic Training and Development Efforts in the Federal Government* emphasizes the need to compare the merits of different training delivery mechanisms and to determine the optimal mix of training mechanisms to employ given the specifics of the situation and the objective.[62] Furthermore, *Standards for Internal Control in the Federal Government* states that agencies should implement control activities—such as

[60]*See* U.S. Army, *Soldier Training Publication: Soldier's Manual and Trainer's Guide—MOS 68W Health Care Specialist* (May 3, 2013) and U.S. Army, *Soldier Training Publication: Soldier's Manual and Trainer's Guide—MOS 68V Respiratory Specialist* (Sept. 2019). Soldier training publications identify training requirements for individual occupations and are used by commanders, trainers, and soldiers to plan, conduct, and evaluate individual training in units. The Army also trains members of the Health Care Specialist occupation on wartime medical skills as a part of the training conducted to maintain Emergency Medical Technician certification. We excluded wartime medical skills common to all soldiers from this analysis.

[61]DOD Directive 1322.18.

[62]GAO-04-546G.

strategies to ensure effective training—in polices.[63] The Navy and Air Force's processes to develop wartime medical skills checklists require specification of the methods of sustainment training for wartime medical skills. Specifically, the Navy's checklist format includes specification of the location of training—such as an MTF—or the formal course used to train a specific skill set. Similarly, the Air Force's checklist format includes the specification of sustainment training sources.

However, the Army's guidance for defining wartime medical skills does not require that the methods of training to sustain these skills be specified in the Army's checklists.[64] Army officials stated that training methods to sustain skills are not prescribed, and that individual commanders have discretion over how personnel are to train to sustain wartime medical skills. During interviews with two Army MTFs, officials cautioned that being overly prescriptive could remove flexibilities available to commanders to accomplish training. However, an Army training document states that although certain forms of training may be used as substitutes to sustain skills, there is a hierarchy of training methods in order to maintain proficiency.[65] Additionally, Army training guidance states that training should be conducted in a manner that replicates the operational environment, while DOD officials we spoke with similarly stated that the most appropriate method of training to sustain skills is unique to each skill and a key aspect of ensuring clinical competency.[66] For example, a U.S. Army Medical Command official noted that training on clinical notetaking can be classroom-based, while proficiency on trauma-related procedures requires hands-on experience, such as through medical simulation. DOD officials also emphasized the importance of live-patient care experiences in sustaining wartime medical skills, noting that this method helps prepare enlisted medical personnel for the casualties they will encounter in a deployed environment.

[63]GAO-14-704G.

[64]Army training guidance requires that training developers define where a specific skill is first trained, as well as the frequency and level of sustainment training, but does not require specification of the method of sustainment training. U.S. Army Training and Doctrine Command Pamphlet 350-70-1.

[65]U.S. Army, Training Support Package 8-Critical Care Flight Paramedic, *Continuing Medical Education and Skill Validation for the Army Critical Care Flight Paramedic* (Oct. 25, 2019).

[66]U.S. Army Training and Doctrine Command Pamphlet 350-70-14.

Without updating its guidance to require that acceptable methods of sustainment training for wartime medical skills for enlisted medical personnel are specified, the Army's checklists will not include clearly defined training methods. Additionally, the Army may be limited in ensuring that its enlisted medical personnel are receiving the training best suited to maintain readiness.

The Military Departments Have Generally Defined the Frequency of Skills Training, but Have Not Fully Assessed the Frequency of Training Needed to Sustain Wartime Medical Skills

The Military Departments Have Generally Defined the Frequency of Skills Training Based on Various Factors

The military departments' wartime medical skills checklists generally define the frequency at which personnel should be trained on specific skills, and all three military departments have developed processes requiring checklists to specify this information.[67] These frequencies vary; for example, personnel are to be trained on some skills weekly—such as several skills in the Navy's surgical technologist checklist—while personnel receive training on other skills years apart, such as requirements for DOD-mandated training on Tactical Combat Casualty Care.[68] Furthermore, the Navy and Air Force require multiple enlisted occupations to meet a threshold of clinical hours or cases. For example, the Navy's Independent Duty Corpsmen must treat at least 360 patients a year across a range of patient types, while the Air Force's Aerospace Medical Service checklist requires these personnel to obtain a minimum of 40 hours experience working in an emergency department or intensive care unit annually.

[67]Our analysis of training frequencies in Navy checklists is limited to those checklists that have been approved by the Surgeon General of the Navy. According to Navy officials, as of January 2021, the Navy was in the process of finalizing 24 checklists and developing four additional checklists.

[68]Tactical Combat Casualty Care is the DOD standard of care for first responders (medical and nonmedical), and all servicemembers receive role-based training and certification in accordance with the skill level outlined by the Joint Trauma System Division. DOD requires servicemembers to receive training on Tactical Combat Casualty Care every 3 years, at a minimum.

To develop training frequencies of wartime medical skills, the military departments consider a number of factors, such as DOD training requirements, certification requirements, subject matter expertise, and the MHS's ability to support training. For example, checklists for multiple Navy and Air Force occupations require enlisted medical personnel to complete DOD's Tactical Combat Casualty Care course, which must be renewed every 3 years at a minimum. Similarly, the military departments base certification requirements on civilian standards, where applicable. For example, the Army requires members of the Health Care Specialist occupation to maintain the basic certification for the Emergency Medical Technician, which the governing civilian body requires to be renewed every 2 years.[69]

The military departments' processes to identify wartime medical skills and associated training frequencies require input from experienced enlisted medical servicemembers. These personnel rely on their expertise pertaining to their respective occupations to develop training frequencies. For example, Army officials stated that when determining training frequencies, personnel involved in the development of wartime medical skills checklists rely on their personal deployment experiences as well as that of other enlisted personnel within their occupation, and Navy personnel rely on their specialty experience when developing and reviewing checklist requirements. Similarly, Air Force personnel responsible for developing checklists are required to consider lessons learned from after action reports submitted by medical units returning from deployments. Finally, Air Force Instruction 41-106 directs personnel responsible for developing wartime medical skills checklists to consider skills perishability and platform training constraints when determining the frequency by which wartime medical skills are to be trained.[70]

[69]Members of the Army's Health Care Specialist occupation train multiple checklist skills annually as a part of continuing education in order to maintain their Emergency Medical Technician certification. The core skills of the Health Care Specialist occupation largely overlap with the competencies of the Emergency Medical Technician, though these personnel are more uniquely skilled than an Emergency Medical Technician.

[70]AFI 41-106.

The Military Departments Have Not Assessed Whether the Frequencies of Wartime Medical Skills Training Are Sufficient to Maintain Skills

Although the military departments' processes to set training frequencies incorporate a number of relevant factors, as previously discussed, military department officials stated that they have not assessed whether current training frequencies are sufficient to sustain wartime medical skills. DOD Directive 1322.18 *Military Training,* states that it is DOD policy that servicemembers will receive, to the maximum extent possible, timely and effective individual and collective training to enable performance to standard during operations.[71] More specifically, Air Force Instruction 41-106 directs Air Force personnel to consider the perishability of required skills when determining task training frequency requirements, while Army training guidance states that training should function to sustain skills[72] and that mission-essential skills and knowledge learned during initial training will decay quickly with disuse, resulting in the potential for loss of competency and effectiveness that places the lives of casualties at risk.[73] Similarly, our *Guide for Assessing Strategic Training and Development Efforts in the Federal Government* states that agencies need to consider essential issues such as the timing for delivering the training when considering the options of mechanisms for delivering training.[74]

While acknowledging the importance of addressing skills perishability in maintaining enlisted medical personnel readiness, the military departments have not fully assessed whether current training frequencies are appropriate to sustain enlisted personnel's wartime medical skills. DOD officials explained that performing such an assessment is difficult because of a lack of data on enlisted medical personnel's activities in the MHS that would allow the military departments to measure the degradation of skills, and that such information is generally not well developed for non-physician occupations, even in the civilian sector. An Army official added that a potential remedy would likely not exist for several years due to challenges in developing a methodology for

[71]DOD Directive 1322.18.

[72]U.S. Army Training and Doctrine Command Pamphlet 350-70-1.

[73]U.S. Army, Training Support Package 8-Critical Care Flight Paramedic.

[74]GAO-04-546G.

collecting information on the activities of enlisted medical personnel working alongside physicians within the MHS.

In December 2018, the Office of the Joint Staff Surgeon identified challenges to the sustainment of highly perishable, mission-essential medical skills of deployed personnel—including enlisted personnel—involved in patient treatment.[75] Specifically, it found that the Joint Force had not identified highly perishable and mission-essential medical skills of deployed medical personnel involved in patient treatment. As a result, the Office of the Joint Staff Surgeon recommended that DOD identify those wartime medical skills that are highly perishable and mission-essential in a deployed environment. To accomplish this, the Office of the Joint Staff Surgeon specified that the DHA, the Office of Joint Staff Surgeon, and the military departments should identify highly perishable and mission-essential medical skills for deployable medical personnel by May 2021, noting that the military departments should prioritize sustainment of these skills in garrison and while deployed. Furthermore, the Office of the Joint Staff Surgeon found that the Joint Force lacks the ability to determine the rate at which highly perishable, mission-essential medical skills degrade during deployment. As a result, it recommended that the DHA, the Office of Joint Staff Surgeon, and the military departments develop models and processes to determine rates and patterns of degradation of highly perishable, mission essential medical skills in deployed environments by May 2022.[76]

Military department officials recognized the potential utility of the project's findings and incorporating them into their processes to identify appropriate training frequencies of wartime medical skills, and stated that they are open to doing so. By incorporating the findings on skills

[75]Office of the Joint Staff Surgeon, *Joint DOTmLPF-P Change Recommendation (DCR) for the Medical Readiness and Skills Sustainment During Deployed Operations (MRSS-DDO)* (Dec. 3, 2018). The document is primarily focused on the sustainment of medical skills during deployed operations, though DOD officials explained that this has implications for sustainment training completed by enlisted medical personnel while not deployed. Highly perishable medical skills are those medical and surgical skills which, when not performed regularly, degrade and subsequently impact the ability of medical personnel to save life, limb, and eyesight and preserve fighting strength. Mission-essential medical skills are those specific medical and surgical skills which are required for deployed medical personnel involved in patient treatment.

[76]As of January 2021, a DHA official stated that the Uniformed Services University has developed knowledge and skills assessments for two physician occupations that will be used to determine rates of skills degradation, and added that it is in the process of developing a skills assessment for the Operating Room Services common military occupation.

degradation from DOD's project, once complete, into their processes the military departments will be better positioned to identify appropriate training frequencies of wartime medical skills within checklists and provide the training necessary to sustain the readiness of enlisted medical personnel for expeditionary operations. Furthermore, the military departments will have greater assurance that data on wartime medical skills training accurately reflect the true state of readiness of enlisted medical personnel.

The Military Departments Do Not Comprehensively Track and Assess Enlisted Personnel Wartime Medical Skills Training

The military departments have developed—or are developing—data management tools for tracking enlisted medical personnel's wartime medical skills completion, but the Army does not consistently track skills training in its data management tool and none of the departments fully assess training completion. Specifically, an Army official stated that—as of January 2021—the Army's Digital Training Management System served as the Army's repository for recording the completion of training on wartime medical skills. The Navy had piloted a "dashboard" that will allow officials to monitor enlisted medical personnel's completion of training on wartime medical skills aggregated from multiple systems.[77] The Air Force had implemented multiple "dashboards" that enable the monitoring of training completion on wartime medical skills by individual medical personnel, unit types, and individual enlisted medical occupations.[78]

However, the Army does not consistently record training on wartime medical skills. Specifically, U.S. Army Medical Command officials explained that unit commanders do not consistently record wartime medical skills training in the Digital Training Management System. In addition, officials from U.S. Army Forces Command stated that units do not use the system to track completion of wartime medical skills training because their personnel are not currently required to complete training on

[77]The Navy is in the process of establishing connections between its dashboard and sources of training data for approved wartime medical skills checklists, and officials stated that they will complete this effort for additional occupations as their checklists are finalized.

[78]The Air Force records training data in the Medical Readiness Decision Support System, which is the official system of record for the management of expeditionary medical personnel and readiness resources for the Air Force Medical Service.

these skills. Officials at two of the three inpatient Army MTFs we interviewed also used alternative methods to record training due to challenges in using the Digital Training Management System.

According to Army officials, the Army does not consistently track wartime medical skills training for enlisted medical personnel because there is no requirement to do so. Specifically, the Army issued an order in September 2018 stating that commanders will maintain a record of training completion at their discretion.[79] A senior Army Medical Command official stated that the Army is in the process of developing policy that would enable officials to require tracking of wartime medical skills training for enlisted personnel, but was uncertain as to when new policy would be issued.

In addition, we found that the military departments are not able to fully assess enlisted medical personnel's wartime medical skills because, according to officials, they have not developed performance goals and targets for training completion for enlisted medical occupations. We also found differences in department intentions to do so. Specifically, a senior Army Medical Command official stated that such targets are unnecessary because training on wartime medical skills is only one component of a commander's assessment of readiness. Navy officials stated their intention to develop such targets in the future, and the Navy's pilot dashboard has the functionality to present training data for enlisted medical occupations against targets. Finally, Air Force officials expressed concerns that setting targets could result in a focus on quantity of training requirements at the expense of quality sustainment training. Additionally, an Air Force official stated that the Air Force is considering options for weighting checklist requirements based on the criticality of each skill before developing targets for occupations.

DOD Instruction 1322.24, *Medical Readiness Training* directs DOD to use military service-designated training tracking systems to measure medical readiness training across the total force and states that medical readiness training metrics identified by the Secretaries of the military departments

[79]Unit commanders are required to use the Digital Training Management System to record: individual and crew-served weapons qualifications and scores, Army Physical Fitness Test scores, height and weight results, and annual Sexual Harassment Assault/Response and Prevention trainings. Department of the Army, Fragmentary Order 1 to HQDA EXORD 081-17, *Digital Training Management System (DTMS) Functionality* (Sept. 2018).

and Combatant Commanders are to be reported into military department-designated authoritative data sources as required.[80] Additionally, *Standards for Internal Control in the Federal Government* requires that management establish and operate monitoring activities to monitor the internal control system and evaluate and document the results, and that management should define objectives in specific and measurable terms so that performance toward achieving those objectives can be assessed.[81] Our prior work has shown that a fundamental element in an organization's efforts to manage for results is its ability to set performance goals with specific targets and to measure progress toward them as a part of its strategic-planning efforts.[82]

Without requiring consistent tracking of training on wartime medical skills for enlisted personnel, the Army will lack information on the preparedness of its enlisted medical personnel. Additionally, without establishing performance goals and associated targets for training on wartime medical skills for enlisted medical occupations, and tracking performance towards achieving these goals and targets, the military departments will lack a full understanding of enlisted occupations' preparedness and the sufficiency of their respective training programs.

DOD Has Not Fully Developed Plans and Processes to Sustain Enlisted Personnel Wartime Medical Skills or Addressed Related Challenges

DOD has established principles to sustain wartime medical skills through a mixture of work within MTFs, training partnerships with civilian hospitals, and medical simulation. However, we found that DHA's plans to assess how each of these training approaches contributes to the sustainment of enlisted personnel wartime medical skills will not capture necessary information. In addition, while the Air Force is able to identify and address gaps in wartime medical skills training sustainment, the Army and Navy cannot. Further, DOD officials, medical staff at various military department commands, and senior staff and enlisted leaders at

[80]DOD Instruction 1322.24.

[81]GAO-14-704G.

[82]GAO-16-393.

various MTFs we interviewed identified a number of implementation challenges, which present risks to the sustainment of wartime medical skills. However, DHA and the military departments have not fully analyzed and responded to such risks.

DOD Has Established Principles for Sustaining Wartime Medical Skills

DOD has established principles to guide the sustainment of wartime medical skills among enlisted medical personnel. Specifically, DOD Instruction 6000.19 directs the military departments to develop and maintain readiness for medical personnel primarily through their assignment to military MTFs.[83] It further states that these assignments should be based in part on an MTF's ability to provide experiences which generate operational medical readiness, and that if MTF workload is insufficient to meet these requirements, the military departments must identify alternative training and clinical practice sites. In practice, this means that, where necessary, MTFs should establish training partnerships with civilian hospitals to provide clinical experiences which support wartime medical skills. In addition, the military departments have identified medical simulation as playing a role in sustaining wartime medical skills, and each has established a medical simulation program to supplement its MTFs by providing health care providers opportunities to practice their medical skills using realistic medical manikins, software, and other approaches.[84]

Various officials stressed the importance and unique contributions that each of these training approaches provides to sustaining wartime medical skills. For example, several MTF officials stated that daily workload can provide consistent practice and exposure to clinical procedures and practices over time, and various officials cited the role of civilian partnerships in providing experiences in trauma care—which is relatively uncommon within MTF settings. Similarly, officials stated that medical simulation can provide training on scenarios directly tied to the expeditionary environment, such as trauma injuries, vehicle rollovers, and mass casualty events.

[83]DOD Instruction 6000.19.

[84]Operation Order 20-30; Chief, Navy Bureau of Medicine and Surgery Letter 6000; and AFI 41-106.

DHA's Plans to Assess How Different Training Approaches Contribute to the Sustainment of Enlisted Personnel Wartime Medical Skills Will Not Capture Necessary Information

As previously discussed, the military departments sustain enlisted medical wartime skills principally through a mix of three distinct training approaches: MTF workload, training partnerships with civilian hospitals, and medical simulation. The DHA has initiated planning efforts to assess how each approach sustains readiness across the force, such as through developing metrics or other evaluative information. However, as designed, these efforts will not fully capture information necessary to assess the extent to which MTF workload, civilian partnerships, and medical simulation support wartime medical skills for enlisted medical personnel.

MTF workload. DOD Instruction 6000.19 states that personnel should be assigned to MTFs in accordance with the ability of an MTF to generate operational medical readiness, and consequently requires the DHA to develop metrics to assess the contributions to maintaining wartime medical skills provided by MTFs. Such information is key to making strategic decisions concerning the optimal placement of enlisted medical personnel and the need for supplemental methods of sustaining readiness, such as civilian partnerships or medical simulation.

In October 2020, DHA initiated work on a metric to assess the ability of individual MTFs to support the clinical readiness of military medical personnel.[85] Specifically, this metric would allow the MHS to assess the workload carried out within an MTF and determine the number of medical personnel whose wartime medical skills can be sustained by that workload. However, the metric would utilize hospital workload data that is generally limited to physicians and nurses, and its inclusion of data covering most enlisted medical personnel depends on the development of future health information technology solutions capable of recording the care that enlisted medical personnel provide to patients. Specifically, a senior DHA official stated that current health information technology systems both within DOD and civilian partner hospitals record the work of

[85]Although the military departments are not responsible for developing metrics to assess the contributions of MTFs to maintaining wartime medical skills under DOD Instruction 6000.19, Army Medical Command initiated a project with this intention in 2020. Specifically, the Army's project seeks to assess the readiness generated by medical workload at individual MTFs in order to support training on checklist skills.

physicians and some nurses, but only a limited number of medical occupations staffed by enlisted personnel, such as Radiology or Laboratory Technicians. As a result, the MTF metric would only account for a limited number of enlisted medical specialties.

In addition, a senior DHA official stated that should future information technology solutions prove possible, the metric would use data from the joint skills checklists. As previously discussed, these only apply to a select number of enlisted medical occupations which, according to officials, are common to at least two military departments. Further, the skills in joint checklists represent a common baseline, and therefore do not address military department-specific skills found in each respective department's checklists. As a result, the metric under development will not account for all enlisted medical occupations and may not reflect the status of training on military department-specific expeditionary medical skills.

Civilian partnerships. DOD Instruction 6000.19 permits the military departments to establish military-civilian training partnerships to provide medical personnel with clinical workload when MTF workload is insufficient to meet training requirements. It further directs the DHA to (1) maintain an inventory of partnerships, (2) identify opportunities to streamline or add partnerships as needed, and (3) in conjunction with the military departments, establish performance metrics to assess the effectiveness of partnerships. However, as of February 2021, the DHA had not fully developed an inventory of partnerships, identified opportunities for developing more partnerships or streamlining them, as appropriate; or, in conjunction with the military departments, developed a common, comprehensive set of metrics to assess the contribution of civilian partnership to sustaining enlisted personnel wartime medical skills.

Partnership initiatives have developed at the local level between individual MTFs and civilian hospitals, wherein military medical personnel assigned to MTFs work and train in civilian hospitals in order to maintain currency in clinical knowledge, skills, and abilities. Officials we interviewed at five MTFs with such partnerships in place stated that these experiences can provide greater volume and diversity of clinical experiences than can be found within a typical MTF. As such, they can play a critical role in sustaining the wartime medical skills of participants, particularly those skills related to trauma care.

Air Force Civilian Partnership with University of California at Davis Medical Center

According to a senior official with the University of California at Davis Medical Center, the hospital's partnership with the Air Force's David Grant Medical Center currently provides training opportunities to enlisted airmen serving within the Cardiopulmonary Laboratory, Aerospace Medical Service, and Surgical Services occupations. They further noted that enlisted medical personnel in these occupations gain valuable clinical experiences through a range of hospital departments and patient types, including trauma exposure in the hospital's emergency department, wound care in the hospital's burn unit, and critical care in the hospital's cardiothoracic intensive care unit.

Source: UC Davis Health (photo)© UC Regents | GAO 21 337

According to DHA officials, in mid-2020 the Combat Support Directorate's Joint Trauma System Division initiated efforts to develop an inventory of civilian partnerships across the MHS, to include partnerships with enlisted participants. However, officials with the Joint Trauma System Division stated that the scope of the inventory had not yet been defined, and that it could be limited to trauma partnerships. While trauma partnerships are critical to DOD's goal of increasing its trauma readiness, DHA officials noted that they do not represent the full breadth of practice for enlisted medical personnel, and would therefore not provide full information on the experiences of enlisted personnel in civilian partnerships.[86] Additionally, partnerships for specialties other than trauma play a role in supporting enlisted personnel wartime medical skills. For example, two of the inpatient MTFs we interviewed had partnerships with civilian hospitals in place for Cardiopulmonary Laboratory Specialists. Officials with each of the three military departments stated that while they have visibility into some existing partnerships, they do not maintain a full inventory of partnerships or detailed information on them. Military department officials stated that such partnerships have historically developed as a result of local initiatives of individual MTFs or commands, and as such an inventory was not developed.

In addition, in the absence of a full inventory of partnerships, DHA also has not yet fully developed a process to streamline or add partnerships or assess their effectiveness in supporting readiness through standardized metrics. In November 2020, DHA chartered the Military-Civilian Partnership Working Group, which has been charged with developing standardized partnership entry criteria, standardized agreements, and metrics to assess partnership effectiveness. However, the working group has not been tasked with developing a process to streamline or add civilian partnerships. In addition, DHA plans to assess civilian partnerships using the aforementioned metric for assessing the ability of individual MTFs to support the clinical readiness of military medical personnel. Specifically, this metric would incorporate workload performed by military personnel within a civilian partner hospital to determine the skills supported by that workload. However, should this metric prove feasible, it would face the same challenges as the MTF metric. Specifically, as discussed, a senior DHA official stated that current health information technology systems both within DOD and in the civilian sector generally record the work of physicians and some nurses, but only a limited number of enlisted medical occupations, such as Radiology or

[86]DOD, *Final Report on Joint Trauma System* (Aug. 2, 2017).

Laboratory Technicians. As a result, the metric envisioned for assessing partnerships would account for a small number of enlisted medical specialties.

Medical simulation. As previously discussed, medical simulation forms an important part of each military department's approach to sustaining enlisted personnel wartime medical skills by providing personnel with opportunities to train on procedures that they may not be exposed to in MTFs or civilian partnership settings, such as trauma care. For example, the Army relies in part on its Medical Simulation Training Center network of 21 sites to provide training opportunities for Health Care Specialists to maintain their required Emergency Medical Technician certification.

However, DHA has not collected evaluative data to make informed decisions concerning its contribution and role in this process. In November 2020, DHA developed a draft plan to, among other things, conduct a current state analysis of available simulation programs, demand for them, and gaps in clinical training and simulation requirements. Such an analysis, as drafted, represents a positive step towards developing evaluative information concerning medical simulation and an understanding of its potential role in skills sustainment alongside MTF workload and civilian partnerships. However, the plan has yet to be approved by leadership and is therefore subject to change.

Officials at several MTFs we interviewed expressed concern regarding the capacity and sufficiency of their medical simulation programs to meet training needs, thus highlighting the need to assess program capacity. For example, officials at one inpatient Air Force MTF stated that they lack sufficient medical simulation facilities to sustain wartime medical skills of their enlisted medical personnel, and have developed a limited simulation laboratory using spare resources. In addition, officials responsible for management of the Army's Medical Simulation Training Center program stated that demand for their facilities is beyond current capacity, and that their role has expanded to include training beyond the program's design, such as for flight paramedics.

Recognizing this, the Army and the Navy have initiated efforts separate from DHA to assess the contribution of medical simulation to sustaining enlisted personnel wartime medical skills. In June 2020, the Army Medical Command issued an order to identify current gaps in simulation capability and capacity for accomplishing medical readiness training. Similarly, in December 2019, the Navy Bureau of Medicine and Surgery directed various Navy officials to coordinate and integrate readiness criteria

requirements that may be met by medical simulation; however, as previously noted, the Navy has not yet completed development of its wartime medical skills checklists, and officials stated this project is in development. Such efforts could inform DHA's draft plan and contribute to the overall assessment of medical simulation capacity and capabilities.

Our *Guide for Assessing Strategic Training and Development Efforts in the Federal Government* states that given the large variety of ways to provide training, such as classroom, e-learning, and on-the-job training, agencies need evaluative data to make reasoned decisions about the optimal mix of mechanisms to employ given the specifics of the situation and the objective.[87] Separately, *Standards for Internal Control in the Federal Government* states that agencies should use quality information to achieve the entity's objectives, including by designing a process that uses the entity's objectives to identify the information requirements needed to achieve those objectives.

While the DHA has initiated efforts to assess how different training approaches contribute to the sustainment of wartime medical skills, its plans, as currently designed, will not capture information necessary to achieve that objective as it pertains to enlisted medical personnel. As a result, DHA will lack critical information needed to inform staffing, training, and investment decisions. Specifically, without including information on enlisted medical personnel in developing metrics to assess the contributions of MTFs and civilian partnerships, DHA will not have information needed to determine the proper mix of MTF and civilian partnership assignments. Similarly, until the DHA's inventory of civilian partnerships reflects all such programs in which enlisted medical personnel participate and DHA specifies a process to streamline or add civilian partnerships, its understanding of the contributions of these programs and efforts to streamline and expand them will be limited. Finally, absent evaluative information on the role of medical simulation in sustaining readiness, the DHA cannot make a comprehensive assessment of how each training approach supports readiness and will therefore be unable to determine current and future training investments.

[87]GAO-04-546G.

The Air Force Is Able to Identify and Address Gaps in Wartime Medical Skills Training Sustainment, but the Army and Navy Cannot

The Air Force is able to identify and address gaps in training for enlisted personnel to sustain wartime medical skills, but the Army and Navy are unable to do so consistently and comprehensively. DOD Instruction 6000.19 directs the Secretaries of the military departments to implement a clinical readiness assessment process for wartime medical skills maintenance. “Clinical readiness” is clinical practice that is relevant to a provider or provider team’s ability to perform their assigned deployed role; it can be achieved in an MTF or through clinical experience gained through partnerships.

The Air Force is able to identify and address gaps in training for enlisted personnel through its established, department-wide process, which includes recording of wartime medical skills training in its tracking system by the designated readiness office, quarterly reviews of the assessment by senior leaders, identification of training gaps, and development of plans to address those gaps.[88] This process applies to enlisted medical personnel assigned to both MTF and non-MTF units, all of whom must generally meet the same clinical readiness standards. Officials from each of the three Air Force inpatient MTFs and two MTF clinics we interviewed described their experience with this process and provided examples covering each aspect of its implementation. For example, officials from each MTF cited the role of the Medical Readiness Office and local training managers in identifying gaps in wartime medical skills training and addressing them, such as through civilian partnerships.

In June 2020, U.S. Army Medical Command issued an order stating its intention to enable a ready medical force, including by identifying and addressing training gaps.[89] However, the Army is unable to identify and address enlisted personnel training gaps because it has not yet developed a standard, department-wide process to identify and address training gaps for enlisted personnel’s wartime medical skills within MTFs and non-MTF units. Currently, practices within MTFs and non-MTFs differ. For example, as previously discussed, officials with Army Forces Command stated that tracking of training within non-MTF units is at the

[88]AFI 41-106.

[89]Operation Order 20-30.

discretion of individual commanders, and that reliable information on checklist completion and any gaps in training is therefore not available.

Additionally, although officials cited new initiatives to assess training gaps for select occupations, such efforts are limited in scope and therefore do not constitute a consistent or comprehensive process to assess training gaps across the enlisted medical community. For example, officials highlighted an Army Forces Command initiative to provide more opportunities for training on wartime medical skills for 10 occupations designated as "critical wartime specialties," including two enlisted occupations. However, this initiative does not address all enlisted medical occupations. In addition, training on many wartime medical skills is indirectly tracked through existing requirements for civilian licenses or certifications, such as the requirement for Healthcare Specialists to maintain Emergency Medical Technician certification. However, such programs may not address military-unique expeditionary medical skills, such as the operation of a walking blood bank.

Officials at the five Army MTFs we interviewed also described differing processes for identifying and addressing gaps in training for wartime medical skills. Specifically:

- Leadership at one Army inpatient MTF stated that they review Joint Commission-mandated Competency Assessment Files of individual clinical competence,[90] and informally compare them to wartime medical skills checklists to identify gaps in training. Officials acknowledged that while there is overlap between the skills recorded in these files and wartime medical skills, there are some differences, and stated that the MTF is planning to establish regular meetings to formally assess these gaps and develop plans to address them.
- Leadership at one Army inpatient MTF had identified training gaps by producing an inventory of skills by occupation that cannot be accomplished within the MTF, but stated that they do not have a specific forum, such as regularly scheduled meetings, to discuss the status of checklist completion across the facility.
- Leadership at one Army inpatient MTF stated that they track checklist completion across all enlisted medical occupations and conduct

[90]A Competency Assessment File is used as a repository for information related to individual competence for all non-privileged healthcare personnel with patient contact, and assists in tracking completed training specific to an individual's duty positions.

regular meetings to discuss the status of checklist completion and identify and address any associated training gaps.

- Officials at the two Army MTF clinics stated that they have designated checklist managers who track training completion to identify training gaps and develop approaches to respond to them. For example, officials at one MTF clinic stated that they identify gaps in training that cannot be addressed within the clinic, such as wound care, while officials at the second MTF clinic stated that they plan to procure simulation tools for those tasks which cannot be trained within the clinic.

The Navy is also unable to identify and address enlisted personnel training gaps because it has not established a standard, department-wide process to identify and address training gaps for wartime medical skills. The Navy Bureau of Medicine and Surgery directed the implementation of its checklist program in December 2019.[91] However, this letter did not specify how skill training gaps were to be assessed. A senior Navy official confirmed that the Navy has not taken action to develop an assessment process, but stated that it is working towards this goal. We also found that none of the three inpatient MTFs we interviewed had implemented the Navy's enlisted medical skills training checklist program, and therefore did not have a process to identify and address training gaps related to checklist completion. Officials at these MTFs stated that they rely on existing processes, such as tracking of required training, review of the aforementioned Competency Assessment Files, and completion of the Navy's Personnel Qualification Standards for Hospital Corpsmen to ensure the clinical proficiency of enlisted medical personnel.[92] Similarly, officials at both of the MTF clinics we contacted stated that they rely on programs such as the Navy's Personnel Qualification Standards, and training courses, such as Tactical Combat Casualty Care, to ensure readiness.[93]

[91]Chief, Navy Bureau of Medicine and Surgery Letter 6000.

[92]The Navy's Personnel Qualification Standards delineate the minimum knowledge, skills, and abilities individuals must demonstrate before performing specific duties and establishes a learning continuum that focuses on developing a higher level of medical proficiency within the Hospital Corps.

[93]Tactical Combat Casualty Care is the DOD standard of care for first responders (medical and nonmedical), and all servicemembers receive role-based training and certification in accordance with the skill level outlined by the Joint Trauma System. DOD requires servicemembers to receive training on Tactical Combat Casualty Care every 3 years, at a minimum.

A senior official with Army Medical Command stated that existing Army training processes were sufficient for the purposes of identifying and addressing training gaps, and that a standard, department-wide process was not necessary. However, as described, current practices across MTFs and non-MTF units vary, creating the possibility for different evaluations and results. Separately, a senior Navy official stated that their process for developing enlisted personnel wartime medical skills checklists is not yet complete, and that they have therefore not taken or planned steps to develop a process to identify and remedy associated gaps. This official also cited delays in checklist implementation due to COVID-19. Without developing a clinical readiness assessment process, the Army and the Navy will be unable to identify and address wartime medical skills training gaps that could negatively affect the clinical readiness of enlisted medical personnel. Moreover, they will have limited understanding of the extent to which current and future training requirements are achievable.

Challenges in the Implementation of Training Approaches Present Risks to the Sustainment of Wartime Medical Skills

DOD's training approaches to sustain wartime medical skills for enlisted medical personnel face risks due to several implementation challenges, including (1) staffing at MTFs, (2) managing MTF rotations for non-MTF personnel, (3) barriers to civilian partnerships, and (4) opportunities to train on expeditionary medical equipment.

Staffing at MTFs. Officials at several inpatient MTFs stated that MTF staffing is a barrier to sustaining enlisted personnel wartime medical skills. For example, officials at one Army and one Air Force hospital with civilian partnerships stated that they are sometimes unable to temporarily release personnel for needed rotations at civilian partner hospitals because doing so would exacerbate existing staffing shortages within the MTF. Further, officials we interviewed at three inpatient Navy MTFs stated that they must frequently assign Hospital Corpsmen to vacant administrative positions normally filled by civilian personnel, potentially reducing assigned Hospital Corpsmens' ability to sustain medical skills. Similarly, officials with the U.S. Pacific Fleet stated in their experience, Hospital Corpsmen are frequently assigned to administrative roles within MTFs, and advanced training opportunities are ineffective at sustaining skill if Hospital Corpsmen return to these roles. Navy officials stated that assignment of Hospital Corpsmen to administrative positions is

sometimes unavoidable, and that steps are taken to limit such duties when possible.

In 2018, we reported that MTFs face challenges in ensuring adequate staffing levels for federal civilians and contractors, which can affect training opportunities and experiences afforded to enlisted medical personnel, as described above.[94] Specifically, we highlighted the length of the federal civilian hiring and contracting processes, uncompetitive federal civilian salaries and contractor compensation, and federal civilian staffing targets and hiring freezes. DOD concurred with our resulting recommendation that the DHA develop a strategic total workforce plan, but as of February 2021, it has not yet acted on this recommendation.

Managing MTF rotations for non-MTF personnel. Army and Navy command and MTF officials cited challenges in managing MTF rotations for enlisted medical personnel assigned to non-MTF units. Specifically, Army Forces Command officials stated that the quality and relevance of such rotations depends upon the characteristics of individual MTFs, such as their patient throughput and the frequency of trauma cases. An official with the command also acknowledged that there is no overarching policy requiring rotations, which are made at the initiative of individual commands and units, and that other priorities often take precedence over rotation of enlisted medical personnel to MTFs, including unit-level training requirements and nonmedical missions, such as gate security.

Similarly, officials at U.S. Pacific Fleet stated that although there are MTF rotation programs in place, these require agreement between individual commands and MTFs and must be balanced against the mission needs of the non-MTF command. Additionally, officials at one Navy and two Army inpatient MTFs we interviewed cited challenges specific to managing MTF rotations for enlisted medical personnel assigned to non-MTF units. For example, officials stated that enlisted medical personnel assigned to non-MTF units must be released by their unit to participate in rotations to maintain their wartime medical skills, and that even when agreements to facilitate such rotations are in place, non-MTF units may not fully participate due to competing needs of their command.

Barriers to civilian partnerships. ASD(HA), DHA, military department officials, and officials at several inpatient MTFs cited challenges

[94]GAO, *Defense Health Care: Additional Assessments Needed to Better Ensure an Efficient Total Workforce*, GAO-19-102 (Washington, D.C.: Nov. 27, 2018).

associated with establishing and operationalizing civilian partnerships, particularly with regard to issues such as liability, compliance with state licensing, and certification requirements for enlisted medical personnel working within partner facilities. For example, officials at one inpatient Army MTF noted that Operating Room Specialists require a civilian certification to work within their civilian partner hospital that is not required by the Army. Similarly, officials at one inpatient Navy MTF noted that civilian hospitals do not have a staff equivalent of a General Hospital Corpsman and are therefore reluctant to allow such personnel to work in their facilities. More broadly, various officials in offices such as the ASD(HA), the military departments, and MTF leaders stated that it is especially challenging to find partnership opportunities for occupations that do not have a civilian equivalent or do not require a civilian license or certification, such as Army Health Care Specialists and Navy General Hospital Corpsmen. These positions, which provide first responder care on the battlefield, represented approximately 53 percent of the Army's enlisted medical corps and about 39 percent of the Navy's enlisted medical corps in fiscal year 2019, and thus illustrate challenges with providing critical segments of the enlisted medical community with beneficial training opportunities.

Officials we interviewed at three civilian partner hospitals expressed support for such agreements, but noted that they require extensive commitment and planning from both parties to be successful. The DHA has stated that the current state of such agreements is inefficient, in part because establishing agreements is often dependent upon individual relationships and personalities. DHA's working group on military-civilian partnerships has highlighted identifying and addressing barriers to civilian partnerships as a priority action moving forward.

Opportunities to train on expeditionary medical equipment. MTF command officials that we interviewed stated that personnel do not consistently have opportunities to train on expeditionary medical equipment. DOD Instruction 1322.24 states that the Secretaries of the military departments will fully fund and provide support for trauma training and skills sustainment platforms, to include equipment.[95] However, MTF officials told us that training equipment can significantly differ from equipment used in a traditional hospital. For example, officials at one Army inpatient MTF stated that multiple occupations, including Operating Room Specialists, do not have access to expeditionary medical

[95]DOD Instruction 1322.24.

equipment for training. Similarly, officials at one Navy MTF stated that Dental Technicians do not receive sufficient experience on expeditionary dental equipment, while an official at an Air Force inpatient MTF stated that Healthcare Administration personnel do not receive sufficient experience using information technology equipment used in an expeditionary setting. As a result, personnel in these occupations may not receive sufficient training to perform their duties in an expeditionary setting.

Standards for Internal Control in the Federal Government states that management should analyze and respond to risks related to achieving defined objectives to reduce their impact,[96] and we have previously reported that the process of analyzing and responding to risks to achieving defined objectives is key to meeting national security missions.[97] ASD(HA) and military department officials stated that the aforementioned challenges represent significant risks to their objective of sustaining enlisted personnel wartime medical skills through the principles outlined above, and emphasized that the implementation of the wartime medical skills checklists will require addressing such challenges. Additionally, DHA and the military departments have taken steps to address some of these issues, including chartering a working group to, among other things, standardize partnership agreements.

However, DHA and the military departments have not fully analyzed such risks to determine how they affect their ability to sustain enlisted medical personnel's wartime medical skills or responded to such risks to mitigate their impact—and cognizant officials stated that there are no current plans to do so. Until DOD fully analyzes and responds, as appropriate, to risks associated with implementing its training approaches for sustaining enlisted personnel's wartime medical skills, DOD may be limited in its ability to achieve clinical readiness for enlisted medical personnel.

The Military Departments Generally Met Recruitment Goals for Enlisted Medical

[96]GAO-14-704G.

[97] For example, see GAO, *DOD Financial Management: Continued Efforts Needed to Correct Material Weaknesses Identified in Financial Statement Audits*, GAO-21-157 (Washington, D.C.: Oct. 13, 2020); and *Critical Infrastructure Protection: Actions Needed to Address Significant Cybersecurity Risks Facing the Electric Grid*, GAO-19-332 (Washington, D.C.: Aug. 26, 2019).

Personnel, but Lack Retention Goals and Do Not Consider Some Information in Offering Retention Bonuses

The Military Departments Generally Met Recruitment Goals for Fiscal Years 2015 through 2019 and Spent Nearly $126 Million on Bonuses to Incentivize Recruitment

The military departments generally met established recruitment goals for fiscal years 2015 through 2019, and recruiting shortfalls in individual occupations were generally small. Specifically, the Army met 90 percent or more of its recruitment goals for at least two-thirds of all occupations in each year during fiscal years 2015 through 2019; the Navy met 100 percent of its recruitment goals for fiscal years 2016 through 2019, with a small shortfall in fiscal year 2016; and the Air Force met 90 percent or more of its recruitment goals for at least 15 of 18 occupations each year during fiscal years 2015 through 2019.[98] During this time period, the military departments spent over $126 million on bonuses to achieve their recruiting goals, with the Army responsible for about 96 percent of total spending.

Army. The Army set recruitment targets for 22 occupations in fiscal year 2015 and 21 occupations in fiscal years 2016 through 2019, with goals ranging from one Cardiovascular Specialist in fiscal year 2019—an occupation the Army is phasing out—to 3,357 Health Care Specialists in fiscal year 2019. The Army infrequently achieved less than 90 percent of its recruitment targets, ranging from one occupation in fiscal year 2017 to six occupations in fiscal year 2018. For this same group of occupations, the lowest recruitment rate during this period was for Cardiovascular Specialists in fiscal year 2016, for which the Army recruited 5 of 21 goal recruits, about 24 percent of its target.

The Army awarded enlistment bonuses to 10,596 individuals across 21 occupations at a cost of over $121 million during fiscal years 2015 through 2019. The Army targeted its bonuses to occupations with recruitment shortfalls. For example, it offered recruitment bonuses to Medical Laboratory Specialists from fiscal years 2016 through 2019,

[98] The Navy was not able to provide data for fiscal year 2015.

during which time the Army met between 75 and 87 percent of its recruiting goals for this occupation. Shortfalls for this occupation ranged between 31 recruits against a goal of 246 in fiscal year 2017 and 91 recruits against a goal of 361 in fiscal year 2018.

Navy. During fiscal years 2016 through 2019, the Navy met 100 percent of its recruitment goals for all four of the occupations for which it recruited, with the exception of a shortfall of two Hospital Corpsman recruits in fiscal year 2016 against its goal of 2,352.[99] During fiscal years 2016 through 2019, the Navy offered a bonus to Hospital Corpsmen in a small number of advanced technical fields, awarding an estimated 188 bonuses at a cost of over $4 million.[100]

Air Force. During fiscal years 2015 through 2019, the Air Force generally met its recruitment goals. Specifically, there were no recruiting shortfalls in fiscal years 2015 and 2016, two of 18 occupations achieved less than 90 percent of their goals in fiscal years 2017 and 2018, and one of 18 occupations achieved less than 90 percent of its goal in fiscal year 2019. These shortfalls were generally small in absolute terms. For example, the Histopathology occupation saw a shortfall of one recruit against a goal of two in both fiscal years 2017 and 2018. The Air Force's goals ranged from the aforementioned two Histopathology recruits to 391 Aerospace Medical Service recruits. The Air Force offered recruitment bonuses to a single occupation during this period. Specifically, the Air Force offered the Cardiopulmonary Laboratory occupation a recruitment bonus in fiscal years 2015 and 2016, awarding 53 bonuses at a cost of $424,000. An Air Force recruiting official stated that the department typically has a waiting list of potential recruits for enlisted medical occupations and that it generally meets recruiting goals for these occupations without having to offer bonuses.

Appendix III provides detailed information on recruitment goals and actual staffing levels for individual enlisted medical occupations during fiscal years 2015 through 2019. Appendix IV provides detailed information on

[99]The Navy was not able to provide data for fiscal year 2015. The Navy primarily recruits for General Hospital Corpsmen, but also directly recruits for a small number of other occupations.

[100]According to a Navy recruitment official, the Navy pays enlistment bonuses for the Hospital Corpsman Advanced Technical Field group of occupations at the end of a multi-stage training process. As a result, these figures are an estimate of the number of recipients and actual amount to be paid.

recruitment bonus spending and the number of bonuses accepted by enlisted medical occupation during fiscal years 2015 through 2019.

The Military Departments Generally Consider All Required Information When Offering Recruitment Bonuses

The military departments generally consider all factors set forth in DOD Instruction 1304.31 when determining the occupations eligible for recruitment bonuses. These factors include data on the length and cost of training, overall staffing levels and shortages, and the length of the initial enlistment period.

The military departments use different approaches in considering the factors enumerated in DOD Instruction 1304.31 for awarding recruitment bonuses. The Army and Navy each use their own data models to identify which occupations should be offered recruitment bonuses and the size of each bonus. These models differ in the manner in which they operationalize the required factors, the weight they assign to each factor, and any additional factors that are included. For example, the Army data model calculates the amount of an enlistment bonus for each occupation based on a weighting of required factors, such as the length of the enlistment period and current staffing levels, and additional factors, such as whether the occupation requires a security clearance. Similarly, an official with responsibility for the Navy's model stated that the model and the Navy's associated decision-making process considers required factors such as current staffing levels and data on training costs, which officials stated may result in higher payments for occupations with high, fixed training costs. An official responsible for the Air Force's program stated that Instead of using a data model, the group engages with recruitment officials to identify which occupations should be offered recruitment bonuses, focusing especially on retention and length of training data to identify occupations that have long training pipelines.

Military Departments Spent About $146 Million on Retention Bonuses in Fiscal Years 2015 through 2019,

but Experienced Some Staffing Gaps and Have Not Established Retention Goals by Skill Level

Military Departments Offered Retention Bonuses but Experienced Staffing Gaps at Higher Skill Levels in Fiscal Years 2015 through 2019

The military departments spent about $146 million on retention bonuses between fiscal years 2015 through 2019, but each experienced staffing gaps in occupations at higher skill levels.[101] The military departments offer Selective Retention Bonuses to retain adequate numbers of personnel serving in occupations facing shortfalls. The bonuses are targeted and awarded based on, among other factors, staffing of skill or experience levels, which differ for each military department. Bonuses are paid as flat rates in the Army, as multiples of monthly base salary in the Air Force, and may be paid as either a flat rate or as multiples of monthly base salary in the Navy, with the Navy specifying award caps.

Army. The Army awarded retention bonuses to 6,595 individuals in 21 occupations at a total cost of nearly $58 million, from fiscal years 2015 through 2019. The Army's retention bonus spending ranged in size each fiscal year from nearly $1.5 million paid to 247 individuals in fiscal year 2015 to about $25 million paid to 2,303 individuals in fiscal year 2018. During this period, the number of occupations with staffing gaps at higher skill levels across the 23 Army occupations varied.

Specifically, gaps ranged from eight occupations with staffing levels below 95 percent in at least one higher skill in fiscal years 2015 and 2016 to 15 occupations with staffing levels below 95 percent in at least one skill level in fiscal year 2017. In addition, 13 occupations had a staffing level below 90 percent in at least one higher skill level during fiscal years 2015 through 2019, and four of these occupations had a staffing level below 80 percent in at least one higher skill level during this time period. For example, Behavioral Health Specialists had staffing levels below 90 percent in one skill level during fiscal years 2016 and 2017, and Optical

[101] We define a "staffing gap" as the difference between end strength and authorization. We examined the occupational specialties below 95, 90, and 80 percent of authorizations to assess the extent to which the military departments experienced gaps in enlisted medical occupations. The military departments differ in the number of skill levels for enlisted personnel, with the Army having 6, the Navy 9, and the Air Force 5. For the purposes of our analysis, we determined that higher skill levels include skill levels 3 through 5 for the Army, 5 through 9 for the Navy, and 5, 7, and 9 for the Air Force.

Laboratory Specialists had staffing levels below 80 percent in one skill level during fiscal years 2016 through 2018.

Navy. The Navy awarded retention bonuses to 1,377 individuals in 14 occupations at a total cost of about $20 million from fiscal years 2015 through 2019. The Navy's retention bonus spending ranged in size each fiscal year from about $1.9 million paid to 172 individuals in fiscal year 2017 to nearly $5.8 million paid to 356 individuals in fiscal year 2019. During this period, the number of occupations with staffing gaps at higher skill levels across the 41 Navy enlisted medical occupations varied.

Specifically, among the occupations with over 50 personnel, gaps ranged from 23 occupations with staffing levels below 95 percent in at least one higher skill level in fiscal year 2018 to 26 occupations with staffing levels below 95 percent in at least one skill level in fiscal years 2015 and 2017.[102] In addition, the number of occupations with at least one higher skill level with staffing levels below 80 percent ranged from 20 occupations in fiscal year 2018 to 24 occupations in fiscal year 2016. For example, Navy Surface Force Independent Duty Corpsmen had staffing levels below 80 percent in at least one higher skill level during each of fiscal years 2015 through 2019, while Navy Hospital Corpsmen had staffing levels below 80 percent in at least two higher skill levels during this period.

Air Force. The Air Force awarded retention bonuses to 16 occupations at a total cost of about $68 million from fiscal years 2015 through 2019. The Air Force's retention bonus spending ranged from about $2.3 million in fiscal year 2015 to about $22.6 million in fiscal year 2019.[103] During this period, the number of occupations with staffing gaps at higher skill levels across the 17 Air Force enlisted medical occupations varied. These staffing gaps ranged from a low of 10 occupations with staffing levels below 95 percent in at least one higher skill level in fiscal year 2015, to a high of 13 occupations with staffing levels below 95 percent in at least one skill level in fiscal year 2017. Fourteen of 17 occupations had a staffing level below 90 percent in at least one higher skill level during this

[102]We limited our analysis of Navy shortages to occupations with 50 or more total authorizations given the impact of small shortfalls on the percentage of the target achieved. All Army and Air Force occupations had 50 or more authorizations during this time period.

[103]We were unable to determine the number of bonus recipients by occupation in each fiscal year because, according to officials, bonus agreements may be executed in one fiscal year and paid out in the following years.

period, and seven occupations had a staffing level below 80 percent in at least one higher skill level during this time period. For example, Air Force Mental Health Services personnel had staffing levels for two skill levels below 90 percent during fiscal years 2015 through 2019, and staffing levels for at least one skill level below 80 percent in these same years, with the exception of fiscal year 2018.

For detailed information on staffing of individual enlisted medical occupations by skill level during fiscal years 2015 through 2019, see appendix V. For detailed information on retention bonus spending and the number of bonuses accepted by enlisted medical occupation during fiscal years 2015 through 2019, see appendix VI.

Military Departments Have Not Established Retention Goals for Enlisted Medical Personnel by Skill Level

The military departments set authorizations for individual skill levels within occupations, collect data on the current level of staffing compared to those authorizations, and assess other available data to monitor the status of occupations, such as retention rates. However, military department officials confirmed that they have not established retention goals by skill level to assist in maintaining appropriate staffing levels against set authorizations. DOD Instruction 1304.31 instructs the military departments to consider whether retention in each occupation fails to meet established objectives when designating military skills or career fields as eligible for a retention bonus. Additionally, key principles for human capital management state that decisions regarding investments such as retention bonuses should be based largely on the expected improvement in agency results,[104] while federal standards for internal control state that agencies should define objectives in measurable terms so that performance toward achieving those objectives can be assessed.

Military department officials provided varying rationales as to why they have not established retentions goals by skill level. An official with Army Human Resources Command stated that the Army is interested in retaining all qualified personnel. However, the number of active-duty personnel generally decreases as pay grade increases beginning at the level of mid-level noncommissioned officers, requiring deliberate decisions as to the type and number of personnel that should be retained. Additionally, each Army major command, such as Army Medical

[104]GAO-02-373SP.

Command, has broad retention goals for personnel in the early, middle, and later stages of their careers based on length of service. However, these goals are for the command as a whole, and not for individual occupations and skill levels. Separately, Navy officials stated that they do not have retention goals for individual occupations, but cited a staffing goal of 98 to 102 percent for each overall rating. An Air Force retention official confirmed that there are no retention goals for each occupation, and separately, Air Force officials highlighted the monitoring of staffing levels against authorizations by skill level. While assessing staffing against authorizations provides useful information, without establishing retention goals by skill level, the military departments will continue to lack key data that could help inform their assessment of the bonus program and their approach to addressing staffing gaps. Moreover, retention goals would better reflect the proportion of personnel the departments would prefer to retain rather than recruit, thus informing associated investment decisions.

The Military Departments Consider Some Key Factors When Offering Retention Bonuses, but Do Not Consistently Consider Civilian Wages and Training Costs

The military departments consider some key factors outlined in DOD policy when offering retention bonuses. DOD Instruction 1304.31 enumerates factors for the military departments to consider in identifying which occupations to offer retention bonuses.[105] These factors include the existence and severity of personnel shortages, the cost of training, the arduousness of the occupation, and related demand in the civilian labor market. The military departments vary in their approach to incorporating these factors into their decision-making process, but generally use a combination of analytical models and consultations with career field managers that address some factors. For example, the military departments' respective models and approaches include data on overall staffing and staffing gaps, and officials described how they incorporate information on skill criticality or the potential mission impact of shortages when determining the eligible occupations and amounts of retention bonuses

However, when offering retention bonuses, the military departments do not consistently consider information related to demand in the civilian

[105]DOD Instruction 1304.31.

labor market and the length and cost of training. Specifically, officials managing retention bonuses for all three military departments stated that their models do not incorporate information on demand in the civilian labor market, such as civilian wages for equivalent enlisted medical occupations. The military departments cited multiple reasons for not considering demand in the civilian labor market for the skills of enlisted medical personnel. Specifically, Army officials stated that those involved in setting retention bonuses may raise known challenges with the civilian labor market, but acknowledged it is not a formal part of their modeling. Air Force officials noted that their model includes retention data, which can identify retention challenges in competition with the civilian labor market. Similarly, the Navy considers projected retention and unemployment data in its data model as a proxy for demand in the civilian labor market. However, retention data, while providing important information and context, does not provide direct information on the level of civilian wages. Similarly, the overall unemployment rate reflected in the Navy's model does not provide direct information on civilian demand or wages for specific occupations.

We have previously highlighted the role of civilian wage information in making decisions regarding DOD's retention incentives. Specifically, in 2020, we found that DOD did not consistently collect information on private sector civilian wages for active-duty physicians and dentists, and recommended that it collect such information and use it to help inform investment decisions in the package of incentives to recruit and retain military physicians and dentists.[106] In addition, the *Report of the Eleventh Quadrennial Review of Military Compensation* encouraged the military departments to assess civilian supply and demand, including civilian wages, in their decisions to offer special and incentive pays.[107] By considering data on civilian wages, the military departments may identify ways to more effectively target retention bonuses to occupations for which separation from the military and employment in the civilian economy is financially attractive.

Additionally, while Army and Air Force retention data models incorporate data on the length or cost of training, the Navy's model does not. Navy

[106]GAO, *Defense Health Care: DOD Should Collect and Use Key Information to Make Decisions about Incentives for Physicians and Dentists*, GAO-20-165 (Washington, D.C.: Jan. 15, 2020). DOD concurred with this recommendation, but has not yet taken action to implement it.

[107]*Report of the Eleventh Quadrennial Review of Military Compensation*.

officials stated that although the Navy does have estimates for the cost to replace individuals in given occupations, including training costs, this information is not used in the Navy retention bonus model. Specifically, officials stated that they do not include this information in their model because the replacement costs for most occupations are higher than the amount of retention bonuses. However, officials acknowledged that training costs vary, thus affecting the cost of attrition.

We have previously highlighted the role of training costs in making decisions regarding DOD's retention incentives. For example, in 2020 we found that DOD did not consistently collect information on replacement costs of military physicians and dentists, and recommended that it collect such information and use it to help inform investment decisions in the package of incentives to recruit and retain military physicians and dentists.[108] By including information on the cost of training when awarding retention bonuses, the Navy could better target retention bonuses to occupations for which it has made greater investments to meet its mission.

Conclusions

Enlisted medical personnel perform key roles in the delivery of military healthcare and must be ready to provide life-saving care to injured and ill servicemembers in an expeditionary setting. DOD and the military departments have made progress in defining, sustaining, and tracking the status of wartime medical skills for enlisted medical personnel, but significant gaps limit the departments' ability to sustain a ready enlisted medical workforce. For example, the military departments have defined wartime medical skills for most enlisted medical occupations, but the Army and the Air Force have neither defined skills for some highly-skilled subspecialties nor fully incorporated joint wartime medical skills into their respective checklists. In addition, the Air Force and the Army have not periodically reviewed skills checklists or consistently prescribed sustainment training methods, respectively. By taking action to fully define wartime medical skills for all occupational subspecialties and incorporate joint skills into their checklists, the Army and the Air Force will have greater assurance that all enlisted medical personnel are trained on skills necessary to perform their roles in an expeditionary environment. Similarly, by periodically reviewing checklists for currency and updating

[108] GAO-20-165. DOD concurred with this recommendation, but has not yet taken action to implement it.

guidance to define sustainment training methods, the Army and Air Force, respectively, will be able to better ensure that enlisted medical personnel receive the training necessary to perform medical operations in a deployed setting.

In addition, while each of the military departments has taken steps to define the frequency at which enlisted personnel should be trained on wartime medical skills and track training completion, additional efforts are warranted. Specifically, by incorporating findings from DOD's project on highly perishable, mission-essential medical skills, the military departments will be better positioned to provide the frequency of training necessary to sustain the readiness of the enlisted medical personnel for expeditionary operations. Similarly, without requiring consistent tracking of training on wartime medical skills for enlisted medical personnel, the Army will lack information needed to evaluate the preparedness of its enlisted medical personnel. Finally, by establishing performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracking associated performance, the military departments will obtain a better understanding of enlisted occupations' preparedness and be better positioned to assess the sufficiency of their respective training programs.

Although DOD has issued clear principles for how wartime medical skills should be sustained through a mixture of MTF workload, civilian partnerships, and medical simulation, gaps exist in DOD and military department plans and processes to assess how each training approach contributes to enlisted medical personnel readiness and addresses training deficiencies. Specifically, without including information on enlisted medical personnel in developing its metrics to assess the contributions of MTFs and civilian partnerships, DHA will lack information needed to determine the proper mix of MTF and civilian partnership assignments. Similarly, without a full inventory of civilian partnerships in which enlisted medical personnel participate and a process to streamline and add to them, along with information on the role of medical simulation in sustaining readiness, DHA will lack a comprehensive understanding of how these approaches support readiness and will therefore be unable to determine current and future training investments. Further, without developing clinical readiness processes, the Army and the Navy will be unable to identify and address wartime medical skills training gaps that could negatively affect clinical readiness.

Actions are also needed to address challenges that present risks to DOD's efforts to sustain enlisted medical wartime skills, which range from

MTF staffing to opportunities to train on expeditionary medical equipment. DOD and military department officials have recognized the need to address such challenges and taken limited steps to address them, such as by chartering a working group to standardize partnership agreements. However, until DOD fully analyzes and responds to these risks, as appropriate, it may be limited in its ability to achieve clinical readiness for enlisted medical personnel.

Finally, while the military departments generally met their recruitment goals for enlisted medical personnel and considered required information in their decisions to offer recruitment bonuses, there are opportunities to improve their efforts to retain sufficient enlisted medical personnel. For example, by establishing retention goals for enlisted medical personnel, by skill level, the military departments will improve their ability to assess the effectiveness of their retention programs and address existing staffing gaps at higher skill levels. In addition, by considering information on civilian wages when awarding retention bonuses, the military departments can better target retention bonuses to occupations in direct competition with the civilian sector. Similarly, by considering including information on the length and cost of training, the Navy could better align retention bonuses with occupations for which the Navy has made its greatest investments.

Recommendations for Executive Action

We are making the following 30 recommendations to DOD, including six to the Secretary of Defense, nine to the Secretary of the Army, six to the Secretary of the Navy, and nine to the Secretary of the Air Force. Specifically:

The Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence, takes corrective action to define wartime medical skills for enlisted medical subspecialties with an expeditionary role. (Recommendation 1)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, takes corrective action to define and implement wartime medical skills for enlisted medical subspecialties with an expeditionary role. (Recommendation 2)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, establishes guidance that requires the development of wartime medical skills for current and future enlisted medical subspecialties with an expeditionary role. (Recommendation 3)

The Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence, takes corrective action to fully incorporate joint wartime medical skills into Army wartime medical skills checklists. (Recommendation 4)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, takes corrective action to fully incorporate joint wartime medical skills into Air Force wartime medical skills checklists. (Recommendation 5)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, issues guidance requiring the incorporation of joint wartime medical skills into Air Force checklists. (Recommendation 6)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, takes corrective action to review and update outdated wartime medical skills checklists for enlisted medical occupations. (Recommendation 7)

The Secretary of the Army should ensure that the Commanding General, U.S. Army Training and Doctrine Command, updates its guidance to require the specification of acceptable methods of sustainment training for wartime medical skills for enlisted medical personnel. (Recommendation 8)

The Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence, incorporates findings on skills degradation from DOD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills. (Recommendation 9)

The Secretary of the Navy should ensure that the Surgeon General of the Navy incorporates findings on skills degradation from DOD's project on highly perishable and mission-essential medical skills into its processes to

identify appropriate training frequencies of wartime medical skills. (Recommendation 10)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, incorporates findings on skills degradation from DOD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills. (Recommendation 11)

The Secretary of the Army should ensure that the Surgeon General of the Army requires the consistent tracking of training on wartime medical skills for enlisted medical personnel. (Recommendation 12)

The Secretary of the Army should ensure that the Surgeon General of the Army establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets. (Recommendation 13)

The Secretary of the Navy should ensure that the Surgeon General of the Navy establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets. (Recommendation 14)

The Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency, establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets. (Recommendation 15)

The Secretary of Defense should ensure the Director, DHA, develops metrics to assess the contributions of MTF workload to sustaining wartime medical skills that include the medical care provided by enlisted medical personnel. (Recommendation 16)

The Secretary of Defense should ensure the Director, DHA, develops the required inventory of civilian partnerships to include all partnerships in which enlisted medical personnel may participate. (Recommendation 17)

The Secretary of Defense should ensure the Director, DHA, develops a process to identify opportunities to streamline or add military-civilian training partnerships. (Recommendation 18)

The Secretary of Defense should ensure the Director, DHA, develops metrics to assess the contributions of civilian partnerships to sustaining wartime medical skills that include the medical care provided by enlisted medical personnel. (Recommendation 19)

The Secretary of Defense should ensure the Director, DHA, performs the proposed assessment of available simulation programs, demand for them, and gaps in clinical training and simulation requirements. (Recommendation 20)

The Secretary of the Army should ensure the Surgeon General develops and implements a consistent clinical readiness assessment process for wartime medical skills maintenance to identify and address gaps in training. (Recommendation 21)

The Secretary of the Navy should ensure the Surgeon General develops and implements a consistent clinical readiness assessment process for wartime medical skills maintenance to identify and address gaps in training. (Recommendation 22)

The Secretary of Defense should ensure the Director, DHA, in conjunction with the Surgeons General of the Army, the Navy, and the Air Force analyzes and responds, as appropriate, to risks to sustaining enlisted personnel wartime medical skills associated with: (1) staffing challenges at MTFs; (2) managing rotations of non-MTF personnel to MTFs; (3) barriers to civilian partnerships; and (4) challenges in providing enlisted medical personnel opportunities to train on expeditionary medical equipment. (Recommendation 23)

The Secretary of the Army should develop annual retention goals, by skill level, for enlisted medical personnel. (Recommendation 24)

The Secretary of the Navy should develop annual retention goals, by skill level, for enlisted medical personnel. (Recommendation 25)

The Secretary of the Air Force should develop annual retention goals, by skill level, for enlisted medical personnel. (Recommendation 26)

The Secretary of the Army should consider incorporating data on civilian pay for comparable occupations in the Army's decision-making processes for awarding retention bonuses. (Recommendation 27)

The Secretary of the Navy should consider incorporating data on civilian pay for comparable occupations in the Navy's decision-making processes for awarding retention bonuses. (Recommendation 28)

The Secretary of the Air Force should consider incorporating data on civilian pay for comparable occupations in the Air Force's decision-making processes for awarding retention bonuses. (Recommendation 29)

The Secretary of the Navy should include information on the cost of training in its decision-making process for awarding retention bonuses. (Recommendation 30)

Agency Comments and Our Evaluation

We provided a draft of this report to DOD for review and comment. In its written comments, reproduced in their entirety in appendix VII, DOD concurred with each of our 30 recommendations. In some instances, DOD described planned actions to address our recommendations. As discussed below, the Navy also cited existing practices it indicated were consistent with certain recommendations.

In concurring with recommendation 25, that the Secretary of the Navy should develop annual retention goals, by skill level, for enlisted medical personnel, the Navy stated that it has a goal to retain personnel in order to keep skillsets filled at a rate of between 98 to 102 percent. However, as described in this report, Navy officials stated that this is a staffing goal, and confirmed that the Navy has not established retention goals by skill level to assist in maintaining appropriate staffing levels against set authorizations. While assessing staffing against authorizations provides useful information, we continue to believe that without establishing retention goals by skill level, the Navy will lack key data that could help inform its assessment of the bonus program and its approach to addressing staffing gaps. Further, retention goals would better reflect the proportion of personnel the Navy would prefer to retain rather than recruit, thus informing associated investment decisions.

In concurring with recommendation 28, that the Secretary of the Navy should consider incorporating data on civilian pay for comparable

occupations in its decision-making processes for awarding retention bonuses, the Navy stated that Navy guidance bases eligibility for retention bonuses on demand signals for the skill in the civilian labor market and the relatively arduous or unattractive nature of the skill compared to alternative skills and civilian options. As described in this report, the Navy considers projected retention and overall unemployment data in its data model as a proxy for demand in the civilian labor market, and does not incorporate information on demand in the civilian labor market, such as civilian wages for equivalent enlisted medical occupations. While providing important information and context, retention data does not provide direct information on the level of civilian wages. Similarly, the unemployment rate reflected in the Navy's model does not reflect direct information on civilian demand or wages for specific occupations. As a result, we continue to believe that by considering data on civilian wages, the Navy may identify ways to more effectively target retention bonuses to occupations for which separation from the military and employment in the civilian economy is financially attractive.

In concurring with recommendation 30, that the Secretary of the Navy should include information on the cost of training in its decision-making process for awarding retention bonuses, the Navy stated that training and replacement costs are factors when setting retention bonus rates and that fixed training costs do not vary based on normal variations in trainee throughput. The Navy further stated that the length of training and time required to produce a sailor with a specific skillset is a recognized cost fully considered when determining retention bonus levels. However, as noted in our report, Navy officials stated that although the Navy does have estimates for the cost to replace individuals in given occupations, including training costs, this information is not used in the Navy retention bonus model. Specifically, officials stated that they do not include this information in their model because the replacement costs for most occupations are higher than the amount of retention bonuses. However, officials acknowledged that training costs vary, thus affecting the cost of attrition. As a result, we continue to believe that by including information on the cost of training when awarding retention bonuses, the Navy could better target retention bonuses to occupations for which it has made greater investments to meet its mission.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the Acting Assistant Secretary of Defense for Health Affairs, the Secretary of the Army, and the Acting Secretaries of the Navy and Air Force. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-3604 or FarrellB@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix VIII.

Brenda S. Farrell
Director, Defense Capabilities and Management

Appendix I: Fiscal Year 2019 Active-Duty End Strength Levels by Military Department and Enlisted Medical Occupation

As of the end of fiscal year 2019, the military departments maintained over 73,000 active-duty enlisted medical personnel spread across 80 unique enlisted medical occupations. See table 2 for an overview of fiscal year 2019 end strengths by enlisted medical occupation and military department.

Table 2: Active-Duty Enlisted Medical Personnel End Strengths, by Occupation and Military Department, Fiscal Year 2019

Army occupation	End strength	Navy occupation	End strength	Air Force occupation	End strength[a]
Health Care Specialist	14,866	Hospital Corpsman/Medical Care and Treatment, General	10,525	Aerospace Medical Service	5,511
Practical Nursing Specialist	1,396	Field Medical Service Technician	6,560	Health Services Management	2,462
Medical Laboratory Specialist	1,360	Dental Assistant	1,745	Dental Services[b]	2,030
Dental Specialist	1,339	Medical Laboratory Technician	1,059	Public Health	1,047
Medical Logistics Specialists	981	Surface Force Independent Duty Corpsman	1,027	Medical Laboratory[c]	963
Behavioral Health Specialist	978	Surgical Technologist	836	Medical Materiel	954
Veterinary Food Inspection Specialist	918	Aerospace Medical Technician	705	Bioenvironmental Engineering	909
Radiology Specialist	785	Preventive Medicine Technician	696	Mental Health Services	843
Operating Room Specialist	736	Advanced X-Ray Technician	661	Diagnostic Imaging	741
Biomedical Equipment Specialist	675	Pharmacy Technician	623	Pharmacy	689
Patient Administration Specialist	605	Biomedical Equipment Technician	498	Surgical Service	591
Preventive Medicine Specialist	559	Behavioral Health Technician	282	Biomedical Equipment Maintenance	445
Animal Care Specialist	524	Physical Therapy Technician	186	Cardiopulmonary Lab	278

Army occupation	End strength	Navy occupation	End strength	Air Force occupation	End strength[a]
Pharmacy Specialist	508	Submarine Force Independent Duty Corpsman	183	Aerospace & Operational Physiology[d]	261
Nutrition Care Specialist	342	Optician	171	Physical Medicine	257
Respiratory Specialist	282	Respiratory Therapist	142	Optometry	224
Physical Therapy Specialist	222	Fleet Marine Force Reconnaissance Independent Duty Corpsman	126	Diet Therapy	172
Orthopedic Specialist	200	Orthopedic Technician	125	—	—
Eye Specialist	184	Radiation Health Technician	88	—	—
Chief Medical Noncommissioned Officer	178	Deep Sea Diving Independent Duty Corpsman	88	—	—
Optical Laboratory Specialist	119	Dental Laboratory Technician (Basic)	88	—	—
Ear, Nose, and Throat Specialist[e]	101	Dental Laboratory Technician (Advanced)	85	—	—
Occupational Therapy Specialist	89	Cardiovascular Technician	84	—	—
Cardiovascular Specialist[e]	56	Medical Deep Sea Diving Technician	80	—	—
—	—	Fleet Marine Force Reconnaissance Corpsman[f]	62	—	—
—	—	Urology Technician	59	—	—
—	—	Dental Hygienist	58	—	—
—	—	Aerospace Physiology Technician	57	—	—
—	—	Navy Drug and Alcohol Counselor Intern	30	—	—
—	—	Nuclear Medicine Technologist	26	—	—
—	—	Histopathology Technician	26	—	—
—	—	Electroneurodiag-nostic Technologist	21	—	—
—	—	Occupational Therapy Assistant	18	—	—
—	—	Hemodialysis Technician	13	—	—
—	—	Dental Laboratory Technician (Maxillofacial)	12	—	—
—	—	Mortician	10	—	—
—	—	Ophthalmic Surgical Technician	9	—	—

Army occupation	End strength	Navy occupation	End strength	Air Force occupation	End strength[a]
—	—	Navy Drug and Alcohol Counselor	6	—	—
—	—	Search and Rescue Medical Technician	4	—	—
—	—	Ultrasound Technologist	0	—	—
—	—	Mammography Technologist	0	—	—
Total	**28,003**		**27,074**		**18,377**
Total for all military departments: 73,454					

Legend: — = not applicable

Source: GAO analysis of Department of Defense (DOD) information. | GAO-21-337

[a]Totals for the Aerospace Medical Service, Physical Medicine, Surgical Service, Diagnostic Imaging, Optometry, and Dental Services occupations include personnel qualified in occupational subspecialties.

[b]The Dental Services career field consists of two separate occupations— Dental Assistant and Dental Laboratory—that merge at the highest skill level. As such, we counted end strength totals for these two occupations together.

[c]The Medical Laboratory career field consists of two separate occupations-Medical Laboratory and Histopathology—that merge at the highest skill level. As such, we counted end strength totals for these two occupations together.

[d]According to an Air Force official, the Aerospace & Operational Physiology occupation is being transitioned out of the enlisted medical corps.

[e]Occupation has been marked for deletion.

[f]Navy officials stated that the Fleet Marine Force Reconnaissance Corpsman occupation has been replaced with the Fleet Marine Force Reconnaissance Independent Duty Corpsman occupation.

Appendix II: Status of Military Department Wartime Medical Skills Checklists

As of January 2021, the military departments had defined wartime medical skills checklists for 73 of 77 individual enlisted medical occupations within the scope of our review. Specifically, the Army had developed checklists for all 21 enlisted medical occupations within the scope of our review; the Navy had developed checklists for 36 of 40 occupations within the scope of our review, with the remaining four in process; and the Air Force had developed checklists for all 16 of its occupations within the scope of our review. At the time of our review, 24 of the Navy's occupations had completed checklists that had not yet received final approval from the Surgeon General of the Navy. See table 3 for the status of military departments' wartime medical skills checklists.

Table 3: Status of Military Department Wartime Medical Skills Checklists, January 2021

Army occupation/a/	Status	Navy occupation/b	Status	Air Force occupation/c/	Status
Biomedical Equipment Specialist	Completed	Search and Rescu/e Medical Technician	In Development	Health Services Management	Completed
Orthopedic Specialist	Completed	Submarine Force Independent Duty Corpsman	Completed	Medical Materiel	Completed
Practical Nursing Specialist	Completed	Fleet Marine Force Reconnaissance Independent Duty Corpsman	Completed	Biomedical Equipment Maintenance	Completed
Operating Room Specialist	Completed	Field Medical Service Technician	Completed, not yet approved	Bioenvironmental Engineering	Completed
Dental Specialist	Completed	Aerospace Medical Technician	In Development	Mental Health Services	Completed
Physical Therapy Specialist	Completed	Radiation Health Technician	Completed, not yet approved	Diet Therapy	Completed
Patient Administration Specialist	Completed	Cardiovascular Technician	Completed, not yet approved	Public Health	Completed
Optical Laboratory Specialist	Completed	Aerospace Physiology Technician	Completed, not yet approved	Cardiopulmonary Lab	Completed
Medical Logistics Specialist	Completed	Biomedical Equipment Technician	Completed, not yet approved	Physical Medicine	Completed

Army occupation/a/	Status	Navy occupation/b	Status	Air Force occupation/c/	Status
Medical Laboratory Specialist	Completed	Nuclear Medicine Technologist	In Development	Aerospace Medical Service	Completed
Occupational Therapy Specialist	Completed	Surface Force Independent Duty Corpsman	Completed	Surgical Service	Completed
Nutrition Care Specialist	Completed	Preventive Medicine Technician	Completed	Pharmacy	Completed
Radiology Specialist	Completed	Hemodialysis Technician	Completed, not yet approved	Diagnostic Imaging	Completed
Pharmacy Specialist	Completed	Ophthalmic Surgical Technician	In Development	Medical Laboratory	Completed
Veterinary Food Inspection Specialist	Completed	Ultrasound Technologist	Completed, not yet approved	Optometry	Completed
Preventive Medicine Specialist	Completed	Mammography Technologist	Completed, not yet approved	Dental Services	Completed
Animal Care Specialist	Completed	Advanced X-Ray Technician	Completed, not yet approved	Not Applicable	Not Applicable
Respiratory Specialist	Completed	Electroneurodiagnostic Technologist	Completed, not yet approved	Not Applicable	Not Applicable
Health Care Specialist	Completed	Optician	Completed, not yet approved	Not Applicable	Not Applicable
Behavioral Health Specialist	Completed	Physical Therapy Technician	Completed, not yet approved	Not Applicable	Not Applicable
Eye Specialist	Completed	Occupational Therapy Assistant	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Pharmacy Technician	Completed	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Surgical Technologist	Completed	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Behavioral Health Technician	Completed	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Urology Technician	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Orthopedic Technician	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Medical Deep Sea Diving Technician	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Deep Sea Diving Independent Duty Corpsman	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Mortician	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Histopathology Technician	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Medical Laboratory Technician	Completed	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Respiratory Therapist	Completed	Not Applicable	Not Applicable

Army occupation/a/	Status	Navy occupation/b	Status	Air Force occupation/c/	Status
Not Applicable	Not Applicable	Dental Assistant	Completed	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Dental Hygienist	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Dental Laboratory Technician (Basic)	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Dental Laboratory Technician (Advanced)	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Dental Laboratory Technician (Maxillofacial)	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Navy Drug and Alcohol Counselor Intern	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Navy Drug and Alcohol Counselor	Completed, not yet approved	Not Applicable	Not Applicable
Not Applicable	Not Applicable	Hospital Corpsman/Medical Care and Treatment, General	Completed	Not Applicable	Not Applicable

Legend: ● = completed; ◐ = completed, not yet approved by military department-approved process; ○ = in development; — = not applicable.

Source: Analysis of Department of Defense (DOD) information. | GAO-21-337

[a]We excluded four Army enlisted occupations from our analysis: Cardiovascular Specialist; Ear, Nose, and Throat Specialist; Chief Medical Noncommissioned Officer; and Special Forces Medical Sergeant. We excluded the Cardiovascular Specialist and Ear, Nose, and Throat Specialist occupations because they have been marked for deletion. We excluded the Chief Medical Noncommissioned Officer occupation because, according to Army officials, this position is advisory/administrative in nature and requires qualification in another enlisted occupation. We excluded the Special Forces Medical Sergeant occupation because it is not included as a part of the U.S. Army Medical Department's Enlisted Corps.

[b]We excluded the Navy Fleet Marine Force Reconnaissance Corpsman occupation because, according to Navy officials, it has been discontinued and replaced with the Fleet Marine Force Reconnaissance Independent Duty Corpsman occupation. We also excluded the Naval Special Warfare Special Operations Tactical Medic and Naval Special Warfare Special Operations Combat Medic occupations from our analysis.

[c]We excluded four Air Force enlisted medical occupations from our analysis: Aerospace & Operational Physiology, Histopathology, Dental Laboratory, and Pararescue. According to an Air Force official, the Aerospace & Operational Physiology occupation is being transitioned out of the enlisted medical corps. In addition, Air Force officials explained that enlisted medical personnel in the Histopathology occupation do not have an expeditionary readiness mission, and enlisted medical personnel performing the Dental Laboratory occupation do not perform their in-garrison role when deployed, but instead predominantly serve as escorts to base visitors or in support roles.

Appendix III: Military Department Active-Duty Recruitment for Enlisted Medical Occupations, Fiscal Years 2015-2019

This appendix presents the military departments' actual number of personnel recruited, recruitment goals, and percent recruited by enlisted medical occupation, from fiscal years 2015 through 2019. Tables 4, 5, and 6 present this information for each military department.

Table 4: Army Active-Duty Actual Number Personnel Recruited, Recruitment Goals, and Percent Recruited by Enlisted Medical Occupation, Fiscal Years 2015 – 2019

Occupation	2015 Recruited actual/goal (percent)	2016	2017	2018	2019
Biomedical Equipment Specialist	110/118	141/144	139/128	132/140	122/126
	(93)	(98)	(109)	(94)	(97)
Orthopedic Specialist	32/31	42/44	44/43	33/36	26/24
	(103)	(95)	(102)	(92)	(108)
Practical Nursing Specialist	418/401	385/360	348/315	377/375	343/349
	(104)	(107)	(110)	(101)	(98)
Operating Room Specialist	151/151	183/177	182/171	179/197	199/202
	(100)	(103)	(106)	(91)	(99)
Dental Specialist	182/163	218/206	181/157	233/218	162/150
	(112)	(106)	(115)	(107)	(108)
Physical Therapy Specialist	42/37	31/36	45/39	50/53	44/39
	(114)	(86)	(115)	(94)	(113)
Patient Administration Specialist	96/72	122/116	94/72	97/87	91/81
	(133)	(105)	(131)	(111)	(112)
Optical Laboratory Specialist	22/24	40/39	20/21	18/21	14/15
	(92)	(103)	(95)	(86)	(93)
Medical Logistics Specialist	145/125	188/166	150/123	169/158	126/122
	(116)	(113)	(122)	(107)	(103)
Medical Laboratory Specialist	321/333	233/282	215/246	270/361	258/325
	(96)	(83)	(87)	(75)	(79)

Occupation	2015 Recruited actual/goal (percent)	2016	2017	2018	2019
Occupational Therapy Specialist	1/1 (100)	—	—	—	—
Nutrition Care Specialist	72/66 (109)	54/56 (96)	60/52 (115)	83/75 (111)	58/60 (97)
Cardiovascular Specialist	5/9 (56)	5/21 (24)	19/17 (112)	15/15 (100)	1/1 (100)
Radiology Specialist	78/69 (113)	141/139 (101)	140/135 (104)	147/153 (96)	180/188 (96)
Pharmacy Specialist	77/73 (105)	129/125 (103)	70/68 (103)	97/127 (76)	101/99 (102)
Veterinary Food Inspection Specialist	125/143 (87)	142/148 (96)	153/163 (94)	148/148 (100)	150/174 (86)
Preventive Medicine Specialist	101/108 (94)	91/117 (78)	89/99 (90)	82/111 (74)	97/107 (91)
Animal Care Specialist	125/123 (102)	123/129 (95)	106/108 (98)	112/124 (90)	101/101 (100)
Ear, Nose and Throat Specialist	25/26 (96)	32/33 (97)	22/21 (105)	16/19 (84)	6/7 (86)
Respiratory Specialist	—	2/0 (—)	—	—	—
Health Care Specialist	2352/2400 (98)	3327/3261 (102)	3226/2865 (113)	3248/3132 (104)	3202/3357 (95)
Behavioral Health Specialist	252/247 (102)	158/158 (100)	195/183 (107)	213/208 (102)	225/221 (102)
Eye Specialist	23/23 (100)	36/51 (71)	42/35 (120)	29/40 (73)	28/29 (97)

Legend: Percentages are rounded. — = not applicable.

Source: GAO analysis of Army information. | GAO-21-337

Table 5: Navy Active-Duty Actual Number Personnel Recruited, Recruitment Goals, and Percent Recruited by Enlisted Medical Occupation, Fiscal Years 2016 - 2019

Occupation	2016 Recruited actual/goal (percent)	2017	2018	2019
Hospital Corpsman/Medical Care and Treatment, General	2,350/2,352 (100)	3,067/3,067 (100)	3,237/3,237 (100)	3,067/3,067 (100)
Dental Assistant	263/263 (100)	359/359 (100)	289/289 (100)	359/359 (100)
Mortician	2/2 (100)	1/1 (100)	2/2 (100)	1/1 (100)

Occupation	2016 Recruited actual/goal (percent)	2017	2018	2019
Hospital Corpsman - Linguist	1/1 (100)	12/12 (100)	—	—
Advanced Technical Field[a]	—	—	—	186/186 (100)

Legend: — = not applicable.

Source: GAO analysis of Navy information. | GAO-21-337

Note: The Navy was not able to provide data for fiscal year 2015. Percentages are rounded.

[a]Includes Search and Rescue Medical Technician, Fleet Marine Force Reconnaissance Independent Duty Corpsman, and Medical Deep Sea Diving Technician.

Table 6: Air Force Active-Duty Actual Number Personnel Recruited, Recruitment Goals, and Percent Recruited by Enlisted Medical Occupation, Fiscal Years 2015 – 2019

Occupation	2015 Recruited/Goal (Percent)	2016	2017	2018	2019
Health Services Management	61/61 (100)	67/65 (103)	97/75 (129)	83/77 (108)	88/91 (97)
Medical Materiel	33/24 (138)	40/27 (148)	41/42 (98)	35/35 (100)	52/56 (93)
Biomedical Equipment Maintenance	33/31 (106)	38/38 (100)	39/36 (108)	36/39 (92)	32/38 (84)
Bioenvironmental Engineering	30/30 (100)	40/37 (108)	74/39 (190)	99/99 (100)	91/91 (100)
Mental Health Services	—	—	—	—	—
Diet Therapy	7/5 (140)	6/6 (100)	9/6 (150)	8/7 (114)	8/7 (114)
Public Health	30/30 (100)	35/35 (100)	64/34 (188)	54/30 (180)	74/51 (145)
Cardiopulmonary Lab	61/47 (130)	35/34 (103)	46/54 (85)	43/50 (86)	45/45 (100)
Physical Medicine	13/12 (108)	13/13 (100)	19/12 (158)	23/8 (288)	27/28 (96)
Aerospace/Operational Physiology	27/9 (300)	29/11 (264)	38/11 (345)	37/23 (161)	36/23 (157)
Aerospace Medical Service	201/183 (110)	249/194 (128)	290/220 (132)	441/391 (113)	380/342 (111)
Surgical Service	23/17 (135)	30/25 (120)	36/28 (129)	24/23 (104)	32/29 (110)

Occupation	2015 Recruited/Goal (Percent)	2016	2017	2018	2019
Pharmacy	32/31	35/34	48/34	35/34	38/38
	(103)	(103)	(141)	(103)	(100)
Diagnostic Imaging	37/25	38/34	29/27	31/28	39/36
	(148)	(112)	(107)	(111)	(108)
Medical Laboratory	29/29	63/35	66/38	41/40	52/40
	(100)	(180)	(174)	(103)	(130)
Histopathology	2/2	3/2	1/2	1/2	2/2
	(100)	(150)	(50)	(50)	(100)
Optometry	10/8	11/11	10/7	8/9	10/11
	(125)	(100)	(143)	(89)	(91)
Dental Assistant	64/43	74/59	88/69	74/67	68/72
	(149)	(125)	(128)	(110)	(94)
Occupation	**2015 Recruited/Goal (Percent)**	**2016**	**2017**	**2018**	**2019**
Dental Laboratory	16/11	17/16	16/16	13/13	17/16
	(145)	(106)	(100)	(100)	(106)

Legend: — = not applicable.

Source: GAO analysis of Air Force information. | GAO-21-337

Note: Percentages are rounded.

Appendix IV: Military Department Active-Duty Recruitment Bonus Expenditures and Recipients, Fiscal Years 2015-2019

This appendix presents the military departments' total active-duty recruitment bonus expenditures and number of recipients by occupation from fiscal years 2015 through 2019. Tables 7, 8, and 9 present this information for each military department.

Table 7: Army Active-Duty Total Recruitment Bonus Expenditures in Dollars and Number of Bonuses Awarded, by Enlisted Medical Occupation, Fiscal Years 2015 - 2019

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019	Total
Biomedical Equipment Specialist	—	1,925,000 (115)	1,173,000 (124)	1,357,000 (107)	428,000 (41)	**4,883,000 (387)**
Orthopedic Specialist	—	—	36,000 (3)	—	—	**36,000 (3)**
Practical Nursing Specialist	—	—	916,000 (64)	403,000 (67)	—	**1,319,000 (131)**
Operating Room Specialist	—	48,000 (3)	108,000 (9)	186,000 (34)	—	**342,000 (46)**
Dental Specialist	90,000 (13)	—	176,000 (13)	182,000 (33)	—	**448,000 (59)**
Physical Therapy Specialist	—	—	208,000 (20)	-	—	**208,000 (20)**
Patient Administration Specialist	—	—	—	100,000 (17)	—	**100,000 (17)**
Optical Laboratory Specialist	—	—	98,000 (6)	118,500 (15)	32,000 (3)	**248,500 (24)**
Medical Logistics Specialist	36,000 (6)	—	40,000 (2)	240,500 (41)	—	**316,500 (49)**
Medical Laboratory Specialist	—	1,224,000 (87)	3,164,000 (198)	4,690,500 (260)	3,402,000 (242)	**12,480,500 (787)**

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019	Total
Nutrition Care Specialist	—	—	180,000	12,500	—	**192,500**
			(12)	(5)		**(17)**
Cardiovascular Specialist	40,000	180,000	660,000	220,000	—	**1,100,000**
	(2)	(5)	(18)	(6)		**(31)**
Radiology Specialist	—	—	517,000	516,500	—	**1,033,500**
			(41)	(63)		**(104)**
Pharmacy Specialist	—	—	144,000	156,500	—	**300,500**
			(9)	(28)		**(37)**
Veterinary Food Inspection Specialist	20,000	1,274,000	1,347,000	674,500	219,000	**3,534,500**
	(2)	(88)	(101)	(103)	(69)	**(363)**
Preventive Medicine Specialist	—	660,000	868,000	955,500	1,147,000	**3,630,500**
		(42)	(70)	(72)	(89)	**(273)**
Animal Care Specialist	—	—	96,000	127,500	—	**223,500**
			(12)	(24)		**(36)**
Ear, Nose and Throat Specialist	—	—	—	5,000	—	**5,000**
				(2)		**(2)**
Health Care Specialist	170,000	31,311,000	27,557,000	25,593,500	5,210,000	**89,841,500**
	(17)	(2,463)	(2,801)	(2,375)	(428)	**(8,084)**
Behavioral Health Specialist	—	-—	390,000	178,500	—	**568,500**
			(39)	(32)		**(71)**
Eye Specialist	—	254,000	295,000	125,000	—	**674,000**
		(14)	(28)	(13)		**(55)**
Total	**356,000**	**36,876,000**	**37,973,000**	**35,842,500**	**10,438,000**	**121,485,500**
	(40)	**(2,817)**	**(3,570)**	**(3,297)**	**(872)**	**(10,596)**

Legend: — = not applicable.

Source: GAO analysis of Army information. | GAO-21-337

Note: Dollar amounts represent obligations.

Table 8: Navy Active-Duty Total Recruitment Bonus Expenditures in Dollars and Number of Bonuses Awarded, by Enlisted Medical Occupation, Fiscal Years 2015 - 2019

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019	Total
Advanced Technical Field[a]	—	—	—	50,000	3,975,000	**4,025,000**
				(2)	(186)	**(188)**

Legend: — = not applicable.

Source: GAO analysis of Navy information. | GAO-21-337

[a]Includes Search and Rescue Medical Technician, Fleet Marine Force Reconnaissance Independent Duty Corpsman, and Medical Deep Sea Diving Technician.

Table 9: Air Force Active-Duty Total Recruitment Bonus Expenditures and Recipients, by Enlisted Medical Occupation, Fiscal Years 2015 – 2019

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019	Total
Cardiopulmonary Laboratory	256,000	168,000	—	—	—	**424,000**
	(32)	(21)				**(53)**

Legend: — = not applicable.

Source: GAO analysis of Air Force information. | GAO-21-337

Appendix V: Shortages in Higher Skill Levels of Active-Duty Enlisted Medical Occupations by Military Department, Fiscal Years 2015-2019

This appendix presents shortages in the higher skill levels of active-duty enlisted medical occupations by percent of authorized positions filled and skill level for each military department from fiscal years 2015-2019. Tables 10, 11, and 12 provide this information for each military department.

Table 10: Shortages in Higher Skill Levels of Army Active-Duty Enlisted Medical Occupations by Percent of Authorized Positions Filled, Fiscal Years 2015 - 2019

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
<95-90	Medical Laboratory Specialist (4)	Practical Nursing Specialist (3)	Operating Room Specialist (3)	Biomedical Equipment Specialist (5)	Health Care Specialist (3, 5)
	Animal Care Specialist (4)	Biomedical Equipment Specialist (5)	Radiology Specialist (4)	Health Care Specialist (5)	Medical Laboratory Specialist (5)
	Optical Laboratory Specialist (3)	Pharmacy Specialist (4)	Orthopedic Specialist (3, 4)	Medical Logistics Specialist (4, 5)	Practical Nursing Specialist (4, 5)
	Practical Nursing Specialist (5)	Preventive Medicine Specialist (3)	Veterinary Food Inspection Specialist (3)	Practical Nursing Specialist (4)	Preventive Medicine Specialist (5)
	—	Medical Logistics Specialist (5)	Preventive Medicine Specialist (3)	Preventive Medicine Specialist (5)	Veterinary Food Inspection Specialist (5)
	—	—	Nutrition Care Specialist (3, 5)	Nutrition Care Specialist (5)	Ear, Nose and Throat Specialist (3)
	—	—	Practical Nursing Specialist (4)	Pharmacy Specialist (4)	—
	—	—	Medical Logistics Specialist (4)	Orthopedic Specialist (3)	—

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
	—	—	—	Eye Specialist (3)	—
	—	—	—	Radiology Specialist (5)	—
<90-80	Physical Therapy Specialist (4)	Cardiovascular Specialist (3)	Ear, Nose and Throat Specialist (4)	Practical Nursing Specialist (5)	Pharmacy Specialist (5)
	Practical Nursing Specialist (4)	Behavioral Health Specialist (3)	Animal Care Specialist (4)	Pharmacy Specialist (5)	Radiology Specialist (5)
	Biomedical Equipment Specialist (4)	—	Eye Specialist (4)	Veterinary Food Inspection Specialist (3)	Optical Laboratory Specialist (3)
Percent of authorized positions filled	**2015 Occupation (Skill level)**	**2016**	**2017**	**2018**	**2019**
	Cardiovascular Specialist (3)	—	Cardiovascular Specialist (4)	Ear, Nose and Throat Specialist (3)	—
	—	—	Behavioral Health Specialist (3)	—	—
	—	—	Biomedical Equipment Specialist (3)	—	—
	—	—	Optical Laboratory Specialist (3)	—	—
	—	—	Practical Nursing Specialist (3)	—	—
<80	Nutrition Care Specialist (5)	Biomedical Equipment Specialist (4)	Optical Laboratory Specialist (4)	Optical Laboratory Specialist (4)	—
	Cardiovascular Specialist (4)	Optical Laboratory Specialist (4)	—	Cardiovascular Specialist (4)	—

Legend: — = not applicable.

Source: GAO analysis of Army information. | GAO-21-337

Table 11: Shortages in Higher Skill Levels of Navy Active-Duty Enlisted Medical Occupations by Percent of Authorized Positions Filled, Fiscal Years 2015 - 2019

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
<95-90	Surface Force Independent Duty Corpsman (6)	Preventive Medicine Technician (8)	Respiratory Therapist (5)	Medical Laboratory Technician (6)	Advanced X-Ray Technician (5)
	Cardiovascular Technician (5)	Fleet Marine Force Reconnaissance Corpsman (6)	Dental Assistant (6)	Preventive Medicine Technician (6, 8)	Bio-Medical Equipment Technician (6)

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
	Orthopedic Technician (5)	Surface Force Independent Duty Corpsman (6, 7)	Medical Laboratory Technician (6)	Physical Therapy Technician (6)	Preventive Medicine Technician (6)
	—	—	Pharmacy Technician (7)	—	Deep Sea Diving Independent Duty Corpsman (8)
<90-80	Medical Deep Sea Diving Technician (5)	Surgical Technologist (5)	Urology Technician (5)	Surface Force Independent Duty Corpsman (6)	Dental Laboratory Technician (Basic) (6)
	Fleet Marine Force Reconnaissance Corpsman (6)	Preventive Medicine Technician (6, 7)	Orthopedic Technician (5)	Pharmacy Technician (6)	Pharmacy Technician (6)
	Preventive Medicine Technician (6, 7)	Pharmacy Technician (6)	Pharmacy Technician (6)	Preventive Medicine Technician (5)	Navy Drug and Alcohol Counselor Intern (7)
	Pharmacy Technician (6)	Hospital Corspman/Medical Care and Treatment, General (5)	Surgical Technologist (5)	Advanced X-Ray Technician (5)	Dental Laboratory Technician (Advanced) (7)
	Surgical Technologist (5)	Surface Force Independent Duty Corpsman (9)	Preventive Medicine Technician (5)	Surgical Technologist (5)	Surface Force Independent Duty Corpsman (6, 7)
	Dental Laboratory Technician (Basic) (5)	—	Surface Force Independent Duty Corpsman (6, 7, 9)	—	Surgical Technologist (5)
	Fleet Marine Force Reconnaissance Independent Duty Corpsman (5)	—	—	—	Medical Laboratory Technician (6)
	Dental Laboratory Technician (Advanced) (5)	—	—	—	—
<80	Surface Force Independent Duty Corpsman (5, 9)	Urology Technician (5)	Medical Deep Sea Diving Technician (5, 6)	Bio-Medical Equipment Technician (6, 8)	Fleet Marine Force Reconnaissance Independent Duty Corpsman (7, 8, 9)
	Medical Deep Sea Diving Technician (6)	Submarine Force Independent Duty Corpsman (5, 7)	Dental Hygienist (5)	Medical Laboratory Technician (5)	Dental Laboratory Technician (Basic) (5)
	Fleet Marine Force Reconnaissance Corpsman (5)	Optician (5, 6, 7)	Medical Laboratory Technician (5)	Deep Sea Diving Independent Duty Corpsman (5, 6)	Pharmacy Technician (5)
	Deep Sea Diving Independent Duty Corpsman (5, 6)	Dental Hygienist (5)	Deep Sea Diving Independent Duty Corpsman (5, 6)	Aerospace Physiology Technician (5, 6, 7)	Navy Drug and Alcohol Counselor Intern (5,6)

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
	Radiation Health Technician (5, 7)	Preventive Medicine Technician (5)	Dental Laboratory Technician (Advanced) (6, 7)	Submarine Force Independent Duty Corpsman (5, 7)	Hospital Corspman/Medical Care and Treatment, General (8, 9)
	Respiratory Therapist (5)	Behavioral Health Technician (5)	Dental Laboratory Technician (Basic) (5)	Dental Laboratory Technician (Advanced) (6, 7)	Optician (5, 6)
	Bio-Medical Equipment Technician (6, 8)	Pharmacy Technician (5)	Pharmacy Technician (5)	Fleet Marine Force Reconnaissance Independent Duty Corpsman (5, 6)	Submarine Force Independent Duty Corpsman (5, 7)
	Medical Laboratory Technician (5)	Hospital Corspman/Medical Care and Treatment, General (6, 7, 8, 9)	Behavioral Health Technician (5)	Hospital Corspman/Medical Care and Treatment, General (8, 9)	Dental Laboratory Technician (Advanced) (6)
	Aerospace Physiology Technician (5, 6, 7)	Advanced X-Ray Technician (5)	Optician (5, 6, 7)	Radiation Health Technician (5, 7)	Bio-Medical Equipment Technician (8)
	Preventive Medicine Technician (5, 8)	Physical Therapy Technician (5)	Bio-Medical Equipment Technician (6, 8)	Aerospace Medical Technician (5)	Urology Technician (5)
	Advanced X-Ray Technician (5)	Medical Deep Sea Diving Technician (5, 6)	Field Medical Service Technician (7, 8)	Dental Laboratory Technician (Basic) (5)	Preventive Medicine Technician (7)
	Pharmacy Technician (5, 7)	Aerospace Medical Technician (5)	Preventive Medicine Technician (6, 7)	Field Medical Service Technician (7, 8)	Aerospace Physiology Technician (6)
	Optician (5, 6)	Aerospace Physiology Technician (5, 6, 7)	Fleet Marine Force Reconnaissance Independent Duty Corpsman (5, 6)	Dental Hygienist (5)	Deep Sea Diving Independent Duty Corpsman (5, 6)
	Physical Therapy Technician (5)	Medical Laboratory Technician (5)	Radiation Health Technician (5, 7)	Surface Force Independent Duty Corpsman (5, 7)	Medical Deep Sea Diving Technician (5, 6)
	Urology Technician (5)	Dental Laboratory Technician (Basic) (5, 6)	Aerospace Medical Technician (5)	Pharmacy Technician (5)	Surface Force Independent Duty Corpsman (5)
	Behavioral Health Technician (5)	Bio-Medical Equipment Technician (6, 8)	Aerospace Physiology Technician (5, 6, 7)	Preventive Medicine Technician (7)	Fleet Marine Force Reconnaissance Corpsman (5)
	Dental Hygienist (5)	Respiratory Therapist (5)	Surface Force Independent Duty Corpsman (5)	Behavioral Health Technician (5)	Aerospace Medical Technician (5)
	Aerospace Medical Technician (5)	Deep Sea Diving Independent Duty Corpsman (5, 6)	Fleet Marine Force Reconnaissance Corpsman (5)	Medical Deep Sea Diving Technician (5, 6)	Field Medical Service Technician (7, 8)

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
	Dental Laboratory Technician (Basic) (6)	Dental Assistant (6)	Hospital Corspman/Medical Care and Treatment, General (8, 9)	Fleet Marine Force Reconnaissance Corpsman (5)	Dental Hygienist (5)
	Fleet Marine Force Reconnaissance Independent Duty Corpsman (6)	Fleet Marine Force Reconnaissance Independent Duty Corpsman (5, 6)	Advanced X-Ray Technician (5)	Optician (5, 6)	Medical Laboratory Technician (5)
	Submarine Force Independent Duty Corpsman (5, 7)	Radiation Health Technician (5, 7)	Submarine Force Independent Duty Corpsman (5, 7)	—	Radiation Health Technician (5, 6, 7)
	Dental Laboratory Technician (Advanced) (6, 7)	Fleet Marine Force Reconnaissance Corpsman (5)	—	—	Behavioral Health Technician (5)
	Hospital Corspman/Medical Care and Treatment, General (5, 6, 7, 8, 9)	Surface Force Independent Duty Corpsman (5)	—	—	—
	—	Dental Laboratory Technician (Advanced) (6, 7)	—	—	—

Legend: — = not applicable.

Source: GAO analysis of Navy information. | GAO-21-337

Note: We limited our analysis to Navy occupations with 50 or more total authorizations in each fiscal year.

Table 12: Shortages in Higher Skill Levels of Air Force Active-Duty Enlisted Medical Occupations by Percent of Authorized Positions Filled, Fiscal Years 2015 - 2019

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
<95-90	Pharmacy (9)	Aerospace & Operational Physiology (7)	Medical Laboratory (7)	Pharmacy (5, 7)	Cardiopulmonary Lab (7)
	Surgical Service (5)	Cardiopulmonary Lab (7)	Aerospace Medical Service (5)	Diagnostic Imaging (9)	Optometry (5)
	Medical Materiel (7)	Medical Materiel (7)	Pharmacy (7)	Optometry (5)	Health Services Management (5)
	Optometry (5)	Optometry (5)	Surgical Service (7)	Medical Laboratory (5)	Surgical Service (5)
	Health Services Management (7)	Bioenvironmental Engineering (9)	Physical Medicine (5)	Public Health (9)	Pharmacy (7)

Percent of authorized positions filled	2015 Occupation (Skill level)	2016	2017	2018	2019
	—	—	Bioenvironmental Engineering (9)	—	Medical Laboratory (9)
	—	—	Public Health (9)	—	—
	—	—	Cardiopulmonary Lab (7)	—	—
	—	—	Health Services Management (7)	—	—
<90-80	Mental Health Services (7)	Surgical Service (5)	Aerospace & Operational Physiology (5, 9)	Mental Health Services (5, 7)	Aerospace & Operational Physiology (5, 7)
	Medical Laboratory (7)	Public Health (9)	Surgical Service (5)	Health Services Management (5, 9)	Physical Medicine (5)
	Bioenvironmental Engineering (9)	Aerospace & Operational Physiology (5)	Optometry (5)	Biomedical Equipment Maintenance (7)	Aerospace Medical Service (5)
	Aerospace & Operational Physiology (5)	Health Services Management (5)	Diet Therapy (7)	Aerospace Medical Service (5)	Mental Health Services (5, 7)
	Public Health (9)	Medical Laboratory (7)	Health Services Management (5)	Aerospace & Operational Physiology (7)	—
	Optometry (7)	Mental Health Services (7)	Mental Health Services (7)	Surgical Service (5)	—
	Health Services Management (5)	—	—	Physical Medicine (5)	—
<80	Mental Health Services (5)	Medical Materiel (9)	Medical Laboratory (9)	Medical Laboratory (9)	Diet Therapy (9)
	—	Mental Health Services (5)	Mental Health Services (5)	Aerospace & Operational Physiology (5)	Surgical Service (9)
	—	Pharmacy (9)	—	—	Mental Health Services (9)

Legend: — = not applicable.

Source: GAO analysis of Air Force information. | GAO-21-337

Appendix VI: Military Department Active-Duty Selective Retention Bonus Expenditures and Recipients, Fiscal Years 2015 – 2019

This appendix presents the military departments' total active-duty retention bonus expenditures and the number of recipients, by occupation, for fiscal years 2015 through 2019. Tables 13, 14, and 15 provide this information for each military department.

Table 13: Army Active-Duty Total Selective Retention Bonus Expenditures and Recipients, by Enlisted Medical Occupation, Fiscal Years 2015 - 2019

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019
Biomedical Equipment Specialist	219,100 (35)	128,100 (23)	57,800 (10)	—	219,800 (29)
Orthopedic Specialist	54,200 (8)	20,600 (4)	102,400 (14)	46,100 (6)	—
Practical Nursing Specialist	672,000 (103)	820,800 (112)	1,466,700 (125)	2,515,000 (137)	2,653,500 (159)
Operating Room Specialist	—	—	242,600 (56)	—	—
Physical Therapy Specialist	59,100 (12)	79,400 (15)	289,300 (49)	219,500 (22)	188,300 (23)
Optical Laboratory Specialist	—	21,600 (3)	—	—	—
Medical Logistics Specialist	—	—	5,100 (1)	7,800 (1)	—
Medical Laboratory Specialist	—	—	725,400 (93)	320,500 (36)	688,000 (154)
Occupational Therapy Specialist	21,600 (3)	22,300 (3)	250,600 (16)	54,800 (2)	—

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019
Nutrition Care Specialist	—	3,300 (1)	—	—	526,400 (54)
Cardiovascular Specialist	—	—	121,200 (8)	151,400 (7)	70,100 (3)
Radiology Specialist	—	—	—	94,600 (10)	—
Pharmacy Specialist	—	—	—	192,500 (26)	182,100 (41)
Veterinary Food Inspection Specialist	22,500 (1)	173,900 (38)	665,700 (124)	563,900 (74)	—
Preventive Medicine Specialist	102,000 (24)		391,900 (86)	306,300 (40)	38,200 (1)
Animal Care Specialist	75,400 (20)	145,600 (28)	445,900 (84)	15,400 (4)	—
Ear, Nose and Throat Specialist	14,800 (3)	16,500 (3)	39,300 (4)	10,300 (1)	—
Respiratory Specialist	120,000 (21)	85,600 (12)	141,600 (19)	68,600 (7)	—
Health Care Specialist	121,000 (17)	88,300 (12)	10,661,000 (1,329)	19,070,800 (1,766)	8,062,500 (1,132)
Behavioral Health Specialist	—	—	578,200 (84)	1,214,500 (150)	405,400 (70)
Eye Specialist	—	35,400 (4)	298,100 (19)	240,200 (14)	—
Total	**1,481,700 (247)**	**1,641,400 (258)**	**16,482,800 (2,121)**	**25,092,200 (2,303)**	**13,034,300 (1,666)**

Legend: — = not applicable.

Source: GAO analysis of Army information. | GAO-21-337

Table 14: Navy Active-Duty Total Selective Retention Bonus Expenditures and Recipients, by Enlisted Medical Occupation, Fiscal Years 2015 - 2019

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019
Search and Rescue Medical Technician	49,261 (6)	76,615 (8)	98,238 (12)	252,679 (14)	307,911 (15)
Submarine Force Independent Duty Corpsman	331,293 (21)	300,493 (20)	31,387 (8)	181,741 (18)	222,036 (19

Occupation	2015 Dollars (Recipients)	2016	2017	2018	2019
Fleet Marine Force Reconnaissance Independent Duty Corpsman	371,388 (16)	292,128 (12)	198,154 (13)	470,209 (23)	397,108 (18)
Surface Force Independent Duty Corpsman	2,728,962 (123)	1,683,577 (96)	899,900 (65)	1,671,988 (116)	2,515,479 (117)
Fleet Marine Force Reconnaissance Corpsman	396,153 (24)	399,103 (24)	236,244 (13)	282,113 (16)	337,406 (13)
Pharmacy Technician	—	—	—	64,365 (10)	105,158 (17)
Surgical Technologist	—	—	—	162,957 (30)	329,787 (46)
Medical Deep Sea Diving Technician	129,116 (9)	47,564 (6)	106,744 (15)	104,882 (8)	390,921 (20)
Deep Sea Diving Independent Duty Corpsman	48,194 (3)	92,985 (5)	137,090 (8)	168,407 (12)	73,989 (5)
Medical Laboratory Technician	131,130 (20)	103,178 (17)	68,851 (20)	1,079,965 (119)	794,373 (66)
Respiratory Therapist	58,627 (7)	117,754 (11)	162,931 (14)	250,095 (25)	241,606 (15)
Dental Hygienist	5,409 (1)	13,890 (2)	20,303 (3)	41,740 (5)	30,000 (2)
Dental Laboratory Technician (Advanced)	30,854 (4)	14,114 (2)	2,989 (1)	208,661 (16)	53,998 (3)
Total	**4,280,387 (234)**	**3,141,402 (203)**	**1,962,831 (172)**	**4,939,803 (412)**	**5,799,772 (356)**

Legend: — = not applicable.

Source: GAO analysis of Navy information. | GAO-21-337

Table 15: Air Force Active-Duty Total Selective Retention Bonus Expenditures, by Enlisted Medical Occupation, Fiscal Years 2015 - 2019

Occupation	2015 Dollars	2016	2017	2018	2019
Health Services Management	3,684	863,275	680,740	666,110	440,887
Medical Materiel	18,242	6,634	—	—	—
Biomedical Equipment Maintenance	—	—	—	663,740	1,468,081

Occupation	2015 Dollars	2016	2017	2018	2019
Bioenvironmental Engineering	63,668	51,522	1,493	15,107	21,108
Mental Health Services	1,205,106	1,352,768	1,747,686	1,624,373	1,496,128
Public Health	196,823	171,437	76,220	17,522	—
Cardiopulmonary Lab	89,662	56,390	102,417	11,656	424,373
Physical Medicine	—	—	—	—	722,019
Aerospace Medical Service	319,037	3,615,938	5,617,105	7,508,221	9,658,496
Surgical Service	13,137	485,286	548,193	814,594	1,494,797
Aerospace & Operational Physiology	—	944,884	247,437	184,122	345,335
Pharmacy	124,799	1,124,174	726,475	685,482	445,622
Diagnostic Imaging	92,086	390,854	711,044	646,268	563,677
Medical Laboratory	52,464	22,877	2,641,865	3,359,407	3,908,040
Optometry	—	79,399	106,095	52,133	50,690
Dental Services	121,568	1,924,746	1,533,032	1,296,534	1,575,097
Total	**2,300,276**	**11,090,185**	**14,739,801**	**17,545,269**	**22,614,351**

Legend: — = not applicable.

Source: GAO analysis of Air Force information. | GAO-21-337

Note: We were unable to determine the number of bonus recipients by occupation in each fiscal year because, according to officials, bonus agreements may be executed in one fiscal year and paid out in the following years.

Appendix VII: Comments from the Department of Defense

THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

Ms. Brenda S. Farrell
Director, Defense Capabilities Management
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Ms. Farrell,

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) Draft Report, GAO-21-337SU, "DEFENSE HEALTH CARE: Actions Needed to Define and Sustain Wartime Medical Skills for Enlisted Personnel," (GAO Code 103959).

The DoD concurs with the draft report as provided. Enclosed are the consolidated set of DoD responses to the GAO recommendations. My point of contact is Ms. Katherine M. Lee. Ms. Lee may be reached at (703) 681-6133, or katherine.m.lee34.civ@mail.mil.

Sincerely,

ADIRIM.TERRY.A.1523847127 Digitally signed by ADIRIM.TERRY.A.1523847127 Date: 2021.05.28 13:49:18 -04'00'

Terry Adirim, M.D., M.P.H., M.B.A.
Acting

Enclosure
As stated

GOVERNMENT ACCOUNTABILITY OFFICE (GAO) DRAFT REPORT DATED MARCH 31, 2021
GAO-21-337SU (GAO CODE 103959)

"DEFENSE HEALTH CARE: ACTIONS NEEDED TO DEFINE AND SUSTAIN WARTIME MEDICAL SKILLS FOR ENLISTED PERSONNEL"

DEPARTMENT OF DEFENSE (DOD) COMMENTS TO THE GAO RECOMMENDATION

RECOMMENDATION 1: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence (MEDCoE), takes corrective action to define wartime medical skills for enlisted medical subspecialties with an expeditionary role.

DoD RESPONSE: Concur, after thorough analysis, MEDCoE identifies and defines specialty-specific operational skills through total task inventories, and critical task and site selection boards (CTSSBs). A CTSSB is the formal process used by proponent schools to validate tasks, training locations, and address emerging doctrine requirements for training. Board members review each military occupational specialty (MOS) along with the associated additional skill identifiers when applicable. CTSSBs have MOS representation from US Army Forces Command (FORSCOM) across all components to analyze and validate critical tasks that support the operational force. CTSSBs occur on a 3-year review cycle. There are 11 MOSs currently scheduled over the next 12 to 18 months. The CTSSB for Health Care Specialist, along with its associated subspecialties of Critical Care Flight Paramedic and Immunization and Allergy Medical Sergeant, was completed during 8 - 19 February 2021. The CTSSB for Biomedical Equipment Specialist, and the associated subspecialty Computer Axial Tomography Scan, is scheduled for 1 - 5 November 2021. All MOS CTSSBs, to include the Patient Administration Specialist, will be scheduled by 31 December 2022.

RECOMMENDATION 2: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), takes corrective action to define and implement wartime medical skills for enlisted medical subspecialties with an expeditionary role.

DoD RESPONSE: Concur. The Air Force Medical Service (AFMS) agrees to take corrective action to define and implement wartime medical skills for enlisted medical subspecialties with an expeditionary role. These skills will be developed by Career Field Managers (CFM) and incorporated into existing Comprehensive Medical Readiness Program (CMRP) checklists or new checklists created, as appropriate.

RECOMMENDATION 3: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), establishes guidance that requires the development of wartime medical skills for current and future enlisted medical subspecialties with an expeditionary role.

DoD RESPONSE: Concur. The Air Force Medical Readiness Agency (AFMRA) will establish guidance that requires the development of wartime medical skills for current and future enlisted medical subspecialties with an expeditionary role within Air Force Instruction (AFI) 41-106 Air Force Medical Readiness Program. An interim change to the AFI is currently under development.

RECOMMENDATION 4: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence (MEDCoE), takes corrective action to fully incorporate joint wartime medical skills into Army wartime medical skills checklists.

DoD RESPONSE: Concur. MEDCoE will ensure that all enlisted specialties with approved joint knowledge skills and abilities are incorporated into skill validation checklists. Joint Tactical Combat Casualty Care curriculum update is a recent example of joint skills integration across the force. Skill validation checklists are completed at the end of each MOS CTSSB as scheduled in Recommendation 1 by 31 December 2022.

RECOMMENDATION 5: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), takes corrective action to fully incorporate joint wartime medical skills into Air Force wartime medical skills checklists.

DoD RESPONSE: Concur. AFMRA will incorporate joint wartime medical skills into Air Force Comprehensive Medical Readiness Program (AF CMRP) checklists and include language to this effect in the ongoing interim change to AFI 41-106, Air Force Medical Readiness Program.

RECOMMENDATION 6: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, AFMRA, issues guidance requiring the incorporation of joint wartime medical skills into Air Force checklists.

DoD RESPONSE: Concur. AFMRA will provide guidance in the ongoing interim change to AFI 41-106, Air Force Medical Readiness Program to Career Field Managers (CFM) to incorporate joint wartime medical skills into Air Force Comprehensive Medical Readiness Program (AF CMRP) checklists.

RECOMMENDATION 7: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), takes corrective action to review and update outdated wartime medical skills checklists for enlisted medical occupations.

DoD RESPONSE: Concur. AFMRA will take corrective action to review and update outdated Comprehensive Medical Readiness Program (CMRP) checklists for enlisted medical occupations. The CMRP Committee is currently restructuring tracking processes to meet this recommendation.

RECOMMENDATION 8: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Training and Doctrine Command (TRADOC), updates its guidance to require the specification of acceptable methods of sustainment training for wartime medical skills for enlisted medical personnel.

DoD RESPONSE: Concur. The critical wartime medical skills are trained and sustained using numerous methods across multiple platforms. Recommended platforms, and suggested training environments, are specified in condition statements associated with approved Individual Critical Task Lists (ICTL). Sustainment training is based on the level of experience and Soldier skill. The spectrum of approved sustainment training platforms include, but are not limited to institutional training, unit training, health care provider workload, medical simulations, and medical skills sustainment programs within military treatment facilities and military-civilian partnerships. Sustainment platforms and conditions statements are identified as part of the skills validation during critical task and site selection boards (CTSSBs). All MOS CTSSBs will be scheduled by 31 December 2022.

RECOMMENDATION 9: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence (MEDCoE), incorporate findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

DoD RESPONSE: Concur. Upon publication of DoD's policy on highly perishable and mission-essential medical skills, MEDCoE will incorporate guidance into future training and doctrine as sustainment training frequency is a critical part of the ICTL for each MOS. Army Medicine is implementing a clinical readiness assessment process for wartime medical skills maintenance; this will require an assessment that identifies those medical readiness skills that will be acquired in a just-in-time manner immediately before assignment to the operational force. A capabilities based assessment (CBA) is being completed now to identify potential solutions across the DOTmLPF-P (Doctrine, Organization, Training, "m"ateriel, Leadership and Education, Personnel, Facilities, and Policy) and "M"ateriel domains to determine medical simulation requirements to incorporate medical training across all roles of care. In addition, the Army Medicine Campaign Plan 2020 prescribes lines of effort (LOE). LOE 2 Build Readiness (Shaping) and LOE 5 Strengthen Alliances & Partnerships (Shaping) focus on improving operational readiness to enhance the Army's responsive medical capabilities. Strategic Medical Asset Readiness Training rotations are 2 to 3 weeks in duration and provide enlisted medical personnel the opportunity to obtain "hands-on" skills sustainment opportunities alongside their civilian counterparts in premier trauma centers and hospitals throughout the U.S. Target audience is enlisted Service members from operational units with limited exposure to skills within the military hospital setting necessary to maintain critical wartime skills required for overseas contingency operations. CBA to be completed by 31 May 2021 with follow on development of the identified capabilities document.

RECOMMENDATION 10: The GAO recommends that the Secretary of the Navy should ensure that the Surgeon General of the Navy incorporate findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

DoD RESPONSE: Concur. The Surgeon General of the Navy implemented ongoing assessment of enlisted proficiency though the establishment of the Naval Medical Readiness Checklists (NMRC). The Navy Knowledge, Skills, and Abilities (NKSA) Program Office leads the coordination efforts with the Combat Casualty Care Knowledge, Skills, and Abilities (KSA) Pilot and other Joint initiatives examining opportunities for enlisted occupations. Navy has been working with the Defense Health Agency (DHA) for military medical treatment facility (MTF) solutions, and external partnerships, that maximize the opportunities to maintain skills. The NKSA Proficiency dashboard design ensures members are fully aware of training opportunities and frequencies that will heighten wartime skills to meet mission requirements. Navy Medicine understands the challenges of placing individuals in locations that offer the highest potential opportunities for mission-essential skills.

RECOMMENDATION 11: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), incorporate findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

DoD RESPONSE: Concur. AFMRA will incorporate future findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

RECOMMENDATION 12: The GAO recommends that the Secretary of the Army should ensure that the Surgeon General of the Army requires the consistent tracking of training on wartime medical skills for enlisted medical personnel.

DoD RESPONSE: Concur. Army Medicine is conducting reviews of all enlisted ICTL to maintain the critical wartime medical skills for health care providers. The implementation of these critical wartime medical skills improve and maintain medical readiness across the force. The critical wartime medical skills are trained and sustained across multiple platforms to include institutional training, unit training, health care provider workload, medical simulations, and medical skills sustainment programs within Military Treatment Facilities and Military-Civilian partnerships. Along with the Digital Training Management System, the different methods of capturing training completion for enlisted medical personnel include Competency Assessment Folders, and other local tracking means. The Office of the Surgeon General (OTSG) and US Army Medical Command is exploring the feasibility of developing a line of effort with Army Vantage for consistent tracking of those critical wartime medical skills and experiences for all medical personnel to capture data from multiple systems. This initiative will aggregate the completion of training on wartime medical skills into a dashboard for medical personnel. This functionality will enable us to better assess and address gaps in training. We anticipate this recommendation will be fully implemented by 1 January 2023.

RECOMMENDATION 13: The GAO recommends that the Secretary of the Army should ensure that the Surgeon General of the Army establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets.

DoD RESPONSE: Concur. Army Medicine utilizes various platforms such as MTFs, training partnerships with civilian hospitals, medical simulations, and unit training to sustain wartime medical skills. As we assess the contributions of each of these training platforms to sustain enlisted personnel wartime medical skills, our efforts within Army Medicine to aggregate the completion of wartime medical skills across multiple data systems will better enable us to track performance goals and targets for our enlisted medical occupations. Currently, Army Medicine utilizes the Individual Clinical Experience Reporting Tool to assess the contributions of MTFs to generate operational medical readiness by occupational specialty. Because the Individual Clinical Experience Reporting Tool is limited to physicians and nurses, we developed a manual capture method for enlisted medical personnel within the MTFs to capture their clinical workload data and the alignment of that data to the completion of wartime critical skills. The consolidation of multiple data system into a single dashboard will better enable us to track performance towards completion. We anticipate this recommendation will be fully implemented by 1 January 2023.

RECOMMENDATION 14: The GAO recommends that the Secretary of the Navy should ensure that the Surgeon General of the Navy establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets.

DoD RESPONSE: Concur. The development of the NMRC evolved from the Joint Knowledge, Skills, and Abilities baseline information. Navy has refined the metrics through subject matter expert reviews to establish specific goals and targets supported by current, complete, and repeatable data. Current efforts focus on validating data and providing reinforcing metrics that will improve member awareness.

RECOMMENDATION 15: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets.

DoD RESPONSE: Concur. The Air Force Medical Readiness Agency (AFMRA), will establish more specific performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and will continue to use current tracking methods through the Medical Readiness Decision Support System (MRDSS), the Air Force Medical Service (AFMS) system of record for tracking readiness training, to track performance toward achieving the goals and targets.

RECOMMENDATION 16: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), develops metrics to assess the contributions of MTF workload to sustaining wartime medical skills that include the medical care provided by enlisted medical personnel.

DoD RESPONSE: Concur.

RECOMMENDATION 17: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), develops the required inventory of civilian partnerships to include all partnerships in which enlisted medical personnel may participate.

DoD RESPONSE: Concur.

RECOMMENDATION 18: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), develop a process to identify opportunities to streamline or add military-civilian training partnerships.

DoD RESPONSE: Concur.

RECOMMENDATION 19: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), develops metrics to assess the contributions of civilian partnerships to sustaining wartime medical skills that include the medical care provided by enlisted medical personnel.

DoD RESPONSE: Concur.

RECOMMENDATION 20: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), performs the proposed assessment of available simulation programs, demand for them, and gaps in clinical training and simulation requirements.

DoD RESPONSE: Concur.

RECOMMENDATION 21: The GAO recommends that the Secretary of the Army should ensure the Surgeon General develops and implements a consistent clinical readiness assessment process for wartime medical skills maintenance to identify and address gaps in training.

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RECOMMENDATION 24: The GAO recommends that the Secretary of the Army should develop annual retention goals, by skill level, for enlisted medical personnel.

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Text of Appendix VII: Comments from the Department of Defense

Page 1

Ms. Brenda S. Farrell

Director, Defense Capabilities Management

U.S. Government Accountability Office 441 G Street NW

Washington, DC 20548

Dear Ms. Farrell,

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) Draft Report, GAO-21-337SU, “DEFENSE HEALTH CARE: Actions Needed to Define and Sustain Wartime Medical Skills for Enlisted Personnel,” (GAO Code 103959).

The DoD concurs with the draft report as provided. Enclosed are the consolidated set of DoD responses to the GAO recommendations. My point of contact is Ms. Katherine M. Lee.

Ms. Lee may be reached at (703) 681-6133, or katherine.m.lee34.civ@mail.mil.

Sincerely,

Terry Adirim, M.D., M.P.H., M.B.A. Acting

Enclosure As stated

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GOVERNMENT ACCOUNTABILITY OFFICE (GAO) DRAFT REPORT DATED MARCH 31, 2021 GAO-21-337SU (GAO CODE 103959), “DEFENSE HEALTH CARE: ACTIONS NEEDED TO DEFINE AND SUSTAIN WARTIME MEDICAL SKILLS FOR ENLISTED PERSONNEL”

DEPARTMENT OF DEFENSE (DOD) COMMENTS TO THE GAO RECOMMENDATION

RECOMMENDATION 1: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence (MEDCoE), takes corrective action to define wartime medical skills for enlisted medical subspecialties with an expeditionary role.

DoD RESPONSE: Concur, after thorough analysis, MEDCoE identifies and defines specialty-specific operational skills through total task inventories, and critical task and site selection boards (CTSSBs). A CTSSB is the formal process used by proponent schools to validate tasks, training locations, and address emerging doctrine requirements for training. Board members review each military occupational specialty (MOS) along with the associated additional skill identifiers when applicable. CTSSBs have MOS representation from US Army Forces Command (FORSCOM) across all components to analyze and validate critical tasks that support the operational force. CTSSBs occur on a 3-year review cycle. There are 11 MOSs currently scheduled over the next 12 to 18 months. The CTSSB for Health Care Specialist, along with its associated subspecialties of Critical Care Flight Paramedic and Immunization and Allergy Medical Sergeant, was completed during 8 - 19 February 2021. The CTSSB for Biomedical Equipment Specialist, and the associated subspecialty Computer Axial Tomography Scan, is scheduled for 1 - 5 November 2021. All MOS CTSSBs, to include the Patient Administration Specialist, will be scheduled by 31 December 2022.

RECOMMENDATION 2: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), takes corrective action to define and implement wartime medical skills for enlisted medical subspecialties with an expeditionary role.

DoD RESPONSE: Concur. The Air Force Medical Service (AFMS) agrees to take corrective action to define and implement wartime medical skills for enlisted medical subspecialties with an expeditionary role. These skills will be developed by Career Field Managers (CFM) and incorporated into existing Comprehensive Medical Readiness Program (CMRP) checklists or new checklists created, as appropriate.

RECOMMENDATION 3: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), establishes guidance that requires the development of wartime medical skills

for current and future enlisted medical subspecialties with an expeditionary role.

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DoD RESPONSE: Concur. The Air Force Medical Readiness Agency (AFMRA) will establish guidance that requires the development of wartime medical skills for current and future enlisted medical subspecialties with an expeditionary role within Air Force Instruction (AFI) 41-106 Air Force Medical Readiness Program. An interim change to the AFI is currently under development.

RECOMMENDATION 4: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence (MEDCoE), takes corrective action to fully incorporate joint wartime medical skills into Army wartime medical skills checklists.

DoD RESPONSE: Concur. MEDCoE will ensure that all enlisted specialties with approved joint knowledge skills and abilities are incorporated into skill validation checklists. Joint Tactical Combat Casualty Care curriculum update is a recent example of joint skills integration across the force. Skill validation checklists are completed at the end of each MOS CTSSB as scheduled in Recommendation 1 by 31 December 2022.

RECOMMENDATION 5: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), takes corrective action to fully incorporate joint wartime medical skills into Air Force wartime medical skills checklists.

DoD RESPONSE: Concur. AFMRA will incorporate joint wartime medical skills into Air Force Comprehensive Medical Readiness Program (AF CMRP) checklists and include language to this effect in the ongoing interim change to AFI 41-106, Air Force Medical Readiness Program.

RECOMMENDATION 6: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, AFMRA, issues guidance requiring the incorporation of joint wartime medical skills into Air Force checklists.

DoD RESPONSE: Concur. AFMRA will provide guidance in the ongoing interim change to AFI 41-106, Air Force Medical Readiness Program to Career

Field Managers (CFM) to incorporate joint wartime medical skills into Air Force Comprehensive Medical Readiness Program (AF CMRP) checklists.

RECOMMENDATION 7: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), takes corrective action to review and update outdated wartime medical skills checklists for enlisted medical occupations.

DoD RESPONSE: Concur. AFMRA will take corrective action to review and update outdated Comprehensive Medical Readiness Program (CMRP) checklists for enlisted medical occupations. The CMRP Committee is currently restructuring tracking processes to meet this recommendation.

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RECOMMENDATION 8: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Training and Doctrine Command (TRADOC), updates its guidance to require the specification of acceptable methods of sustainment training for wartime medical skills for enlisted medical personnel.

DoD RESPONSE: Concur. The critical wartime medical skills are trained and sustained using numerous methods across multiple platforms. Recommended platforms, and suggested training environments, are specified in condition statements associated with approved Individual Critical Task Lists (ICTL). Sustainment training is based on the level of experience and Soldier skill. The spectrum of approved sustainment training platforms include, but are not limited to institutional training, unit training, health care provider workload, medical simulations, and medical skills sustainment programs within military treatment facilities and military-civilian partnerships. Sustainment platforms and conditions statements are identified as part of the skills validation during critical task and site selection boards (CTSSBs). All MOS CTSSBs will be scheduled by 31 December 2022.

RECOMMENDATION 9: The GAO recommends that the Secretary of the Army should ensure that the Commanding General, U.S. Army Medical Center of Excellence (MEDCoE), incorporate findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

DoD RESPONSE: Concur. Upon publication of DoD's policy on highly perishable and mission-essential medical skills, MEDCoE will incorporate

guidance into future training and doctrine as sustainment training frequency is a critical part of the ICTL for each MOS. Army Medicine is implementing a clinical readiness assessment process for wartime medical skills maintenance; this will require an assessment that identifies those medical readiness skills that will be acquired in a just-in-time manner immediately before assignment to the operational force. A capabilities based assessment (CBA) is being completed now to identify potential solutions across the DOTmLPF-P (Doctrine, Organization, Training, "m"ateriel, Leadership and Education, Personnel, Facilities, and Policy) and "M"ateriel domains to determine medical simulation requirements to incorporate medical training across all roles of care. In addition, the Army Medicine Campaign Plan 2020 prescribes lines of effort (LOE). LOE 2 Build Readiness (Shaping) and LOE 5 Strengthen Alliances & Partnerships (Shaping) focus on improving operational readiness to enhance the Army's responsive medical capabilities. Strategic Medical Asset Readiness Training rotations are 2 to 3 weeks in duration and provide enlisted medical personnel the opportunity to obtain "hands-on" skills sustainment opportunities alongside their civilian counterparts in premier trauma centers and hospitals throughout the U.S. Target audience is enlisted Service members from operational units with limited exposure to skills within the military hospital setting necessary to maintain critical wartime skills required for overseas contingency operations. CBA to be completed by 31 May 2021 with follow on development of the identified capabilities document.

RECOMMENDATION 10: The GAO recommends that the Secretary of the Navy should ensure that the Surgeon General of the Navy incorporate findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

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DoD RESPONSE: Concur. The Surgeon General of the Navy implemented ongoing assessment of enlisted proficiency though the establishment of the Naval Medical Readiness Checklists (NMRC). The Navy Knowledge, Skills, and Abilities (NKSA) Program Office leads the coordination efforts with the Combat Casualty Care Knowledge, Skills, and Abilities (KSA) Pilot and other Joint initiatives examining opportunities for enlisted occupations. Navy has been working with the Defense Health Agency (DHA) for military medical treatment facility (MTF) solutions, and external partnerships, that maximize the opportunities to maintain skills. The NKSA Proficiency dashboard design ensures members are fully aware of training opportunities and frequencies that will heighten wartime skills to meet mission requirements. Navy Medicine

understands the challenges of placing individuals in locations that offer the highest potential opportunities for mission-essential skills.

RECOMMENDATION 11: The GAO recommends that the Secretary of the Air Force should ensure that the Surgeon General of the Air Force, in coordination with the Commander, Air Force Medical Readiness Agency (AFMRA), incorporate findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

DoD RESPONSE: Concur. AFMRA will incorporate future findings on skills degradation from DoD's project on highly perishable and mission-essential medical skills into its processes to identify appropriate training frequencies of wartime medical skills.

RECOMMENDATION 12: The GAO recommends that the Secretary of the Army should ensure that the Surgeon General of the Army requires the consistent tracking of training on wartime medical skills for enlisted medical personnel.

DoD RESPONSE: Concur. Army Medicine is conducting reviews of all enlisted ICTL to maintain the critical wartime medical skills for health care providers. The implementation of these critical wartime medical skills improve and maintain medical readiness across the force. The critical wartime medical skills are trained and sustained across multiple platforms to include institutional training, unit training, health care provider workload, medical simulations, and medical skills sustainment programs within Military Treatment Facilities and Military-Civilian partnerships. Along with the Digital Training Management System, the different methods of capturing training completion for enlisted medical personnel include Competency Assessment Folders, and other local tracking means. The Office of the Surgeon General (OTSG) and US Army Medical Command is exploring the feasibility of developing a line of effort with Army Vantage for consistent tracking of those critical wartime medical skills and experiences for all medical personnel to capture data from multiple systems. This initiative will aggregate the completion of training on wartime medical skills into a dashboard for medical personnel. This functionality will enable us to better assess and address gaps in training. We anticipate this recommendation will be fully implemented by 1 January 2023.

RECOMMENDATION 13: The GAO recommends that the Secretary of the Army should ensure that the Surgeon General of the Army establishes performance goals and targets for the completion of training on wartime medical skills for

enlisted medical occupations and tracks performance toward achieving the goals and targets.

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DoD RESPONSE: Concur. Army Medicine utilizes various platforms such as MTFs, training partnerships with civilian hospitals, medical simulations, and unit training to sustain wartime medical skills. As we assess the contributions of each of these training platforms to sustain enlisted personnel wartime medical skills, our efforts within Army Medicine to aggregate the completion of wartime medical skills across multiple data systems will better enable us to track performance goals and targets for our enlisted medical occupations. Currently, Army Medicine utilizes the Individual Clinical Experience Reporting Tool to assess the contributions of MTFs to generate operational medical readiness by occupational specialty. Because the Individual Clinical Experience Reporting Tool is limited to physicians and nurses, we developed a manual capture method for enlisted medical personnel within the MTFs to capture their clinical workload data and the alignment of that data to the completion of wartime critical skills. The consolidation of multiple data system into a single dashboard will better enable us to track performance towards completion. We anticipate this recommendation will be fully implemented by 1 January 2023.

RECOMMENDATION 14: The GAO recommends that the Secretary of the Navy should ensure that the Surgeon General of the Navy establishes performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets.

DoD RESPONSE: Concur. The development of the NMRC evolved from the Joint Knowledge, Skills, and Abilities baseline information. Navy has refined the metrics through subject matter expert reviews to establish specific goals and targets supported by current, complete, and repeatable data. Current efforts focus on validating data and providing reinforcing metrics that will improve member awareness.

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wartime medical skills for enlisted medical occupations and tracks performance toward achieving the goals and targets.

DoD RESPONSE: Concur. The Air Force Medical Readiness Agency (AFMRA), will establish more specific performance goals and targets for the completion of training on wartime medical skills for enlisted medical occupations and will continue to use current tracking methods through the Medical Readiness Decision Support System (MRDSS), the Air Force Medical Service (AFMS) system of record for tracking readiness training, to track performance toward achieving the goals and targets.

RECOMMENDATION 16: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), develops metrics to assess the contributions of MTF workload to sustaining wartime medical skills that include the medical care provided by enlisted medical personnel.

DoD RESPONSE: Concur.

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RECOMMENDATION 17: The GAO recommends that the Secretary of Defense should ensure the Director, Defense Health Agency (DHA), develops the required inventory of civilian partnerships to include all partnerships in which enlisted medical personnel may participate.

DoD RESPONSE: Concur.

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proposed assessment of available simulation programs, demand for them, and gaps in clinical training and simulation requirements.

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Appendix VIII: GAO Contact and Staff Acknowledgements

GAO Contact

Brenda S. Farrell at (202) 512-3604 or FarrellB@gao.gov

Staff Acknowledgements

In addition to the contact named above, Ryan D'Amore (Assistant Director), Adam Howell-Smith (Analyst in Charge), Pedro Almoguera, Jason Coates, Alexandra Gonzalez, Chad Hinsch, Jesse Jordan, Ron La Due Lake, Amie Lesser, and Lillian M. Yob made key contributions to this report.

Related GAO Products

Defense Health Care: Actions Needed to Determine the Required Size and Readiness of Operational Medical and Dental Forces. GAO-19-206. Washington, D.C.: February 21, 2019.

Defense Health Care: Additional Assessments Needed to Better Ensure an Efficient Total Workforce. GAO-19-102. Washington, D.C.: November 27, 2018.

Defense Health Care: DOD Should Demonstrate How Its Plan to Transfer the Administration of Military Treatment Facilities Will Improve Efficiency. GAO-19-53. Washington, D.C.: October 30, 2018.

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New Trauma Care System: DOD Should Fully Incorporate Leading Practices into Its Planning for Effective Implementation. GAO-18-300. Washington, D.C.: March 19, 2018.

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Military Personnel: Status of Accession, Retention, and End Strength for Military Medical Officers and Preliminary Observations Regarding Accession and Retention Challenges. GAO-09-469R. Washington, D.C.: April 16, 2009.

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