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Army Health System Support Planning

1. This change replaced the term "gender" with "sex" in accordance with Executive Order 14168.
2. A plus character (+) marks new material.
3. ATP 4-02.55, 08 August 2025, is changed as follows:

Change Version Page(s)	Change Description
page 4-14	Corrects text in paragraph 4-53.
page A-4	Corrects text in figure A-1.
page C-4	Corrects text in figure C-1.
page D-3	Corrects text in paragraph D-6.

4. An updated Authentication Page has amended the prior authentication reflected in the rear of this publication.

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Army Health System Support Planning

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Preface

Army Techniques Publication 4-02.55 provides guidance to the medical commander, medical planner, and command surgeon at all levels of command in planning Army Health System support. Users of Army Techniques Publication 4-02.55 must be familiar with unified land operations established in Army Doctrine Publication 3-0; the operations process as stated in Army Doctrine Publication 5-0; how Army forces conduct large-scale combat operations described in Field Manual 3-0; Army plans and orders production as promulgated in Field Manual 6-0; mission command systems of tactical units and the mission command process established in Army Doctrine Publication 6-0; Army Health System support described in Field Manual 4-02; and the Joint Health Services described in Joint Publication 4-02.

The principal audience for this publication is all medical commanders, command surgeons, and their staffs, and nonmedical commanders involved in medical planning.

Commanders, staffs, and subordinates ensure their decisions and actions comply with applicable United States, international, and in some cases, host-nation laws and regulations. Commanders at all levels ensure their Soldiers operate in accordance with the law of war and the rules of engagement.
(See Field Manual 6-27/MCTP 11-10C.).

This publication implements or is in consonance with the following North Atlantic Treaty Organization Standardization Agreements and American, British, Canadian, Australian, and New Zealand Publication 256, Coalition Health Interoperability Handbook.

TITLE	NATO STANAGs
Forward Aeromedical Evacuation—Allied Aeromedical Publication-1.5	2087
Allied Joint Doctrine for Medical Support—Allied Joint Publication-4.10	2228
The Medical Management of Chemical, Biological, Radiological, and Nuclear Casualties—Allied Medical Publication-7.1	2461
NATO Planning Guide for the Estimation of Chemical, Biological, Radiological and Nuclear (CBRN) Casualties—Allied Medical Publication-7.5	2553
Commander's Guide on Medical Support to Chemical, Biological, Radiological, and Nuclear (CBRN) Defensive Operations—Allied Medical Publication-7.6	2873
Aeromedical Evacuation—Allied Aeromedical Publication-1.1	3204

This publication uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the text and the glossary. For definitions shown in the text, the term is italicized and the number of the proponent publication follows the definition. Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

Army Techniques Publication 4-02.55 applies to the Active Army, Army National Guard or Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent for ATP 4-02.55 is the United States Army Medical Center of Excellence. The preparing agency for ATP 4-02.55 is the Directorate of Training and Doctrine, Doctrine Division. Send comments and recommendations on a Department of the Army Form 2028 (*Recommended Changes to Publications and Blank Forms*) to **Commander, United States Army Medical Center of Excellence, ATTN: MCCS-FD (Army Techniques Publication 4-02.55), 2377 Greeley Road, Building 4011, Suite D, JBSA Fort Sam Houston, Texas 78234-7731**; by e-mail to usarmy.jbsa.medical-coe.mbx.ameddcs-medical-doctrine@army.mil; all recommended changes should be keyed to the specific page, paragraph, and line number. A rationale for each proposed change is required to aid in the evaluation and adjudication of each comment.

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Introduction

Army Techniques Publication 4-02.55 updates Army Health System planning topics while adopting current terminology and concepts as necessary. The Army Health System is a complex system of interrelated and interdependent systems which provides a continuum of medical treatment from point of injury or wounding through successive roles of medical care and is inextricably linked to the Military Health System through the Defense Health Agency Role 4 Hospitals for the provision of definitive care as patients are evacuated to continental United States from Role 3 medical treatment facilities in theater.

The medical planner is able to provide the best possible Army Health System for all Army operations by carefully applying operational medicine doctrine and principles. The Army Health System provides support to forces deployed across the full range of military operations in all operational arrangements. The Army Health System is a complex system of highly synchronized, interrelated, and interdependent systems comprised of ten medical functions. The medical functions align with medical disciplines and specialty training with the capabilities required to provide state-of-the-art care to Soldiers regardless of where they are deployed or assigned.

Summary of changes include –

- Designating this publication as the proponent for patient estimate from FM 4-02.
- Aligning this publication with FM 3-0 and FM 4-0.
- Providing medical planning factors in six additional appendixes.

Army Techniques Publication 4-02.55 consists of four chapters and ten appendixes as follows:

Chapter 1 provides an overview of the characteristics of the Army Health System, its principles, functions, the role of medical care, and medical planning factors. It also discusses the fundamental aspects used by medical planners to determine the best possible Army Health System to support Army operations.

Chapter 2 describes the ten medical functions and how they are aligned with specific medical disciplines of health service support or force health protection tasks. It also provides the primary purposes of the functions to give the medical planner a planning reference point to work from.

Chapter 3 provides guidance for some of the unique complexity inherent to Army Health System planning. It also provides a brief review of and references the Army planning process and how it applies to Army Health System planning.

Chapter 4 discusses some of the many different and unique factors, terms, and computations the medical planner can use to develop the Army Health System support estimate.

Appendix A provides a detailed example of the Army Health System support estimate with planning considerations.

Appendix B provides an explanation of rate calculations and provides some of the more commonly used rate formulas.

Appendix C provides an example and guidance on the preparation of an Army Health System appendix to an operation order or operation plan.

Appendix D provides a methodology to manually calculate hospital bed requirements. It includes current and historical information to perform the calculations to assist in preparing the Army Health System support estimate.

Appendix E provides an example of Army health system unit capabilities for mission analysis and planning preparation of an Army healthy system appendix to an Operation order or Operational plan.

Appendix F depicts the allocation of medical capabilities, organized by unit type and operation to provide a quick reference for mission analysis and assist in planning preparation.

Appendix G provides medical and casualty evacuation capabilities to assist planners in determining capacity based on the number and type of vehicles available.

Appendix H provides a format for a medical situation report to convey a quick, consolidated medical status report as a snapshot instead of a full report.

Appendix I provides a format for the medical status report for hospitalization, disease, and issues having an impact on medical capability or health of the command.

Appendix J provides an overview of the medical capabilities and capacities of the United States Navy, Marine, and Air Force.

Based on doctrinal changes, terms for which Army Techniques Publication 4-02.55 is now the proponent have been added for the purpose of this publication. The glossary contains acronyms and defined terms. See Introductory Table -1 listed below for specific term changes.

Introductory Table-1

Term	*Remarks*
patient estimate	ATP 4-02.55 is now the proponent.
Legend: ATP Army Techniques Publication	

Chapter 1

Army Health System Support in Unified Land Operations

This chapter provides an overview of the characteristics of Army Health System (AHS), its principles, functions, the roles of medical care, and medical planning factors. It also discusses the fundamental aspects used by medical planners to determine the best possible AHS to support Army operations.

SECTION I – THE ROLE OF ARMY HEALTH SYSTEM

1-1. A characteristic of the AHS is the distribution of medical resources and capabilities to provide roles of medical care. Policy provides the framework from which the medical community derives the direction and identifies the requisite personnel, materiel, facilities, and information systems to promote, improve, conserve, or restore well-being.

DOCTRINE

1-2. The capstone doctrine for the United States Army doctrinal guidance and direction for conducting unified land operations is Army Doctrine Publication (ADP) 3-0. This has been augmented by Field Manual (FM) 3-0 which describes how the United States Army conducts its strategic roles in support of the joint force to shape the operational environment, prevent conflict, conduct large-scale combat operations, and consolidate gains.

1-3. The Army medical capstone doctrine is contained in FM 4-02. Other supporting medical doctrine is found in applicable Army Techniques Publication (ATP). This chapter provides the broad doctrinal guidance and philosophy for conducting AHS support in unified land operations.

ARMY HEALTH SYSTEM

1-4. The *Army Health System* is a component of the Military Health System that is responsible for operational management of the health service support and force health protection missions for training, predeployment, deployment, and postdeployment operations. Army Health System includes all mission support services performed, provided, or arranged by the Army Medical Department to support health service support and force health protection mission requirements for the Army and as directed, for joint, intergovernmental agencies, coalition, and multinational forces (FM 4-02). Although the Military Health System is an interrelated system which may share medical services, capabilities, and specialties among the United States (U.S.) Service components, it is not a joint mission command system. For information on joint health service support (HSS) refer to Joint Publication (JP) 4-02.

1-5. The AHS is a complex system of systems, divided into ten medical functions which align with medical disciplines. These systems are interrelated and interdependent and must be meticulously and continuously synchronized. The ten medical functions are: medical command and control (C2), medical treatment (organic and area support), hospitalization, medical evacuation (MEDEVAC) (to include medical regulating), dental services, preventive medicine, combat and operational stress control (COSC), veterinary services, medical logistics (to include blood management), and medical laboratory services (to include both clinical and environmental laboratories).

1-6. The medical planner aligns the right mix of medical skills across the ten medical functions to the type of military formation where the support can be found. Medical planners need to provide the commander with a composite sketch of what medical capabilities and capacities are available within their

area of operations (AO) and what medical capabilities are available elsewhere in the operational environment. These functions and their planning considerations are further described in Chapter 2.

PLANNING AND OPERATIONAL MEDICINE MISSION

1-7. Operational medicine plays a key role in developing and maintaining combat power. Its mission is to maintain the health of the Army and to conserve its fighting strength. Commanders need to retain acclimated and experienced personnel to perform their particular mission.

1-8. Planning is an essential element that facilitates the successful accomplishment of Army health system support. The medical planner, by carefully applying doctrine and principles, strives to provide the best possible AHS for all Army operations. Timely and comprehensive planning enhances the capability of medical units to provide effective AHS as a force multiplier and is a key factor in conserving combat power.

PRINCIPLES OF THE ARMY HEALTH SYSTEM

1-9. The six principles of the AHS (flexibility, conformity, mobility, continuity, proximity, and control) are the foundation-enduring fundamentals-upon which the delivery of health care in a field environment is founded. The principles guide medical planners in developing operational plans (OPLANs) which are effective, efficient, flexible, and executable. The AHS principles apply across all ten medical functions and are synchronized through medical C2 through close coordination and synchronization of all deployed medical assets.

1-10. The AHS support plans are designed to support the operational commander's scheme of maneuver while still retaining a focus on the delivery of health care. The AHS principles are explained in detail in FM 4-02.

WARFIGHTING FUNCTIONS

1-11. The AHS supports two warfighting functions as described in ADP 3-0. Health service support is included in the sustainment warfighting function, while force health protection (FHP) comes under the protection warfighting function. The *health service support* is defined as (Joint) all services performed, provided, or arranged to promote, improve, conserve, or restore the mental or physical well-being of personnel. (JP 4-02) (Army) Health service support is support and services performed, provided, and arranged by the Army Medical Department to promote, improve, conserve, or restore the behavioral and physical well-being of personnel by providing direct patient care that include medical treatment (organic and area support) and hospitalization, medical evacuation to include medical regulating, and medical logistics to include blood management. (FM 4-02).

1-12. The Army HSS pertains to the treatment and medical evacuation of patients from the battlefield and the required Class VIII (medical) supplies, equipment, and services necessary to sustain these operations. Health service support encompasses medical functions involved directly with patient care (medical treatment, medical evacuation, and medical logistics). These HSS components include—

- The medical treatment includes medical treatment (organic and area support), hospitalization, the treatment aspects of dental services, the treatment aspects of veterinary services, treatment of behavioral health or neuropsychiatric patients, clinical laboratory services and support, and the treatment of CBRN patients. A *casualty* is defined as any person who is lost to the organization by having been declared dead, duty status-whereabouts unknown, missing, ill, or injured. (JP 4-02).
- The medical evacuation component of the HSS mission includes air and ground medical evacuation, medical regulating, and the provision of en route care to patients being transported. *Medical evacuation* is defined as the timely and effective movement of the wounded, injured, or ill to and between medical treatment facilities on dedicated and properly marked medical platforms with en-route care provided by medical personnel. (ATP 4-02.2).
- The medical logistics component of HSS encompasses the management of medical products and services. The timely provision of medical logistics includes medical material (CLVIIIA), medical

maintenance and repair, patient movement items, regulated medical waste, medical gases, blood (CLVIIIB) storage and distribution.

1-13. The *force health protection* is defined as (Joint) measures to promote, improve, or conserve the behavioral and physical well-being of Service members to enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. (JP 4-02) (Army) Force health protection are measures that promote, improve, or conserve the behavioral and physical well-being of Soldiers comprised of preventive and treatment aspects of medical functions that include: combat and operational stress control, dental services, veterinary services, preventive medicine, and laboratory services. Enabling a healthy and fit force, prevent injury and illness, and protect the force from health hazards.
(FM 4-02).

THE ARMY MEDICAL OPERATIONAL PLANNING FACTORS

1-14. Commanders and medical planners should apply the following Army medical operational planning factors in order of precedence for establishing AHS priorities in support of operations. The Army medical operational planning factors are—

- Be there — maintain a medical presence with the Soldier.
- Maintain the health of the command.
- Save lives.
- Clear the battlefield of casualties.
- Provide state of the art medical care.
- Ensure early return to duty. *Return to duty* is defined as a patient disposition which, after medical evaluation and treatment when necessary, returns a Soldier for duty in his unit. (FM 4-02).

1-15. These medical operational planning factors are established to guide commanders and medical planners in designing medical support for the tactical commander. Although medical personnel always seek to provide the full range of AHS in the best manner possible, during every combat operation there are inherent possibilities of conflicting support requirements.

1-16. The rationale for medical operational planning factors is based on the prevention of diseases and injuries and the evolving clinical concept that demonstrates that with timely and adequate medical care, the trauma victim's chances of survival are greatly improved.

1-17. Adequate medical care means that the injured Soldier receives prompt medical treatment, in that the Soldier is sufficiently resuscitated and stabilized and that stabilization is maintained during evacuation. The goal of resuscitation and stabilization is to enable a patient's evacuation over greater distances to a medical treatment facility (MTF).

The following paragraph implements NATO Standardization Agreement 2087.

1-18. Adequate medical care and stabilization prior to evacuation is a major aspect in determining whether the patient survives. By providing en route medical care, stabilization can be maintained during evacuation. Early medical intervention with the ability to effectively stabilize the casualty must be available as far forward as the situation permits with the ability to medically evacuate the patient in accordance with the assigned precedence. The evacuation precedence for Army operations at Roles 1 through 3 are—

- Priority I, URGENT is assigned to emergency cases that should be evacuated as soon as possible and within a maximum of one hour to save life, limb, or eyesight and to prevent complications of serious illness and to avoid permanent disability.
- Priority IA, URGENT-SURG is assigned to patients that should be evacuated as soon as possible and within a maximum of one hour who must receive far forward surgical intervention to save life, limb, or eyesight and stabilize for further evacuation.
- Priority II, PRIORITY is assigned to sick and wounded personnel requiring prompt medical care. This precedence is used when the individual should be evacuated within four hours or if his medical condition could deteriorate to such a degree that he will become an URGENT precedence,

or whose requirements for special treatment are not available locally, or who will suffer unnecessary pain or disability.

- Priority III, ROUTINE is assigned to sick and wounded personnel requiring evacuation but whose condition is not expected to deteriorate significantly. The sick and wounded in this category should be evacuated within 24 hours.
- Priority IV, CONVENIENCE is assigned to patients for whom evacuation by medical vehicle is a matter of medical convenience rather than necessity.

Note. The North Atlantic Treaty Organization (NATO) Standardization Agreement (STANAG) 3204 has deleted the category of Priority IV, CONVENIENCE. However, this category is still included in the United States Army evacuation priorities as there is a requirement for it in an operational environment.

1-19. Consider the planning for the medical support for an early entry operation where the composition of a task force precludes the deployment of a complete Role 3 hospital. A medical support inconsistency now arises between supporting the commander's intent of maintaining a small and nimble footprint and providing optimal medical care to the Soldiers. The conflict can be resolved appropriately by applying medical operational planning factors. Commanders and medical planners must increase the medical presence with the Soldiers to resuscitate casualties and maintain stabilization pending evacuation. Greater reliance on forward medical assets and increased medical evacuation assets compensates for the inability to deploy a hospital into the immature theater. For example, a forward surgical team or forward resuscitative surgical team collocated with the brigade combat team (BCT) Role 2 (medical company, brigade support) would provide a limited damage control resuscitation and damage control surgical capability to bridge the gap in early entry operations until follow-on forces enable the deployment of a hospital. Medical planners must understand both the capabilities and limitations of AHS units in order to provide the right support efficiently.

ROLES OF MEDICAL CARE

1-20. A basic characteristic of organizing and planning for AHS support is the distribution of medical resources and capabilities to facilities at various levels of command, diverse locations, and progressive capabilities, referred to as roles of care. For medical planners to effectively provide mission support to the ground commander they need to understand the full breadth of these roles of medical care.

1-21. Nonmedical personnel performing first aid procedures assist the combat medic in his duties. First aid is administered by an individual (self-aid or buddy-aid) and enhanced first aid is provided by the combat lifesavers.

SELF-AID AND BUDDY AID

1-22. Each individual Soldier is trained in a variety of specific first aid procedures. These procedures include aid for chemical casualties with particular emphasis on lifesaving tasks. Self and buddy aid (first aid) as well as combat lifesaver (enhanced first aid) are a part of prehospital emergency medical treatment in the military that is most commonly provided by enlisted personnel. This training enables the Soldier or a buddy to apply first aid to alleviate potential life-threatening situations. Each Soldier is issued an individual first aid kit to accomplish first aid tasks.

COMBAT LIFESAVER

1-23. The combat lifesaver is a nonmedical Soldier selected by his unit commander for additional training beyond basic first aid procedures. A minimum of one individual per squad, crew, team, or equivalent-sized unit should be trained. The primary duty of this individual does not change. The additional duty of the combat lifesaver is to provide enhanced first aid for injuries, based on his training, before the combat medic arrives.

ROLE 1

1-24. The first medical care a Soldier receives is Role 1 (also referred to as unit-level medical care). This role of care includes—

- Immediate lifesaving measures.
- Disease and nonbattle injury (DNBI) prevention. *Disease and nonbattle injury* is defined as all illnesses and injuries not resulting from hostile action or terrorist action or caused by conflict. (JP 4-02).
- Combat and operational stress preventive measures.
- Patient location and acquisition (collection).
- Medical evacuation from supported units (point of injury or wounding, company aid posts, battalion aid stations [BASs] or casualty or patient collection points to supporting MTF.
- Treatment provided by designated combat medics or treatment squads. (Major emphasis is placed on those measures necessary for the patient to return to duty or to stabilize him and allow for his evacuation to the next role of care. These measures include maintaining the airway, stopping bleeding, preventing shock, protecting wounds, immobilizing fractures, and other emergency measures, as indicated.)

1-25. Role 1 medical treatment is provided by the physician, the physician assistant, or the health care specialist (combat medic) in the Role 1 MTF. In Army special operations forces, Role 1 treatment is provided by special operations combat medics, Special Forces medical sergeants, or physicians and physician assistants at forward operating bases, Special Forces operating bases, or in joint special operations task forces. Role 1 includes—

- Tactical combat casualty care (immediate far forward care) consists of those lifesaving steps that do not require the knowledge and skills of a physician. The combat medic is the first individual in the medical chain that makes medically substantiated decisions based on medical military occupational specialty-specific training.
- At the BAS, the physician and the physician assistant are trained and equipped to provide advanced trauma management to the combat casualty. This element also conducts routine sick call when the operational situation permits. Like elements provide this role of medical care at brigade and echelons above brigade (EAB).

ROLE 2

1-26. Care is rendered at the Role 2 MTF by the area support squad, medical treatment platoon of medical companies. The Role 2 MTF has the capability to provide blood products, limited x-ray, clinical laboratory, operational dental support, COSC, preventive medicine, physical therapy, and when augmented, optometry services. The Role 2 MTF provides a greater capability to resuscitate trauma patients than is available at Role 1. Those patients who can return to duty within 72 hours (1 to 3 days) are held for treatment. This role of care provides medical evacuation from supported Role 1 MTFs and also provides Role 1 medical treatment on an area support basis for units without organic Role 1 resources.

1-27. Role 2 AHS assets are located in the—

- Medical company (brigade support), assigned to modular brigades which include the armored BCT, infantry BCT, airborne BCT, and the Stryker BCT.
- Medical company (area support) which is an EAB asset that provides direct support to the modular division and support to EAB units.

Note. The Role 2 definition used by NATO forces Allied Joint Publication STANAG 2228 includes the following terms and descriptions not used by United States Army forces. The United States Army forces subscribe to the basic definition of a Role 2 MTF providing greater resuscitative capability than is available at Role 1. It does not subscribe to the interpretation that a surgical capability is mandatory at this role. The NATO descriptions are—

- A Role 2 Basic MTF must provide the surgical capability, including damage control surgery and surgical procedures for emergency surgical cases, to deliver life, limb and function saving medical treatment. The surgical capability should be provided within medical timelines.
- A Role 2 Enhanced MTF must provide all the capabilities of the Role 2 Basic, but has additional capabilities as a result of additional facilities and greater resources, including the capability of stabilizing and preparing casualties for strategic aeromedical evacuation.

The term *basic* and *enhanced* relate to clinical capabilities and do not refer to the level of mobility of the respective MTF. Depending on the mission and operational requirements, a Role 2 basic can be set up as a light and highly mobile MTF, as well as a fixed building or on a naval platform.

ROLE 3

1-28. At Role 3, the patient is treated in an MTF staffed and equipped to provide care to all categories of patients, to include resuscitation, initial wound surgery, damage control surgery, and postoperative treatment. This role of care expands the support provided at Role 2. Patients who are unable to tolerate and survive movement over long distances receive surgical care in a hospital as close to the supported unit as the tactical situation allows. This role includes provisions for—

- Evacuating patients from supported units.
- Providing care for all categories of patients in an MTF with the proper staff and equipment.
- Providing support on an area basis to units without organic medical assets.

ROLE 4

1-29. Role 4 medical care is found in continental United States (CONUS)-based Defense Health Agency operated hospitals and other safe havens. The AHS is more globally integrated and linked to the Military Health System through the Defense Health Agency Role 4 MTFs for the provision of more definitive Role 4 medical care as patients are evacuated to CONUS from Role 3 MTFs in theater. If mobilization requires expansion of military hospital capacities, then the Department of Veteran's Affairs and civilian hospital beds in the National Disaster Medical System are added to meet the increased demands created by the evacuation of patients from the AO. The support-based hospitals represent the most definitive medical care available within the AHS.

SECTION II — THE APPLICATION OF ARMY HEALTH SYSTEM

1-30. Army Health System support is provided across the range of military operations and various types of mission support. The dynamics of our responsibilities requires an AHS that is flexible and scalable and able to support the diversity of operations. Providing comprehensive AHS support to Army operations requires continuous planning and synchronization of a fully integrated and cohesive AHS.

1-31. When considering how AHS plans support an operation, the medical planner must consider many factors. This includes the scheme of maneuver, as well as the enemy's capabilities, which influence the character of the patient workload and its time and space distribution. The analysis of this patient workload determines the allocation of AHS resources and the planned locations of medical assets such as MTFs.

1-32. To apply these AHS resources medical planners need to consider the AHS principles. These principles are the basics upon which to build support and they apply across all medical functions, and are synchronized through medical mission command.

1-33. When the AHS principles are combined with the medical operational planning factors, the medical planner can prioritize activities to reduce morbidity and mortality, maximize patient outcomes, and potentially decrease long-term disability. The Army Health System is explained in detail in FM 4-02.

1-34. Medical unit commanders, command surgeons, and medical planners must be proactive to changing situations and applying the medical operational planning factors as the situations require.

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Chapter 2

Army Health System Medical Functions

Chapter introduction The AHS ten medical functions are aligned with specific medical disciplines (HSS or FHP medical tasks). The demands and complexities of the operational environment require a robust and scalable functioning medical capability. Medical functions are at the heart of the system of systems that provide health and medical care for the Soldier continually in any environment, regardless of mission or location.

SECTION I – MEDICAL COMMAND AND CONTROL

2-1. The AHS supports joint doctrine as described in JP 4-02. However, rather than relying on broad terms to describe medical capabilities, the Army refers to capability packages which align the right mix of medical skills across the ten medical functions to the type of military formation where the support can be found.

2-2. The complexities of the operational environment, the myriad of medical functions and assets, and the requirement to provide health care across unified land operations to diverse populations (U.S., joint, multinational, host nation, and civilian) necessitates a medical C2 authority that is regionally focused and capable of utilizing the scarce medical resources to their full potential and capacity. The medical C2 organizations (the three types of organizations are described later in this chapter) are designed to provide scalable and tailorable medical assets from early entry and expeditionary operations that can be expanded and augmented as the theater matures and a health care infrastructure is established.

2-3. The medical C2 provides a seamless state of the art health care system across the range of military operations. Medical C2 occurs from the tactical level with the field medical assistant within a maneuver battalion to strategic levels. Detailed information concerning medical C2 organizations is found in FM 4-02.

MEDICAL COMMAND AND CONTROL ORGANIZATIONS

2-4. Three separate and distinct medical C2 organizations exist to provide the necessary leadership and professional medical expertise to support and manage the complexities of the operational environment with the myriad of interrelated and interdependent medical functions. These units are the medical command (deployment support) (MEDCOM [DS]), medical brigade (support), and the medical battalion (multifunctional) and are described in the following paragraphs.

MEDICAL COMMAND (DEPLOYMENT SUPPORT)

2-5. The medical command deployment support (MEDCOM (DS) is the theater medical enabling command within an area of operation. The MEDCOM (DS) synchronizes AHS support operations with C2 of the medical brigade support (MEDBDE) (SPT), medical battalions (multifunctional), or other medical units assigned or attached to the headquarters (HQ) providing HSS and FHP to tactical commanders and theater forces conducting simultaneous operations across the range of military operations. To successfully execute AHS support operations, the MEDCOM (DS) commander must have the ability to rapidly task-organize and reallocate medical assets across command and geographical boundaries.

2-6. The MEDCOM (DS) maintains a regional focus that encompasses the entire geographical combatant commander's area of responsibility. This necessitates a medical command authority that is regionally focused and capable of utilizing the scarce medical resources to their full potential and capacity. The MEDCOM (DS) focuses on AO medical OPLANs and medical contingency plans. It monitors threats within each AO, ensures required medical capabilities to mitigate these health threats, and maintains visibility and utilization

of medical infrastructure, treatment, and evacuation capabilities. The MEDCOM (DS) is assigned to the Army Service component command and is allocated on a basis of one per theater.

2-7. The MEDCOM (DS) provides—

- Command and control of theater medical units providing AHS support within the AO.
- Subordinate medical organizations to operate under the medical brigade (support) or the medical battalion (multifunctional) and to provide medical capabilities to the BCT.
- Advice to the Army Service component command commander and other senior-level commanders on the medical aspects of their operations.
- Staff planning, supervision of operations, and administration of assigned and attached medical units.
- Assistance with coordination and integration of strategic capabilities from the sustaining base to units in the AO.
- Advice and assistance in facility selection and preparation.
- Army medical support to other Services and Title 10, United States Code (10 USC), responsibilities of the commander.
- Management, coordination, and patient tracking procedures with the theater patient movement center staff section.
- In-transit monitoring with the theater patient movement requirements center for intertheater and intratheater medical evacuation of all patients.
- Synchronization of intratheater evacuation plans with the intertheater evacuation plan to ensure a seamless transition between tactical and strategic evacuation systems.
- Coordination with the United States Air Force theater patient movement requirements center for medical regulating and movement of patients from MTFs.
- Consultation services and technical advice in all aspects of medical and surgical services.
- Functional staff to coordinate medical plans and operations, hospitalization, preventive medicine, tactical and strategic medical evacuation, medical logistics, blood management, dental services, veterinary services, nutrition care services, COSC, medical laboratory services, and area medical support to supported units.
- Coordination and orchestration of medical logistic operations to include Class VIII supply, distribution, medical maintenance and repair support, optical fabrication, and blood management.
- Support planning of single integrated medical logistics manager when designated.
- Veterinary technical supervision for animal medical care, food protection, and veterinary public health support.
- Preventive medicine support for medical and occupational and environmental health (OEH) surveillance, potable water inspection, pest management, food facility inspection, and control of medical and nonmedical waste.
- Legal advice to the commander, staff, subordinate commanders, Soldiers, and other authorized persons.
- Health threats monitoring within the AO and ensuring required capabilities to mitigate threats are identified.
- Religious support to the command. This includes coordinating with the HQ unit ministry team for required religious support throughout the AO, and providing consultation capability to subordinate MEDCOM (DS) ministry teams.
- Minimum essential wartime requirements for personnel and equipment.

2-8. This unit is dependent upon appropriate elements of the theater for religious, legal, FHP, finance, and personnel and administrative services. Refer to FM 4-02 for more information.

MEDICAL BRIGADE (SUPPORT)

2-9. The medical brigade (support) is a subordinate command element of the MEDCOM (DS). The medical brigade (support) organizes, resources, trains, sustains, deploys, exercises C2, and supports assigned and

attached medical units to provide flexible, responsive, and effective HSS and FHP to supported forces conducting joint and simultaneous unified land operations.

2-10. The focus of the medical brigade (support) is driven by mission variables (mission, enemy, terrain and weather, troops and support available, time available, and civil considerations). A medical brigade (support) may be providing direct support to a tactical commander, while another is providing AHS support to a division-corps or joint-multinational forces. The medical brigade (support) coordinates with the MEDCOM (DS) and other HQ in their AO. External coordination with the combat aviation brigade and general support aviation battalion for medical evacuation support by air ambulances is critical. When a MEDCOM (DS) is not in theater, the medical brigade (support) may be the theater medical command.

2-11. The medical brigade (support) provides—

- Command and control of subordinate and attached units.
- Operational medical team augmentation to Role 2 medical companies.
- Advice to the commanders on the medical aspects of their operations.
- Medical staff planning, operational and technical supervision, and administrative assistance for subordinate or attached units and hospitals operating in the division or corps AO.
- Coordination with the supporting MEDCOM (DS) theater patient movement center.
- Coordination with the supporting theater patient movement requirements center for medical regulating and medical evacuation from medical battalion (multifunctional) and hospitals to support theater Army unit's medical treatment facilities.
- Medical consultation service and technical advice in—
  - Preventive medicine (medical surveillance, environmental health, sanitary engineering, and medical entomology.
  - Behavioral health to include combat operational stress control, and neuropsychiatry.
  - Nutrition services.
  - Dental services.
  - Tri-Service support for veterinary services including animal medicine, food protection, and veterinary public health.
  - Medical laboratory support.
- Advice and recommendations for the conduct of civil-military operations.
- Control and supervision of Class VIII supply and resupply to include blood management. When designated by the geographical combatant commander, serves as the single integrated medical logistics manager.
- Joint capable C2 capability when augmented with appropriate joint assets.

2-12. The medical brigade (support) is dependent upon theater assists for religious, legal, administration, finance, human resource, transportation services, CBRN and decontamination assistance, and laundry and bath support, Class I ration support, waste disposal and construction, and supplemental transportation requirements.

MEDICAL BATTALION (MULTIFUNCTIONAL)

2-13. The medical battalion (multifunctional) is the battalion-level medical HQ. It consists of an early entry element and a campaign support element. The medical battalion (multifunctional) provides a scalable, flexible, and modular medical C2, administrative assistance, logistical support, and technical supervision capability for assigned and attached medical functional organizations (companies, detachments, and teams) task organized for support to BCTs and EABs. The medical battalion (multifunctional) provides Role 2 mission command and provides assets providing Role 2 area support.

2-14. When fully manned, the medical battalion (multifunctional) provides—

- Medical C2, staff planning, supervision of operations, medical and general logistics support as required, and administration of activities of subordinates in accomplishing the AHS mission.
- Task organization of echelon above brigade health care assets to meet the projected patient workload.

- Coordination of medical regulating and patient movement with the medical brigade (support) patient movement branch or the MEDCOM (DS) theater patient movement center, as required within the AO.
- Consultation, planning, and coordinating air and ground medical evacuation within the battalion AO. Coordinating aeromedical evacuation support requirements with the supporting aviation unit, and synchronizing the air evacuation plan into the overall medical evacuation plan.
- Consultation and technical advice on preventive medicine (disease vectors and pest management, medical and OEH surveillance, food facility inspection, waste and water management, operational hearing services), combat operational stress control and behavioral health, medical records administration, veterinary services, nursing practices and procedures, dental services, and automated medical information systems to supported units.
- Monitoring and supervision of medical logistics operations, to include Class VIII supply or resupply, medical equipment maintenance and repair support, optical fabrication and repair support, and blood management.
- Planning and coordination of Role 1 and Role 2 medical treatment, to include staff advice on a support basis for echelon above brigade units without organic health assets.

2-15. The medical battalion (multifunctional) is assigned to the medical brigade (support) or the MEDCOM (DS). It is allocated as one medical battalion (multifunctional) per combination of three to seven medical companies or ten to fifteen medical detachments or teams. The unit is 100 percent mobile.

COMMUNICATIONS

2-16. The primary communications system utilized by the AHS to integrate, file, and support a comprehensive medical information system enabling lifelong electronic health records, streamlined medical logistics, and enhanced situational understanding for Army operating forces is the Medical Communications for Combat Casualty Care. This medical command post information system employs automation and communications equipment to—

- Assist in conserving the fighting strength by integrating medical and OEH surveillance data and other health threat indicators. This assists in identifying and assessing disease and injury threats which enhances readiness and reduces casualties due to DNBI.
- Provide state of the art medical information management across unified land operations.
- Ensure the capability of rapid strategic deployment in exercising medical C2.
- Ensure the capability to promptly clear the AO (locate, acquire, treat, and evacuate casualties).
- Conduct split-based operations on a continuous basis.
- Provide AHS staff virtual presence at all command levels.
- Provide a lead element with deploying forces and coordinate the arrival of medical assets into an AO.
- Support joint and multinational medical forces as directed, in unified land operations.
- Interface with Army systems, other Services, Department of Defense (DOD), and Veterans Administration automated systems throughout the operational continuum.
- Allow transfer of images and videos from numerous sensors and platforms, with image compression and transmission technologies enabling better AHS situational understanding in the theater.
- Enable three-dimensional presentation of imagery and graphics with multimedia technology to help commanders visualize their AO for more effective training, planning, rehearsal, and execution.

PRIMARY TASK AND PURPOSE

2-17. Mission command task includes—

- Plan, prepare, execute, and assess AHS support across unified land operations.
- Facilitate and enhance a seamless continuum of health care from the point of injury or wounding to definitive care in the CONUS-support base, if required.
- Maximize the use of scarce medical resources.

2-18. Communications task includes—

- Maintain situational understanding of the Army battle command systems and the common operational picture.
- Facilitate the transfer of medical information, to enhance the documentation of medical encounters and exposures to health hazards, and to ensure the compatibility and interoperability of communication systems.

2-19. Task organization task includes-provide a scalable and tailorable medical infrastructure which ensures the right mix of medical capabilities is available to execute the AHS mission. This capability is further enhanced through the modular design of medical units.

2-20. Medical intelligence task includes-facilitate the identification, evaluation, and assessment of health threats to the deployed force.

2-21. Technical supervision task includes—

- Ensure medical standards are established, implemented, and monitored throughout the operational area.
- Provide consultation and support to subordinate medical units or elements.
- Provide a reach back capability to the CONUS-support base in the areas of various medical disciplines and specialties.

2-22. Regional focus task includes—support and facilitate the execution of the combatant commander's theater engagement strategy during unified land operations.

SECTION II — MEDICAL TREATMENT (ORGANIC AND AREA SUPPORT)

2-23. The medical treatment function encompasses Role 1 and 2 medical treatment support. These roles of care are provided by organic assets or on an area support basis from supporting medical companies or detachments.

ORGANIZATION AND PERSONNEL

2-24. Medical treatment within the BCTs and EAB medical units is provided by medical companies or troops of brigades or armored cavalry regiments, the medical company (brigade support), and the medical company (area support). In the corps and at the Army-level, it is also provided by the medical company (area support). At Role 2 MTFs in addition to the Role 1 capabilities include operational dental care (emergency and essential), preventive medicine, x-ray, patient holding capability, medical laboratory, and combat and operational stress control.

2-25. Medical companies (area support) are assigned a specific geographical area during operations to ensure all personnel receive adequate medical care. Within each company sector, the treatment platoon with its treatment, dental, x-ray, laboratory, and patient holding capability forms the core of the company's support scheme. Company ambulances are collocated with medical elements to provide a ground medical evacuation capability or to evacuate patients to the Role 2 MTF established by the area support section of the medical company for further treatment or holding.

PRIMARY TASK AND PURPOSE

2-26. The primary tasks and purposes of the medical treatment (organic and area support) medical function are as follows:

- Tactical combat casualty care — provides lifesaving intervention at the point of injury or wounding. This task is performed by the combat medic who locates, acquires, stabilizes, and evacuates patients with combat trauma.
- Physician directed trauma care to stabilize patients for evacuation to the higher role of care. This care is provided at the supporting Role 1 and Role 2 MTF. A Role 2 MTF provides a greater resuscitative capability than is available at Role 1. At Role 2 MTFs, blood, x-ray, and medical logistics are available.
- Forward resuscitative surgery — provides a damage control surgery capability to the point of injury or wounding. This care is provided by a forward surgical team or forward resuscitative surgical team only when collocated with a Role 2 MTF.
- Routine sick call for routine DNBI and non-combat related emergencies.
- Patient holding — provides a short-term holding capability (not to exceed 72 hours) to patients requiring minimal care prior to returning to duty.
- Casualty prevention measures — promote wellness and enhance Soldier medical readiness and to decrease morbidity and mortality. Preventive medicine and combat operational stress control assets are available at Role 2.
- Medical evacuation — provides medical evacuation by ground ambulance on an area support basis.

SECTION III — MEDICAL EVACUATION

2-27. Medical evacuation is the system which provides the vital linkage between the roles of care necessary to sustain the patient during transport. This is accomplished by providing en route medical care and if required, emergency medical intervention, to enhance the individual's prognosis and to reduce long-term disability. Refer to ATP 4-02.2 for a detailed discussion on medical evacuation

MEDICAL EVACUATION SYSTEM

2-28. Medical evacuation occurs at the tactical, operational, and strategic levels and requires the synchronization and integration of Service component medical evacuation resources and procedures with the DOD worldwide evacuation system operated by the United States Transportation Command and the Air Mobility Command for intertheater medical evacuation.

2-29. Army medical evacuation is a multifaceted mission accomplished by a combination of dedicated air and ground evacuation platforms synchronized to provide direct and area support within the AO. At the tactical level, organic, or direct support medical evacuation resources locate, acquire, treat, and evacuate Soldiers from the point of injury or wounding to an appropriate MTF where they are stabilized, prioritized, and, if required, prepared for further evacuation to an MTF capable of providing required essential care within the AO.

Note: Military working dogs may be evacuated on any available means of transportation including ground or air ambulances based on mission priority and availability.

2-30. Medical evacuation resources are used to transfer patients between MTFs within the joint operations area and from MTFs to United States Air Force en route patient staging systems, emergency movement of Class VIII, blood and blood products, medical personnel and equipment, and serve as messengers in medical channels.

PLANNING MEDICAL EVACUATION

2-31. Planning medical evacuation involves considering all available forms of transportation and providing appropriate AHS personnel in the evacuation system to assure continuity of patient care. It also involves planning the routes, controlling evacuation movements, and planning the location of evacuation assets. Planning for the location of evacuation assets is very challenging when complying with the one hour URGENT and URGENT-SURG patient evacuation precedence. Medical evacuation tools (casualty control points, ambulance exchange points and an ambulance or litter shuttle system [ambulance loading points, ambulance relay points, and ambulance control points]) must be planned and synchronized with the location and capabilities of medical treatment. Thorough investigation of all the available lines of communications is an essential prerequisite to such planning. This may involve a "whole of nation" approach in the use of nonstandard evacuation platforms such as rail, buses, and watercraft.

2-32. The Army does not have dedicated fixed–wing aircraft for evacuation of patients within the AO or to MTFs outside the AO. For additional means of medical evacuation, planning and coordination must be made with the—

- Particular Service controlling aircraft and ships.
- Transportation command controlling other forms of transportation (train, bus, or other transportation asset).

2-33. Coordination with other Services and commands is usually accomplished through medical regulating. The surgeon, however, must forecast the requirements for air and surface evacuation so that coordination for its procurement may be done in advance of the need.

2-34. Information on calculating patient evacuation requirements can be found in Chapter 4 of this publication.

ORGANIZATIONS

2-35. There are two types of Army medical evacuation units, ground and air. These organizations are described in detail in ATP 4-02.2.

AMBULANCES

2-36. The maneuver battalion's medical platoon ambulances provide tracked or wheeled ambulance evacuation support from the supported BCT or from the point of injury to the supporting MTF.

2-37. The medical company provides ground medical evacuation direct support for the BCTs and theater units. Ground ambulance assets are located in the medical company of the brigade support battalion and the medical company (area support) of the medical battalion (multifunctional).

2-38. The medical company (ground ambulance) serves as one of the primary means of evacuating patients from the battlefield by ground. The medical company (ground ambulance) is normally assigned or attached to the medical battalion (multifunctional) or a medical brigade (support) for C2.

AIR AMBULANCE

2-39. The medical company (air ambulance) provides aeromedical evacuation for all categories of patients consistent with evacuation precedence and other operational considerations. The medical company (air ambulance) falls under the general support aviation battalion, combat aviation brigade.

PRIMARY TASK AND PURPOSE

2-40. Primary tasks and purposes of the medical evacuation medical function are as follows:

- Acquire and locate casualties — provide a rapid response to acquire wounded, injured, and ill personnel. Clear the battlefield of casualties and facilitate and enhance the tactical commander's freedom of movement and maneuver. This task is performed by the medical crew of the evacuation platform.

- Treat and Stabilize — maintain or improve the patient's medical condition during transport and provide en route care as required. This task is performed by medical evacuation crewmembers and providers when necessary.
- Intratheater Medical Evacuation — provide rapid evacuation utilizing dedicated assets to the most appropriate role of care. Provide a capability to cross-level patients within the theater hospitals and to transport patients being evacuated out of theater to staging facility prior to departure. This task is performed by the evacuation platforms in the medical company (ground ambulance) and medical company (air ambulance).
- Emergency movement of medical personnel, equipment, and supplies — provide a rapid response for the emergency movement of scarce medical resources throughout an operational environment.

EVACUATION PRECEDENCE

2-41. The initial decision for medical evacuation priorities is made by the treatment element, or the senior nonmedical person on the scene if no medical personnel are present. Soldiers are evacuated by the most expeditious means of evacuation based on their medical condition, assigned evacuation precedence, and availability of medical evacuation platforms. The evacuation precedence of United States Army operations at Roles 1 through Role 3 are listed in paragraph 1-18.

RESPONSIBILITIES

2-42. The Service component commander is responsible for medical evacuation at the tactical level and is responsible for executing the medical evacuation of their forces. Strategic aeromedical evacuation is the responsibility of the United States Transportation Command Department of Defense Directive 5100.01 gives the Army the responsibility of providing intratheater aeromedical evacuation.

2-43. Within Army support to other Services, Army resources may provide shore-to-ship and ship-to-shore medical evacuation on an area or direct support basis.

THEATER EVACUATION POLICY

2-44. The theater evacuation policy is established by the Secretary of Defense, with the advice of the joint chief of staff and upon the recommendation of the theater commander. The *theater evacuation policy* is a command decision indicating the length in days of the maximum period of noneffectiveness that patients may be held within the command for treatment, and the medical determination of patients that cannot return to duty status within the period prescribed requiring evacuation by the first available means, provided the travel involved will not aggravate their disabilities or medical condition. (ATP 4-02.2). This policy does not mean that a patient is held in the AO for the entire period of noneffectiveness. A patient who is not expected to be ready to return to duty within the number of days established in the theater evacuation policy is evacuated to the CONUS or other safe havens. This is done providing that the treating physician determines that such evacuation will not aggravate the patient's condition.

2-45. The following factors are used in determining the theater evacuation policy—

- Nature of tactical operations – a major factor is the nature of the combat operations. Will they be operations of short durations and low intensity, or operations of long duration and high intensity? Will CBRN and high explosive weapons be employed?
- Number and type of patients anticipated and the rate of patients returned to duty – Appendix D discusses historical data on admission rates under varying geographical, climatic, and organization conditions.
- Evacuation means – an important factor is the means (number and type of transport vehicles) available for evacuation of patients from the theater of operations to the CONUS or other safe haven.
- Reconstitution – another important consideration is the capability to furnish replacements to the theater. For each patient who is evacuated from theater to CONUS, a fully trained and equipped replacement must be provided.

- Capacity of hospital beds in theater – the lower the number of hospital beds, the greater the requirement for medical evacuation from theater to CONUS.
- Availability and capability of in-theater medical support – limitations of all AHS support resources, such as insufficient amount and types of AHS support units in the EAB to support the AO, will have a definite impact on the theater evacuation policy. The amount and timing of engineering support is also a consideration. For example, engineer support may be needed when establishing hospital facilities and airfields that support medical evacuation out of theater. The more limitations or shortages the shorter the theater evacuation policy

MEDICAL REGULATING

2-46. Medical regulating is a casualty management system designed to coordinate the movement of patients from point of injury or onset of disease through successive roles of medical care to an appropriate MTF. *Medical regulating* is defined as the actions and coordination necessary to arrange for the movement of patients through the roles of care and to match patients with a medical treatment facility that has the necessary health service support capabilities and available bed space. (JP 4-02).

2-47. Medical regulating entails identifying the patients awaiting evacuation, locating the available beds, and coordinating the transportation means for movement. Careful control of patient evacuation to the appropriate hospitals is to—

- Effect an even distribution of cases.
- Ensure adequate beds are available for current and anticipated needs.
- Route patients requiring specialized treatment to the appropriate MTF.

2-48. The factors that influence the scheduling of patient movement include—

- Patient's medical condition (stabilized to withstand evacuation).
- Tactical situation.
- Availability of evacuation means.
- Location of MTFs.
- Surgical backlogs.
- Number and location of patients by diagnostic category.
- Locations of airfields, seaports, and other transportation hubs.
- Communications capabilities.
- Availability of critical en route care equipment.
- Availability of en route critical care teams.

PLANNING FOR MEDICAL REGULATING

2-49. The medical regulating system operates worldwide to regulate the movement of patients from the United States Army, United States Navy (USN), United States Marine Corps (USMC), and United States Air Force (USAF) to appropriate MTFs. While the concept of medical regulating is simple, its execution becomes quite complex for the following reasons:

- It involves three military Services, thus requiring careful and detailed coordination.
- Patients require continuous medical care during all phases of evacuation.
- The Army does not have its own long-range evacuation means; therefore, close coordination with the other Services providing transportation is required.

2-50. The mission of the United States Transportation Command Regulating and Command and Control Evacuation System is to combine transportation, logistics, and clinical decision elements into a seamless patient movement automated information system. The United States Transportation Command Regulating and Command and Control Evacuation System is capable of visualizing, assessing, and prioritizing patient movement requirements, assigning proper medical resources, and distributing relevant data to deliver patients efficiently. The system automates the processes of medical regulating (assignments of patients to suitable medical treatment facilities) and strategic aeromedical evacuation during peace, war, and contingency operations.

2-51. The medical regulating system is under the technical supervision of medical regulating officers assigned to all medical mission command HQ and Role 3 hospitals. These officers plan and coordinate with the various organizations and agencies who participate in the medical regulating system. Tactical medical regulating is controlled by Service medical regulating officers, theater medical regulating is controlled by the theater patient movement requirements center and the CONUS medical regulating is controlled by the global patient movement requirements center. Additional information can be found in ATP 4-02.2.

2-52. Patient management, therefore, is a dynamic decision making process which must be applied throughout all roles of medical care. Effective patient regulating may prove to be as big a challenge as medical evacuation. For example, patients may not be regulated to a 248 bed combat support hospital with 150 empty beds. There may be many factors that impede this regulating such as, the matching of patients to available specialties, to appropriate matching of professional staff to patient care requirements, and other considerations.

2-53. Other factors, in addition to the tactical situation, which influence the scheduling of patient evacuation include—

- Availability of transportation.
- On-hand patient mix, specialty capabilities, Class VIII status, medical equipment status, staffing status, associated supply items of other equipment status, pending displacement of the MTFs, or location of MTFs.
- The existing bed status of MTFs (bed occupied and not occupied).
- Surgical backlog of each facility.
- Number and location of patients by diagnostic category.
- Location of airfields or seaports.
- Condition of each patient (is the patient sufficiently stabilized to withstand travel).
- En route care requirements (medical provider and medical equipment).

2-54. The theater evacuation policy affects the number of beds required to support the theater. A patient requiring "x" number of days (not to exceed the maximum number of days per the theater evacuation policy) of hospitalization also requires a bed and a medical staff for the same amount of days. The patient requires this whether the entire period is spent in the theater, or divided between "x" number of days in the theater and "x" number of days in CONUS. The most intensive and demanding medical requirements are experienced during the admission, the initial patient work up, and the resuscitative phase. These requirements remain a theater responsibility, regardless of the theater evacuation policy.

2-55. Specific clinical capabilities as well as the number of hospital beds and locations of the hospitals must be considered. Hospitals must have the clinical capabilities necessary to provide care for the expected number and types of patients generated in the theater. The location of the hospital should be determined based on the relative mobility of the unit and the necessity to establish a logical progression of hospital facilities within the AO.

COMBAT SUPPORT HOSPITAL AND HOSPITAL CENTER

2-56. In theater, hospitalization is provided by the Role 3 operating within the AO. Army hospitals provide essential care within the theater to treat and return to duty those patients who can be treated within the theater evacuation policy, are stabilized, and then evacuate those patients requiring definitive, convalescent, and rehabilitative care in CONUS or other safe haven. Hospital capabilities include triage and emergency care, outpatient services, inpatient care, pharmacy, laboratory, blood banking, radiology, physical therapy, medical logistics, operational dental care (emergency and essential dental care), oral and maxillofacial surgery, nutrition care, and patient administrative service.

AUGMENTATION TEAMS

2-57. Hospitals may be augmented by one or more medical detachment, hospital augmentation teams, or medical teams. These may include—

- Medical detachment (minimal care), provides minimal and convalescent care, nursing, and rehabilitative services in support of Role 3 MTFs.
- Forward surgical team and forward resuscitative surgical team, provide a rapidly deployable, urgent initial surgical service in the BCT's AO. Also provides augmentation to the surgical services of the hospital with general surgery and orthopedic surgery capabilities when not deployed forward with medical companies to provide forward resuscitative surgical care and damage control surgery.
- Hospital augmentation team (head and neck), provides special surgical care for ear, nose and throat surgery, neurosurgery and eye surgery to support of the Role 3, plus specialty consultative services, as required. This is the only organization currently authorized a computerized tomography scanner.

PRIMARY TASK AND PURPOSE

2-58. The primary tasks and purposes of the hospitalization medical functions are listed below:

- Hospitalization — provides definitive medical care for Soldiers capable of being returned to duty, and to provide essential care for patients that must be stabilized for medical evacuation out of the AO because they cannot recover within the time period established by the theater evacuation policy.
- Forward resuscitative surgery — provides initial emergency resuscitative surgery and damage control surgery to save life, limb, and eyesight.
- Clinical laboratory services — analyze body fluids and tissues, or to identify microorganisms as an adjunct in the diagnosis and treatment of patients and in the prevention of disease.
- Blood bank — manages the classification, collection, processing, storage, shipment, and use of blood and blood components.
- Radiology services — provides radiology support for acute care, interpretation of x-ray images, and provides the final reading and interpretation of all images taken at the facility.
- Pharmacy support — provides general pharmaceutical support (to include all controlled substances); packing and dispensing medication for patient evacuations and discharge to return to duty and other ambulatory patients; provide parenteral admixture services; generating intravenous-quality fluids in the AO; and provide parenteral nutritional services.
- Nutrition care — provides hospital food services support for patients and staff; prepares therapeutic diets for hospitalized patients; provides nutrition counseling and advice to patients and staff; provides support to command health promotion program; and advises hospital and other commanders in theater on nutrition and health matters.
- Medical logistics — provides medical supply operations, medical equipment maintenance and repair, optical fabrication and repair, contracting services, regulated medical or hazardous waste management and disposal, and production and distribution of medical gases.
- Patient administration — provides admission and disposition processing; extract medical conditions, equipment and supplies to apply International Classification of Diseases Tenth Revision (ICD-10) diagnostic codes to outpatient and inpatient encounters; schedules patient evacuation; collect, safeguard, and account for patient's funds and valuables; collaborate with clinical staff to provide clinical documentation improvement reviews on the inpatient and outpatient treatment records; custodianship of inpatient and outpatient treatment records, redeployment of medical records; maintenance of medical records and files; collecting and reporting medical statistical data; management of casualty reporting and decedent affairs; line of duty investigations; and submission of special reports and other patient related activities.
- Respiratory care — provides support for the patients that require supplementation of oxygen, administration of aerosolized medicines, and general care of the patient with ventilatory compromise.

- Optometry — provides optometry support for glasses, contact lens, or protective mask inserts, and ophthalmological support to perform certain surgical procedures. (Contact lens wear is not authorized in a combat, theater or field training environment in accordance with Department of the Army Pamphlet (DA PAM) 40-506.)
- Physical therapy — provides services to injured Soldiers to develop, maintain, and restore maximum movement and functional ability thereby reducing morbidity.
- Preventive medicine — provides oversight, monitoring techniques, and analysis necessary to investigate, prevent, and mitigate infectious outbreaks with the hospital; develop countermeasures and recommends courses of action to the hospital commander; identify and integrate host nation assets and resources in support of the hospital's role of promoting the health of the population; and provide public health nursing.
- Hospital augmentations — medical treatment facilities may be augmented by one or more medical detachments, hospital augmentation teams, or medical teams to provide specialized care or assistance as required.

SECTION V — DENTAL SERVICES

2-59. The mission of the dental service support system is to promote dental health; prevent and treat oral and dental disease; provide far forward dental treatment; provide early treatment of severe oral and maxillofacial injuries; and augment medical personnel (as necessary) during mass casualty operations.
Refer to ATP 4-02.5 for additional information.

CATEGORIES OF DENTAL CARE

2-60. There are two primary categories of dental care (operational and comprehensive) that the medical planner needs to be able to plan for in designing a comprehensive AHS support plan.

OPERATIONAL DENTAL CARE

2-61. Dental care provided for deployed Soldiers in the AO is referred to as operational dental care. Operational dental care consists of emergency dental care and essential dental care.

EMERGENCY DENTAL CARE

2-62. Emergency dental care is designed to provide relief of oral pain, elimination of acute infection, control of life-threatening oral conditions (hemorrhage, cellulitis, or respiratory difficulty), and treatment of trauma to teeth, jaws, and associated facial structures. It is considered the most austere form of dental care provided to deploy Soldiers who are engaged in tactical operations.

2-63. Since dentists are not assigned to Role 1 MTFs, the battalion surgeon or physician assistant can provide limited emergency dental treatment until the patient can be seen by a dentist. Common examples of emergency treatments include—

- Simple extractions.
- Temporary fillings.
- Administration of analgesics.
- Administration of antibiotics.

2-64. Another aspect of essential dental care falls under those services provided by the oral and maxillofacial surgical staff to minimize loss of life and disability resulting from severe oral and maxillofacial injuries and wounds. The Oral Maxillofacial Surgery assets providing this degree of care are located within Role 3 MTFs.

ESSENTIAL DENTAL CARE

2-65. Essential dental care is generally considered the highest category of operational dental care available in the theater. Essential dental care includes treatments which are performed in order to prevent potential dental emergencies and maintain the oral fitness of Soldiers. Essential dental care enhances the individual Soldier's combat readiness and can prevent lost duty time. It is for these reasons that essential dental care is made readily available. Soldiers who are categorized as dental Class 2 (untreated oral disease) or dental Class 3 (potential dental emergencies) should receive essential care as soon as the tactical situation and availability of dental assets permit. Essential treatments performed by dental officers include—

- Definitive restorations.
- Minor oral surgery.
- Exodontic, periodontic, and prosthodontic procedures.

COMPREHENSIVE DENTAL CARE

2-66. Comprehensive dental care consists of those services to restore an individual to optimal oral health, function, and aesthetics. These services are normally provided in continental United States-support base.

PRIMARY TASK AND PURPOSE

2-67. Primary tasks and purposes of the dental services medical function includes—

- Comprehensive dental care — restores an individual to optimal oral health, function, and aesthetics. Normally provided in the CONUS-support base.
- Operational dental care — provides treatment in austere environments for Soldiers engaged in tactical operations. Operational care is provided in the AO and consists of emergency dental care and essential dental care.
- Emergency dental care — relieves oral pain, eliminates acute infection, controls life-threatening oral conditions (hemorrhage, cellulitis, or respiratory difficulty) and treats trauma to teeth, jaws, and associated facial structures.
- Essential dental care — prevents potential dental emergencies and maintains the overall oral fitness of Soldiers at levels consistent with combat readiness.
- Oral maxillofacial surgery — provides oral maxillofacial surgery capability to minimize loss of life and disability resulting from oral and maxillofacial injuries and wounds within the AO.

SECTION VI — PREVENTIVE MEDICINE SERVICES

2-68. *Preventive medicine* is defined as the anticipation, prediction, identification, prevention, and control of communicable diseases (including vector-, food-, and waterborne diseases), illnesses, injuries, and diseases due to exposure to occupational and environmental threats, including nonbattle injury threats, combat stress responses, and other threats to the health and readiness of military personnel and military units. (FM 4-02). The mission of the preventive medicine function is to provide commanders with healthy and ready forces and to sustain health readiness during any military operation. When emphasized by commanders and unit leaders, preventive medicine measures can effectively reduce and prevent DNBI and maximize the fighting strength of the force. This function falls within the purview of the FHP aspect of AHS. Additional information can be found in ATP 4-02.8.

2-69. Historically, more Soldiers have been rendered noneffective from DNBIs than from injury received as a direct result of conflict. Health surveillance activities must include information on U.S., multinational, and host-nation forces, and the local populace. As in combat operations, DNBIs are the leading cause of manpower losses during stability tasks. Preventive medicine personnel can identify the health threat and recommend control and preventive measures, but ultimately Commanders and unit leaders are responsible for protecting and preserving Army personnel against injury or loss that may result from exposure to these threats.

2-70. Preventive medicine falls under the protection warfighting function and is concerned with both the enemy threat and the health threat. The enemy threat produces combat casualties. This threat depends on the types of weapons used, the will of the enemy to fight, and other operational concerns. The health threat is a composite of all ongoing potential enemy actions and environmental conditions (DNBIs) that may render a Soldier combat ineffective. To counter the health threat, comprehensive health surveillance activities, OEH surveillance activities, preventive medicine measures, inspection of potable water and field feeding facilities, and field hygiene and sanitation are instituted and should receive command emphasis. Preventive medicine measures can include immunizations, pretreatments, chemoprophylaxis, and physical and chemical barriers. Field hygiene and sanitation combines with personal protective measures, to include correctly wearing the uniform and using insect repellent, sunscreen, insect netting to protect Soldiers when implemented and appropriately enforced.

ORGANIZATION AND PERSONNEL

2-71. Preventive medicine support consists of preventive medicine units and staff officers. Preventive medicine detachments and teams provide preventive medicine support and consultation in the areas of DNBI prevention, field sanitation, biosurveillance, entomology, sanitary engineering, and epidemiology to minimize the effects of environmental injuries, enteric diseases, vector-borne disease, and other health threats. Echelons above brigade staff support consists of preventive medicine staff officers organic to the MEDCOM (DS), medical brigade (support), medical battalion (multifunctional), division and corps surgeon section. These staff officers serve as the commander's principal preventive medicine consultant and environmental sciences advisors.

PRIMARY TASK AND PURPOSE

2-72. The primary tasks and purposes of the preventive medicine function are as follows:

- Disease prevention and control — prevent and control communicable diseases and provide travel medicine, population health management, and hospital acquired infection control.
- Field preventive medicine — advise commanders on appointment of unit field sanitation teams and that team members have received appropriate training, preventive medicine measures, individual Soldier personal protective measures, monitoring of potable water and field feeding facilities, and occupational and environmental health site assessments and health surveillance.
- Environmental health — provides monitoring and documentation of environmental health related data for the health of, or potential health hazard impact on, a population and on individual personnel; pest and disease vector prevention and control; health threat controls for waste disposal; identification of environmental health hazards and endemic diseases; incident-specific environmental monitoring; and climatic injury prevention and control.
- Occupational health — provides medical surveillance examination and screenings; health hazard education; surety programs; hearing and vision conservation and readiness; workplace epidemiology investigations; ergonomics; radiation protection; industrial hygiene; work-related immunization; Army aviation medicine; health hazard assessment of Army material and equipment; medical facility safety; and workplace violence prevention.
- Health surveillance and epidemiology — provides for the deployment of OEH surveillance; Defense Occupational and Environment Health Readiness System; medical surveillance; Medical Protection System; Disease Reporting System Internet; and epidemiology.
- Soldier, Family, community (public) health, and health promotion — provides Soldier health (to include Soldier medical and dental readiness), Family and community (public) health (to include childhood lead poisoning prevention and Family safety), and health promotion programs and services (to include tobacco use cessation, substance abuse prevention, and suicide prevention).
- Preventive medicine toxicology — provides toxicological assessments of potentially hazardous materials, toxicity clearances for Army chemicals and material, and toxicologically based assessments of health risks.

- Preventive medicine laboratory services — provides laboratory certification and accreditation, quality control and quality management, and the DOD Cholinesterase Monitoring Program.
- Health risk assessment — provides capabilities and activities necessary to identify and evaluate a health hazard and to determine the associated health risk (probability of occurrence and resulting outcome and severity) from potential exposure to the hazard.
- Health risk communication — provides capabilities and activities necessary to identify the personnel affected by potential or actual health and safety threats, to determine the interests and concerns that those personnel have about the threats, and to develop strategies for effectively communicating the complexities and uncertainties associated with their health risk.

SECTION VII — COMBAT AND OPERATIONAL STRESS CONTROL

2-73. The tempo of operations has increased dramatically in today's unified land operations. In contiguous and noncontiguous AO, U.S. forces may be required to fight around the clock in offensive or defensive operations. Leaders must, therefore, ensure that troops are resilient and rested. They must think faster, make decisions more rapidly, and act more quickly than the enemy. The demands on all units will be extreme regardless of their position on the battlefield. This may cause stressors in Soldiers that require COSC interventions or activities which may be followed by behavioral health practices. The medical planner needs to plan for this function in all phases of deployment. The COSC medical function is discussed in-depth in Army medical doctrine which addresses the FHP mission under the protection warfighting function; refer to FM 4-02, ATP 4-25.12, and ATP 4-02.5 for more information.

ORGANIZATION AND PERSONNEL

2-74. In the BCTs, COSC support is provided by mental health sections assigned to the medical company, brigade support of the brigade support battalion. If required, these resources can receive direct support from the behavioral health personnel assigned to the medical detachment (combat and operational stress control), if augmentation is required. Brigade mental health sections are assigned to the medical company (area support) that are normally assigned to the medical battalion (multifunctional) at EAB. If required, these resources can be augmented with behavioral health personnel assigned to the medical detachment (combat and operational stress control).

2-75. The medical detachment (combat and operational stress control) is usually assigned to the medical battalion (multifunctional) and provides direct support to the echelon above brigade units. In support of an AO, this unit provides support on an area basis and provides additional support to the BCT as required. The medical detachment (combat and operational stress control) consists of a detachment HQ and a behavioral health team made up of social workers, clinical psychologist, psychiatrist, occupational therapists, psychiatric nurses, behavioral health specialists, and occupational therapy specialist. The forward support section consists of a behavioral health team capable of breaking into sub-teams for battalion or company prevention, fitness support activities, and treatment. This provides for a total of 12 sub-teams for each detachment, giving supported commanders more teams and more flexibility in the utilization of those teams.

PRIMARY TASK AND PURPOSE

2-76. The primary tasks and purposes of the COSC function are as follows:

- Implement COSC plans or programs — prevent combat and operational stress reaction.
- Perform COSC unit needs assessment — provide command with global assessment of the unit, with considerations of multiple variables that may affect leadership, performance, morale, and operational effectiveness of the organization.
- Conduct traumatic event management for potentially traumatic events — assist in the transition of units and Soldiers who are exposed to potentially traumatic events by building resilience, promoting posttraumatic growth, and/or increasing functioning and positive changes in the unit.
- Screen and evaluate Soldiers with maladaptive behaviors to rule out neuropsychiatric behavioral health conditions — provide diagnosis, treatment, and disposition for Soldiers with neuropsychiatric or behavioral problems.

- Conduct combat and operational stress restoration and reconditioning programs to include warrior resiliency training — provide Soldiers rest or restoration within or near their unit area for rapid return to duty and to prevent posttraumatic stress disorder.
- Perform command-directed evaluation for Soldier's behavioral health status — determine if a Soldier's mental state renders him at risk to himself or others, or may affect his ability to carry out his mission.
- Screen patients with potential behavioral health issues for signs or symptoms of mild traumatic brain injury — rule out mild traumatic brain injury for Soldiers seeking assistance with behavioral health issues. If appropriate, refer individuals for a follow-up medical examination.

SECTION VIII — VETERINARY SERVICES

2-77. The United States Army Veterinary Corps is the sole provider of veterinary services to the DOD. The United States Army Veterinary Corps' mission is to execute veterinary service support essential for FHP and HSS and sustain a healthy and medically protected force; train, equip, and deploy the veterinary force; and promote the health of the military community. In some instances limited animal care is provided to multinational partners and host-nation agencies. Some U.S. agencies that may be provided veterinary support include—

- Department of Agriculture.
- Department of Commerce.
- Department of Transportation.
- Department of Homeland Security (Transportation Security Administration, United States Coast Guard, United States Customs and Border Protection, and United States Secret Service).
- Department of Justice (Drug Enforcement Agency).
- Department of State.
- Federal Bureau of Investigation.
- Central Intelligence Agency.
- Federal Emergency Management Agency.

2-78. Veterinary personnel may be attached to other U.S. military HQ, units, or detailed to support nongovernmental agencies while remaining under U.S. military commands.

VETERINARY FUNCTIONS

2-79. Veterinary services function in three categories. These categories include—

- Food protection, which is inclusive of food safety, food defense, and quality assurance services.
- Animal medical care — comprehensive medical and surgical care for working dogs and care for other government-owned animals as necessary. Preventive and casualty care as authorized for other eligible animals.
- Veterinary public health including guidance, consultation, and support regarding zoonotic diseases to reduce transmission to humans.

PRIMARY TASK AND PURPOSE

2-80. The purpose of the food protection function is to ensure quality, food safety, and food defense of food sources and food storage areas to minimize foodborne illness threats and prevent DNBI to deployed U.S. forces. The primary tasks of the food protection function include:

- Conduct food protection sanitation audits of commercial food establishments, including storage facilities for DOD procurement.
- Conduct military sanitary inspections at all food retail and storage establishments on military installations.
- Conduct contingency CBRN surveillance of potentially contaminated subsistence, as directed and required, and provide guidance on the disposition of CBRN-contaminated subsistence.

- Provide CBRN decontamination instructions for subsistence.
- Conduct surveillance and receipt inspections of operational rations and other government-owned subsistence intended for consumption or use by DOD personnel.
- Provide food microbiological and chemical surveillance of the military food supply.
- Provide assessment and guidance on temperature-abused foods.
- Support foreign humanitarian assistance and other stability tasks as directed.
- Provide food surveillance inspections of dining facilities for security and storage of food products.
- Assist in foodborne illness investigations.
- Conduct food and water risk assessments.

2-81. The purpose of the animal medical care function is to provide comprehensive medical and surgical care for working dogs and other government-owned animals as necessary. Primary tasks for this function include:

- Preventive care — maintenance of working dog health to optimize detection and patrol capabilities to detect threats to warfighters.
- Sick call — treatment of routine working dog DNBI and non-combat related emergencies as close to the working dog's unit as possible to minimize lost working days.
- Canine tactical combat casualty care — provision of lifesaving stabilization and care as close to the point of injury as possible to maximize survival rates. This care is provided by the working dog handler and animal care specialist (Veterinary Role 1).
- Resuscitation and emergency surgical stabilization — provision of resuscitative surgical care on an area support basis to maximize survival rates. This care is provided by a Veterinary Service Support Team at a veterinary Role 2 treatment facility.

  Military working dog hospitalization — provision of short-term hospitalization capability (not to exceed 72 hours) for patients requiring direct veterinary care to reduce medical evacuation and maximize return to duty rates. The Veterinary Medical and Surgical Team at a veterinary Role 3 treatment facility provides this capability. Veterinary Role 3 medical care also includes referral for veterinary diagnostic, therapeutic, dental and surgical procedures, and requires advanced clinical capabilities.

Note: Contract working dogs will receive veterinary support according to contract specifics and resource availability.

- Medical evacuation support — augmentation of standard medical personnel by veterinary personnel may be necessary in order to maximize survival rates of working dogs during MEDEVAC to higher roles of care. Veterinary personnel must be allowed access to the patient en route.

Note: When veterinary service providers are unavailable, non-veterinary healthcare providers are authorized to perform limited emergency procedures for military working dogs. This care is most likely to be required at Role 1 or Role 2. See FM 4-02 for further information.

2-82. The purpose of the veterinary public health function is to prevent or mitigate sources of DNBI for deployed U.S. forces and working animals, and to protect U.S. agricultural systems. Primary tasks for this function include:

- Support prevention and control programs to protect Service Members from foodborne diseases.
- Evaluate zoonotic disease data collected in the AO and provide advice to preventive medicine elements, patient treatment elements, and higher headquarters on potential hazards to humans.
- Establish animal disease prevention and control programs to protect Service Members and other DOD and multinational personnel from zoonotic diseases.
- Assess the presence of animal diseases that may impact the CONUS agriculture system if contaminated personnel or equipment are allowed to redeploy.

- Investigate unexplained animal deaths to include livestock and wildlife to detect any threats to Service Members, working animals, or U.S. agricultural systems.
- Establish animal disease prevention and control programs to protect military working animals from infectious diseases.
- Provide technical consultation for zoonotic disease and pest control programs such as rabies advisory boards and feral animal risk mitigation.

2-83. Additional information on veterinary services is contained in FM 4-02 and ATP 4-02.8.

SECTION IX — MEDICAL LOGISTICS

2-84. Medical logistics is distinguished from other logistics in that its products and services are used almost exclusively by the medical system and are critical to the success of the AHS mission. These products and services are used to provide medical support and are subject to strict standards and practices that govern the health care industry in the U.S. Medical logistics is focused on the specialized requirements of a multifunctional Military Health System in order to reduce morbidity and mortality among Soldiers, whereas other logistics are focused upon the sustainment of major end items and general troop support in order to maximize combat power.

2-85. Resupply to the theater is preplanned and defined in the appropriate logistical plans. Due to the technical nature of medical logistics system, coupled with the likelihood of a rapidly changing operating environment, medical planners must build flexibility into the plans. The medical logistics planner must have a comprehensive understanding of operations and tactical plans as well as a thorough knowledge of the entire logistics system (including those organizations and activities responsible for specific aspects of support).

2-86. Planning for mobilization of medical logistics units to arrive early in the time-phased force deployment data flow and the buildup of medical logistics support will need to be synchronized to support the flow of the medical force. To enhance Class VIII support, the medical planners will—

- Identify the specified and implied time-phased material requirements necessary to support the OPLAN.
- Identify the capabilities, limitations, and requirements of aerial and sea ports of debarkation.
- Ensure coordination for the movement of supplies and equipment.
- Identify pre-positioned stocks in theater.
- Identify host support, if available.
- Identify joint and multinational logistics support requirements to include the distribution plan.

2-87. Class VIII supply support (including blood management), optical fabrication, medical maintenance, medical contracting, and health facilities planning are all key aspects of the medical logistics support plan, which is a part of the AHS support plan. When approved, the medical logistics plan becomes a directive to medical logisticians in subordinate commands and serves as a guide for working out the details involved in the provision of Class VIII supply support for the command.

MEDICAL LOGISTICS FUNCTIONS

2-88. The medical logistics mission is to provide support where and when it is required in the fastest, most inexpensive, and most practical way possible. Medical logistics functions include—

- Class VIII medical supplies (medical materiel to include medical peculiar repair parts used to sustain the AHS).
- Optical fabrication.
- Medical equipment maintenance.
- Blood storage and distribution.
- New technology such as oxygen generation, resuscitative fluids production, blood substitutes, and frozen blood.

2-89. The successful operation of the medical logistics system is directly dependent upon—

- Integration with the whole AHS.
- Supervision by appropriate command surgeons.
- Anticipatory and proactive support rather than reactive support.

2-90. The Class VIII supply function for AHS units operating Roles 1 and 2 MTFs are primarily the management of medical equipment sets and basic ordering for replenishment. The replenishment function within the BCT is performed by the brigade medical supply officer of the brigade support medical company.

2-91. Class VIII support for Role 3 MTFs is a vital part of its mission and includes management of a commodity that must be adapted to specific theater health care requirements and to the distribution plans and capabilities provided by sustainment organizations.

2-92. Field Manual 4-02 discusses the specific characteristics which set the Class VIII system apart from other classes of supply. One such characteristic is the special protection afforded by the Geneva Conventions to medical supplies.

2-93. During port operations and reception, staging, onward movement, and integration AHS units must be capable of operations immediately upon initial entry of forces. Therefore, medical logistics support must be included in planning for port opening and early entry operations. Port operations may also include the issue of AHS unit sets from Army pre-positioned stocks, integration of potency and dated items, refrigerated, and controlled substances with those assemblages. In almost every operation, lessons learned reflect that theater medical logistics units must also provide Class VIII material for unit shortages that were not filled prior to deployment.

2-94. In theater, medical detachment, blood support (MDBS), is responsible for the collection, manufacturing, storage, and distribution of blood and blood products to BCTs, corps, and echelon above corps medical units. The MDBS provides support to other Services when required. Within the joint operations area the MDBS establishes the theater blood distribution plan including storage levels, locations, and schedule of resupply. The MDBS also maintains the theater blood storage depot. The MDBS provides vital support to Roles 2 and 3 MTFs and special operations. Planners should be familiar with its capabilities and allocation when planning any operation. See Appendix F for basis and rules of allocation.

PRIMARY TASK AND PURPOSE

2-95. The primary tasks and purposes of the medical logistics functions are as follows:

- Medical material procurement—program funding, develop, acquire, and field the most cost-effective and efficient medical materiel support to satisfy material requirements generated by doctrinal and organizational revisions to tables of organization and equipment, as well as user-generated requirements, state-of-the-art advancements, and initiatives to enhance materiel readiness.
- Class VIII management and distribution—provide intensive management and coordinated distribution of specialized medical products and services required to operate an integrated AHS anywhere in the world in peace and through the range of military operations.
- Medical equipment maintenance and repair—perform appropriate maintenance checks, services, repairs, and tests on medical equipment set component equipment items as specified in applicable technical manuals or manufacturer operating instructions.
- Optical fabrication and repair—fabricate and repair prescription eyewear that includes spectacles, protective mask inserts, and similar ocular devices for eligible personnel in accordance with applicable Army policies and regulations.
- Blood management (distribution)—provide collection, manufacturing, storage, and distribution of blood and blood products to EAB AHS units. Provide distribution of blood and blood products to Role 2 and 3 MTFs, special operations, and forward surgical teams and forward resuscitative surgical teams.
- Centralized management of patient movement items—support in-transit patients, exchange in-kind patient movement items without degrading medical capabilities, and provide prompt recycling of patient movement items from initial movement to the patient's final destination.

- Health facilities planning and management—provide a reliable inventory of facilities that meet specific codes and standards, maintains accreditation, and affords the best possible health care environment for the Soldiers, Family members, and retired beneficiaries.
- Medical contracting support—ensure the establishment and monitoring of contracts for critical medical items and services.
- Hazardous medical waste management and disposal—ensure the proper collection, control, transportation, and disposal of regulated medical waste in accordance with applicable Army and host-nation policies and regulations.
- Production and distribution of medical gases—ensure the production, receipt, storage, use, inspection, transportation, and handling of medical gases and their cylinders in accordance with all applicable regulations.

2-96. For additional information on the medical logistics system refer to FM 4-02 and ATP 4-02.1.

SECTION X — MEDICAL LABORATORY SERVICES

2-97. The AHS medical function of medical laboratory services include both the clinical laboratories found in Role 2 and 3 MTFs, area medical laboratory, and medical detachment, blood support. These types of laboratories are focused on different aspects of the medical laboratory function in their support of the AHS mission.

CLINICAL LABORATORY SERVICES

2-98. All Role 2 MTFs provide limited clinical laboratory services within the AO. They perform basic procedures in chemistry, hematology, urinalysis, microbiology, and serology. Role 2 MTFs receive, store, maintain, and transfuse blood products, and can collect whole blood for emergency use.

2-99. The clinical laboratory in the Role 3 hospital performs procedures in biochemistry, hematology, urinalysis, microbiology, and serology in support of clinical activities. The hospital also provides blood-banking services, and can collect whole blood and apheresis platelets for emergency use.

AREA MEDICAL LABORATORY SERVICES

2-100. The area medical laboratory (AML) provides environmental medical laboratory services in theater. The AML functions independently of the individual patient care mission of deployed MTFs. This unit's focus is on rapid health hazards identification and assessment within an AO. These operational health hazards include CBRN threat agents, endemic diseases, and other health threats associated with OEH hazards. The area medical laboratory tests air, water, soil, food, waste, insects, and animals (vectors) for a broad range of microbiological, radiological, and chemical contaminants. The AML is capable of tailoring its deployable assets to meet specific operational objectives and split-based mission requirements. When available, CONUS based laboratory assets or host nations assets provide procedures not available in theater. These services still may not be able to provide critical time-sensitive information.

2-101. The AML design is modular so that individual functional sections or sectional teams may deploy incrementally and independently from the parent base. The AML provides the operational commander with real-time or near real-time health hazard assessment capability.

2-102. The identification and evaluation of health hazards in support of joint and combined military operations requires the use of sophisticated techniques and advanced technology. New applicable technologies are available from commercial, industrial, educational institutions, and military research and development facilities within or outside of the AO. The application of AML CBRN agent identification capabilities enhances the integration, validity, and use of the Army's collective efforts to protect troops from CBRN threats.

2-103. Officer and enlisted laboratory personnel are a diverse group of individuals with a broad range of education and experiences ranging from small laboratories to medical center or research facilities. In addition to the active forces, many of the wartime laboratory personnel assets will come from the reserve components. The medical planner must consider the diversity of personnel qualifications and experience when developing requirements for realistic laboratory programs. The medical planner should—

- Understand the existing concepts for the allocation of medical laboratory assets.
- Define, in general terms, the capabilities of those assets.
- Examine the factors that may impact upon laboratory resources.
- Determine mechanisms to maintain responsive, effective, and efficient support of the AHS mission.

PRIMARY TASK AND PURPOSE

2-104. The primary tasks and purposes of the medical laboratory function performed by clinical laboratory services include—

- Analysis of medical specimens—provide for the identification, diagnosis, and treatment of diseases and pathogens.
- Blood-banking services—provide laboratory support to type and cross-match blood specimens for transfusion services. Provide limited testing of blood products.

2-105. The primary tasks and purposes of the medical laboratory function performed by the AML include—

- Analytical, investigational, and consultative capabilities—identify CBRN threat agents in OEH, biomedical, and chemical specimens, and other samples from the AO. Assist in the identification of OEH hazards and endemic diseases.
- Special environmental control and containment—evaluate biomedical specimens for the presence of highly infectious or hazardous agents of operational concern.
- Data and data analysis—support medical analyses and operational decisions.
- Medical laboratory analysis—support the diagnosis of zoonotic and significant animal diseases that have an impact on military operations.
- Deploy modular sections or sectional teams—interface with preventive medicine teams, veterinary teams, forward deployed AHS units, biological integrated detection system teams, and chemical company elements operating in the AO.

2-106. For additional information refer to FM 4-02 and ATPs 4-02.3 and 4-02.5.

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Chapter 3

Army Health System Support Plans and Orders

The AHS support planning process is not unique and is the same process that all Army planners use to communicate the commander's vision and synchronize their forces. It is unique in the number and complexity of services and support the Army Medical Department provides. From estimating the number and types of casualties, to planning for medical evacuation, food inspections, and the support requirements for the treatment of combat injuries and diseases, the medical planner has to bring together the numerous medical functions required to support the mission.

SECTION I – PRINCIPLES OF PLANNING

3-1. Planning is the art and science of understanding a situation, envisioning a desired future condition, and laying out effective ways of bringing that future about (ADP 5-0). Planning consists of two separate but interrelated components: a conceptual component and a detailed component. Successful planning requires the integration of both these components. Army leaders employ three methodologies for planning: the Army design methodology, the military decision making process, and troop leading procedures. Commanders determine how much of each methodology to use based on the scope of the problem, their familiarity with the methodology, the echelon, and the time available (ADP 3-0). Planning results in a plan or order that communicates the commander's vision and directs actions to synchronize forces in time, space, and purpose for achieving objectives and accomplishing missions.

3-2. The Army design methodology is a methodology for applying critical and creative thinking to understand, visualize, and describe unfamiliar problems and approaches to solving them. The Army design methodology is particularly useful as an aid to conceptual thinking about unfamiliar problems. To produce executable plans, commanders integrate it with the detailed planning typically associated with the military decision making process. Commanders who use the Army design methodology may gain a greater understanding of their operational environments and the problems and visualize an appropriate operational approach. With this greater understanding, commanders can provide a clear commander's intent and concept of operations. Such clarity enables subordinate units and commander to take initiative. The Army design methodology is iterative, collaborative, and continuous. As the operations process unfolds, the commander, staff, subordinates, and other partners continue to learn and collaborate to improve their shared understanding. An improved understanding may lead to modifications to their operational approach or an entirely new approach altogether.

3-3. The *military decision-making process* (MDMP) is an iterative planning methodology to understand the situation and mission, develop a course of action, and produce an operation plan or order. As an interactive planning methodology, it integrates activities of the commander, staff, subordinate HQ, and other partners. This integration enables them to understand the situation and mission; develop, analyze, and compare courses of action (COAs); decide on a COA that best accomplishes the mission; and produces an operation order (OPORD) for execution. The MDMP applies both conceptual and detailed approaches to thinking but is most closely associated with detailed planning. For unfamiliar problems, executable solutions typically require integrating the Army design methodology with the MDMP. The MDMP helps leaders apply thoroughness, clarity, sound judgment, logic, and professional knowledge so they understand situations, develop options to solve problems, and reach decisions. While medical planners will collaborate with the commander and staff during MDMP, the medical planner must include subordinate medical organizations into planning efforts. This provides time for planning and preparation of their staff and units and also ensures plans accurately reflect AHS support capabilities. Coordination with the United States Air Force liaison

officer is critical for synchronization of intra and intertheater medical regulating. See ADP 5-0 for more information on MDMP and ATP 4-02.2 for additional information on medical regulating.

3-4. Troop leading procedures are a dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation (ADP 5-0). Heavily weighted in favor of familiar problems and short time frames, organizations with staffs typically do not employ troop leading procedures. More often, leaders use troop leading procedures to solve tactical problems when working alone or with a small group. For example, a company commander may use the executive officer, first sergeant, fire support officer, supply sergeant, and communications sergeant to assist during troop leading procedures (ADP 3-0).

3-5. This manual will not attempt to replicate the information that is already presented in other Army publications that cover this topic in detail. For detailed information on the Army operations process, refer to ADP 5-0, ADP 6-0, and FM 6-0. These publications define and describe the operations process. They provide the principles, commanders, and staffs to effectively plan, prepare, execute, and continuously assess operations.

SECTION II — ARMY HEALTH SYSTEM SUPPORT PLANNING

3-6. Current Army Health System support planning addresses the management of normal day-to-day operations, while short- and long-range planning addresses projected operations of successively longer periods. Planning is a continuous process. The medical planner must remain sensitive to the demands for AHS support based upon constantly changing situational and operational requirements. During current operations, staffs at all levels (especially higher command levels) must continuously plan for subsequent operations and contingencies. Regardless of the type of military operation being supported or the level of command providing the support, AHS support plans must be made. Plans must be well communicated to be effective. The planner must proceed in an orderly, progressive manner to ensure maximum effort and completeness. The specific time required to plan varies with the type, size, and level of the command concerned. The amount of detail required to plan will also vary with the:

- Type of command.
- Experience of the commander and staff.
- Complexity of the operation.
- Factors such as the participation of other Services, agencies, and multinational partners.
- Time available.

3-7. Planners must develop well thought out plans and validate the plans through rehearsals, field training exercises, and command and staff simulations if resources and time permit. The process of thinking through a plan and conducting "What if?" drills by changing critical variables that are especially useful. This process allows the medical planner to envision potential results and to anticipate problems. Consequently, the medical planner can become proactive instead of being reactive. The proactive planner can eliminate potential problems and mitigate risk before they cause adverse consequences. They have more time to accomplish the required synchronization to adjust operations when adverse consequences arise because they have anticipated problems and have already considered potential solutions. The proactive planner has more time to address unanticipated problems and more time to plan AHS support for future operations.

3-8. Effective and timely planning is essential to operate successfully on the battlefield. Failure in the planning process will result in commanders, their staffs, and subordinate units finding they are unprepared to function in military operations. Planners must have the initiative to ask questions that may affect the performance of their units, and they must know their units well enough to answer questions when asked.

3-9. A good AHS support plan has the following qualities:

- Provides for accomplishing the mission.
- Is based on facts and valid assumptions. All pertinent data has been considered for accuracy, and assumptions have been reduced to a minimum.
- Provides for the use of existing resources. These include resources organic to the organization, and those available from higher HQ and other Services.
- Provides for the necessary organization. It clearly established relationships and assigns responsibilities.

- Provides for personnel, materiel, and other arrangements for the full period of the contemplated operation.
- Provides for decentralized execution of the plan. It delegates authority to the maximum extent consistent with the necessary control.
- Provides for direct coordination during execution between all levels.
- Simplicity- it reduces all essential elements to their simplest form, and eliminates those elements not essential to successful action.
- Flexibility- it leaves room for adjustments because of operating conditions and, where necessary, stipulates alternate COAs.
- Provides for control. Adequate means exist, or are provided, to carry out the plan according to the commander's intent.
- Coordination- all elements fit together, control measures are complete and understandable, and mutual support requirements are identified and provided.

3-10. The commander provides planning guidance to the staff as required. The frequency, amount and content of planning guidance will vary with the mission, time available, situation, information available, and experience of the commander and staff. The commander may choose to issue initial planning guidance to the staff when the mission to be supported is announced, the commander must take care not to unduly bias running estimates. This guidance is used to direct or guide the attention of the staff in the preparation or revision of the running estimates and serves to expedite the planning process. Planning guidance should include all elements of the commander's intent.

3-11. Basic planning considerations, the commander's intent and the mission assigned to the operating forces must be the basic consideration of all components in their planning for AHS support. Preparation and planning for AHS support must be initiated early and designed specifically to support the operation. Certain basic factors and premises must be used for sound AHS support planning. Among the most important are:

- Preparing an AHS support estimate and a concept of operation.
- Coordinating the efforts of the health services of the component forces, and multinational partners to make maximum synchronized use of available resources.
- Planning to assume flexibility for unseen contingencies such as enemy use of weapons of mass destruction.

3-12. Coordination is one of the most essential elements in successful planning. From the beginning, the planner must continuously coordinate the various types of operations with the commander and his assistants. With knowledge of the mission, the current situation, and the objectives, the planner can better plan for the support that will be required. This method enables him to begin the planning for support early and allows him time for more thorough planning. The planner must ask questions such as what resources are required, and how to obtain them.

3-13. The medical planner must also coordinate with those staff representatives at the various HQs who can furnish needed information and must coordinate their plans with the medical planner. They must begin early coordination in those areas requiring close AHS interface within the sustainment community. Building the AHS interface as part of the sustainment community is critical. The AHS depends on the sustainment system for a multitude of support services such as—

- Nonmedical transportation.
- Potable water resupply.
- Liquid waste disposal.
- Direct support and general support maintenance.
- Trash and solid waste disposal.
- Medical intelligence dissemination.
- Mortuary affairs.
- Site support by engineer units.
- Movement control.
- Reconstitution.

- Delivery of Class VIII supplies.
- Assistance in movement of medical units.
- Nonmedical augmentation for patient decontamination operations and in mass casualty situations.

3-14. Commanders and staff must know how, when, and with whom to coordinate and synchronize support both internally and externally. Proficient synchronizers tend to think about what is happening and what will be happening two levels down, two levels up, and on each side.

SECTION III — THE ARMY HEALTH SYSTEM SUPPORT ESTIMATE

3-15. The surgeon's responsibility, after the commander provides planning guidance, is to prepare estimates of requirements and descriptions of projects to be undertaken for establishing adequate AHS to support the mission. He prepares this in his role as a member of the commander's personnel and special staff. The surgeon and their staff make an AHS support estimate that may stand alone, or that may be incorporated into the personnel estimate. This estimate forms the basis for the subsequent AHS support plan. All AHS possibilities that could affect the successful support of an operation must be considered. The estimate addresses all AHS aspects of the operation and contains both facts and assumptions based on the staff's experience within their area of expertise.

3-16. The commander uses the AHS support estimate, along with estimates of other staff sections, in the preparation of his own estimate. After considering all the staff input, the commander completes his own estimate and makes his decision. In the cases of a MEDCOM (DS) or a medical brigade (support) HQ, the estimate is made by the commander, assisted by his staff, and normally results in the publication of the AHS plan for the command. At lower level echelons, the estimate is a continuous mental process integrated into the planning process.

3-17. The surgeon and his staff must determine what basic load modification is required, what additional medical skills are required, and any mission-unique training that must occur. The surgeon must know his intelligence element, what medical related information and medical intelligence is available, how medical intelligence is disseminated, and how to integrate intelligence in general and medical intelligence in particular into AHS support OPLANs and OPORDs.

3-18. The AHS support mission is the basis for the estimate and is stated clearly in the estimate. It always conforms to the operations in which the supported personnel are engaged

FORMAT OF THE ARMY HEALTH SYSTEM SUPPORT ESTIMATE

3-19. The process used to prepare an AHS support estimate is the same as that used in preparing an operational running estimate. The surgeon and his staff focus on the medical function and how factors can affect the way they are applied and planned for. These estimates may be prepared orally or in writing. Often, only the staff officer's conclusion or recommendations are presented to the commander.

3-20. An example of an AHS support estimate is found in Appendix A. This format is applicable to any echelon of command and can be used under any operational condition. It is lengthy and includes many more details than may be needed in some situations. Army Health System planners should tailor their estimate according to their mission needs. It will need constant revisions as circumstances change, so that planned support is properly provided to the command from the time it is mobilized until it is inactivated.

3-21. The AHS support estimate is intended to be a timesaving and integral part of providing adequate support for all types of operations. If the AHS support estimate is prepared by the surgeon's staff at the Army Service component command, corps, or division level, it must support the tactical commander's intent. The estimate is developed through coordination with the sustainment and other functional cells. If prepared by a command such as a MEDCOM (DS), medical brigade (support), or medical battalion (multifunctional), it becomes the estimate of the medical commander assisted by his staff. (S-4 for sustainment). Normally, estimates at the division surgeon's level are not formal written documents; however, AHS support considerations may appear in a written personnel estimate prepared by the assistant chief of staff, personnel, or the battalion or brigade personnel staff officer.

SITUATION AND CONSIDERATIONS

3-22. The AHS support situation consists of facts, assumptions, and deductions that can affect the operation. In this logical and orderly examination of all the AHS support factors affecting the accomplishment of the mission, the medical planner must be familiar with the commander's intent. The information required includes, medical related information and medical intelligence which is obtained through supporting intelligence organizations, and from the National Center for Medical Intelligence (NCMI).
Refer to ATP 2-01 for a discussion on information requirements, priority intelligence requirements, and commander's critical information requirements. The medical planner must be able to conduct a thorough evaluation of the enemy situation and the AO from the standpoint of their effects on the health of the command, and the AHS support operations.

AREA OF INTEREST

3-23. The *area of interest* is defined as that area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. (JP 3-0). The *area of operations* is an operational area defined by a commander for land and maritime forces that should be large enough to accomplish their missions and protect their forces. (JP 3-0). This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. It is a geographic area from which information is required to facilitate planning. The area of interest may fall outside the AO and may or may not be applicable to a particular operation. The area of interest would be of interest in instances where portion of the overall AHS support plan fall outside the AO.

CHARACTERISTICS OF THE AREA OF OPERATIONS

3-24. The medical planner should obtain medical related information and medical intelligence regarding the AO from the Office of the Surgeon General (Intelligence and Security Division), supporting intelligence element and the National Center for Medical Intelligence. For more information regarding medical intelligence, refer to FM 4-02. This information must be considered in the planning process. The characteristics of the AO influence the number of patients, as well as their location, collection, and evacuation.

Terrain

3-25. Significant consideration of how terrain can influence AHS support operations may include:

- Topography has the same bearing on AHS support as it does on tactical planning. Using terrain to one's advantage may reduce combat casualties therefore decreasing the anticipated patient workload. In AHS support operations, the medical planner should determine the most likely routes a wounded or injured Soldier will use to reach the supporting MTF. This is referred to as the line of patient drift and will normally be over the least hazardous and easiest route to traverse
- (such as around the base of hills versus climbing over the hill or along established roads or path versus open or rough terrain).
- Natural conditions may favor large populations of insects and arachnids which commonly are vectors of disease; and therefore, could directly increase the incidence of disease. This is particularly true if there are significant waterways and stagnant ponds (such as animal watering holes).
- Mountains, forests, swamps, subterranean, and urban terrain can be expected to hamper AHS support. Operations at high elevations frequently results in reduced military performance and due to the exposure to low partial pressure of oxygen, can result in acute mountain sickness (hypobaropathy). Soldiers that are allowed to acclimatize prior to operating at higher elevations will have less altitude-related ailments. Transfer of patients from shore to ship is particularly dependent upon coastline and harbor conditions. Availability of roads, landing strips, and railroads will be important in developing evacuation alternatives. Urban operations will tax medical resources in locating, acquiring, treating, and evacuating wounded or injured personnel from debris and rubble, above, below, and at ground level. For more information on operation in urban terrain refer to Army Tactics, Techniques, and Procedures (ATTP) 3-06.11.

Terrain factors such as protection, shelter, and water supply are considered in consonance with evacuation alternatives and with the selection of MTF locations. Evacuation medical resources must be augmented when using different terrain. Often when required to traverse difficult terrain, an ambulatory patient will have to be evacuated using a litter and litter bearers because they are unable to navigate through rocky or swampy terrain. In mountain and extreme cold operations, the extended time required to evacuate patients by litter may require the medical planner to establish warming stations along the evacuation route to protect the patient and litter bearers from the effects of the cold.

- An increase in the hospital bed allocation should be considered if the terrain analysis suggests a significant increase in battle injury, wounded in action (WIA), and DNBI admissions or difficulty in evacuating patients. Preventive medicine units should be tasked to reinforce forward deployed units if disease potential warrants.
- The duration of hazards from CBRN warfare agents may increase in the forest where the air is still and the foliage is thick.
- Different terrain will hinder some evacuation platforms more so than others. These limitations should be identified early in the planning process by coordinating for augmentation of other medical and casualty evacuation platforms or treatment capabilities. For example, if an AO favors ground versus air medical evacuation, the resulting risk to life, limb, eyesight, or disability due to a delay in evacuation must be mitigated. This risk may be reduced by increasing the number of ground ambulances, and MTFs in order to sustain proximity to the population at risk. See ATP 4-02.2 for medical evacuation in different environments.

Weather and Climate

3-26. The weather, climate, and the season in the AO may influence the conduct of AHS support operations and may adversely have an impact on the health of the command. Examples include:

- Climate and the extent of acclimatization to the climate variants influences the incidence of heat-related injuries and other medical conditions that detract from combat unit effectiveness and may also dictate the use and enforcement of work and rest cycles. Refer to ATP 4-25.12 for additional information.
- Tropical, desert, and tundra conditions strongly favor the growth of the arthropod populations that increase the incidence of disease casualties. Preventive medicine elements become increasingly important under such adverse conditions.
- Factors such as humidity, extreme heat, extreme cold, and blowing sand may affect the storage life of medical supplies and equipment.
- Precipitation may affect available water supplies, impact on hospital site selection, and damage unprotected supplies. Rain and snow will have a dramatic effect on roads, evacuation routes, and as well as turnaround, and en route times.
- Temperature variations may require special protection of medical supplies and may increase the patient load because of heat and cold injuries. Weather also adversely has impacts on the duty performance when Soldiers must operate in mission-oriented protective posture, and thus has a direct impact on heat casualty volume. Additionally, requirements for MTFs, supplies, and evacuation medical resources can be expected to increase. Because the rate of deterioration of medical logistics is influenced by both climate and weather, storage facilities must be estimated accordingly. Evacuation alternatives, particularly by air, will be highly influenced by weather conditions.

Enemy Forces

3-27. From their specialized point of view, the command surgeon must consider the enemy's ability to adversely affect the AHS support operations of the command. The enemy's—

- Compliance with the Geneva Conventions could alter the employment of AHS support assets if the enemy is likely to attack the friendly AHS support system, or if they are known to have attacked a medical unit. It could also determine the type of medical care U.S., ally, and multinational prisoners of war can expect to receive if captured.

- Strength, disposition, probable movements, logistic situation, and combat efficiency must be considered to estimate the number of patients requiring medical evacuation and hospitalization.
- Ability to inflict conventional and unconventional CBRN warfare casualties is a concern. The type of enemy weapons employed will influence the number and type of combat casualties.
- Heavy artillery bombardment, air attacks, surprise attacks, increased lethality weapons, effective and agile tactics, guerrilla or terrorist attacks, use of improvised explosive devices and other high explosives, and continuous operations increase combat and operational stress casualties. Supplemental medical evacuation platforms and hospitalization medical resources may be required. Frequently an unpredictable use of improvised explosive devices may delay ground evacuation operations and limit freedom of movement for medical platforms, as ground ambulances may require armed escorts to accompany movement and up armoring of ambulances to enhance survivability.

3-28. Medical capabilities, sanitation discipline, and the health of potential detainee can be expected to influence the commands medical workload, as well as the detainee patient workload, and the FHP portion of the AHS support plan.

Friendly Forces

3-29. A preliminary estimate of medical workloads can be made when the friendly forces strength, combat efficiency, position, weapons, and plan of action are compared with those of the enemy. This comparison considers the tactical commanders plan to determine the location of areas of patient density and the best placement of medical units.

3-30. The enemy's ability to disrupt operations anywhere within the AO of the command must also be considered. Medical units positioned away from the main areas of combat, must be incorporated into base clusters. Units must be positioned logically to ensure maximum security. These facilities are so numerous that in many cases the ideal type of security may not be available. For information on the Geneva Convention for the Amelioration of the Conditions of the Wounded and Sick in Armed Forces in the Field and the U.S. policy on the use of medical personnel in perimeter defense refer to FM 4-02. The threat to these units must not be increased by positioning them close to lucrative targets (such as a command post or ammunition storage facilities).

3-31. The health of the command is an important consideration in making the AHS support estimate. Factors that affect patient estimates and indicate command and medical measures that should be considered prior to each operation being planned are as follows:

- Acclimation of troops.
- Presence of disease.
- Status of immunizations, chemoprophylaxis, pretreatments, barrier creams, and insect repellents.
- Status of nutrition.
- Adequacy of clothing and equipment.
- Physical conditioning.
- Oral health fitness level.

Strengths to be Supported

3-32. The strengths to be supported may be shown in a matrix where the personnel strength is broken down into categories indicating the types and amounts of support to be required. These categories may include United States Army, Navy, Air Force, Marine Corps, and Coast Guard; civilian contractors; multinational forces; enemy prisoners of war (EPWs); indigenous civilians; retained persons; dislocated civilians; civilian internees; and military and contract working dogs. Various experience rates are applied against these strengths to estimate the expected patient workload. The detail in which the tabulation is prepared varies with the scope and type of the operation. A sample matrix is provided in Table 3-1 on page 3-8. Using checkmarks, the medical planner can use this tool to graphically depict what type of support is provided to each population group or to indicate the subpopulation group to be supported for specific services.

Table 3-1. Sample strengths to be supported matrix

Strengths to be supported matrix										
Supported unit/element		***Casualty care***							***Medical evacuation***	***Medical logistics***
Type	***POP***	***ROLE 1***	***ROLE 2***	***ROLE 3***	***PVNTMED***	***DENT***	***COSC***	***LAB***		
ARMY										
USAF										
USN										
USMC										
USCG										
MULTI-NATIONAL										
HOST-NATION										
DOD CIVILIANS										
DOD CONTRAC-TORS										
EPW										
RETAINED										
DETAINED										
MWD										
OTHER										

SAMPLE

Legend:			
COSC	combat and operational stress control	POP	population
DENT	dental preventive medicine	PVNTMED	preventive medicine
DOD	Department of Defense	USAF	United States Air Force
EPW	enemy prisoner of war	USCG	United States Coast Guard
LAB	laboratory	USMC	United States Marine Corps
MWD	military working dog	USN	United States Navy

Note:
Fill in the population supported by unit/element supported and anticipated population by Role of Care.

Civilian Considerations

3-33. Dislocated persons and other civilian subpopulations in rural and urban environments will occur when combat or civil disturbances occur. The dislocated civilians and other civilian populations also tend to be sources of communicable disease (endemic disease to which U.S. forces have not developed immunity). Cities and towns tend to be located along axis of peacetime economic activity and confront sustainment units moving on main supply routes and at crossroads of principal highways. Even if a disease outbreak is suspected, bypass of such areas is generally impractical. Dislocated persons and populations, if not properly managed by local authorities or military police, also tend to concentrate on major transportation routes.

3-34. Civil affairs and military police have the responsibility of working with the local authorities to manage the movement of dislocated civilian populations. Dislocated civilian operations include the planning and management of dislocated civilian routes, collection points, assembly areas, and camps, normally in support

of host-nation and intergovernmental organization efforts. They also include foreign humanitarian assistance support to the affected populace. Civil affairs and military police are key components to the successful planning and execution of dislocated civilian operations. Commanders should seek their involvement early in the planning process. For additional information on civil affairs and military police support to dislocated civilian operations, refer to FM 3-57, FM 3-39, FM 3-63, and ATP 3-57.10. Although the medical planner must consider and anticipate the potential requirements for providing health care to civilian populations, the Army operational medicine does not plan these operations. The commander and staff are responsible for the development of civil-military operations. The assistant chief of staff, civil affairs operations is responsible for assisting in the development of these plans, coordinating and synchronizing civil affairs capabilities supporting the operations, based on the goals and end states of the mission. Therefore, it is imperative that the command surgeon and medical commander establish a close liaison with the supporting civil affairs elements to coordinate the development of the health aspects for the civil-military operations.

3-35. Preventive medicine teams could be tasked to assist local authorities to reestablish essential civilian public health services or to provide preventive medicine support to dislocated civilian camps, when directed. This mission is usually conducted as foreign humanitarian assistance.

3-36. Veterinary units may be used to assist in the control of zoonotic diseases that present a risk to the human population or to agriculture in the AO. Veterinary units may also inspect subsistence fed to dislocated civilians and detainees to prevent foodborne diseases, as required.

3-37. If medical resources permit, MTF or medical treatment and holding cot allocations could be increased to accommodate known or suspected outbreak of disease. Augmentation of medical resources with the deployment of a medical detachment, minimal care, can rapidly expand the unit's holding capacity.

3-38. Class VIII could similarly be accumulated in anticipation of a larger demand. If foreign humanitarian assistance or other missions in support of the civilian population are anticipated, the medical planner should ensure arrangements are being made with the United States Army Medical Research and Materiel Command to obtain the medical equipment set for humanitarian assistance. If significant requirements for the health care delivery to the civilian population is anticipated, the medical planner should request augmentation from other medical units within the medical command such as the hospital augmentation team, special care. This team can provide medical specialty care for pediatric and geriatric patients. It is essential that the medical planner coordinate with the supporting staff judge advocate on limitations and prohibitions of 10 USC on the use of military medical supplies for civilian populations as well as provisions of the Geneva Conventions regarding the storage and use of medical material. Additionally, eligibility for medical care matrix should be developed, in conjunction with the staff judge advocate, for dissemination throughout the command's MTFs. See ATP 4-02.1, Medical Logistics for more information regarding medical materiel.

Other

3-39. This section may include any pertinent information that may assist in the estimation process. The following paragraphs provide topics that may or may not be used.

Flora and Fauna

3-40. Certain kinds of arthropods, animal diseases, and toxic plants encountered in the AO may also contribute to the noneffective rate of the command. Orientation of personnel and safeguards against arthropods, animals, and vegetation may be necessary. Medical intelligence of the AO should contain this type information.

Disease

3-41. The effects of major diseases are delayed because of incubation periods. Knowledge of potential losses to malaria, dengue, sand fly fever, typhus, Escherichia coli diarrhea, hepatitis A, hepatitis B, hepatitis C, and other endemic disease (a disease that is constantly present to a greater or lesser degree in a certain population or region) is invaluable in determining appropriate preventive and control measures. These measures include requirements for basic personal protective measures, immunizations, chemoprophylaxis, barrier creams, pest management, or other appropriate measures. Should time not allow for preventive measures; disease

information will be essential in estimating disease rates, and for projecting strength changes in maneuver units.

3-42. If disease is expected to exert a significant impact on the force, consideration should be given to projecting changes in the strength of subordinate components not only for combat losses expected during the operation of concern, but also from disease losses that will exert their operational impact during existing and future operations. The return to duty rates of a WIA and DNBI cases are also of primary interest to the commander and the staff.

Local Resources to Include Medical Resources

3-43. The medical planner requires information concerning the availability of local sources of such items as food, ice, water, pharmaceuticals, and medical gases (oxygen and anesthetics).

3-44. Although other units of the command are responsible for procuring food and water, appropriate veterinary elements are responsible for assessing and certifying approved sources for food and bottled water. Preventive medicine units are responsible for inspecting water for potability and field feeding operations.

3-45. Availability of pharmaceuticals or medical gases in the area affects supply levels and transportation required for the operation. Procuring pharmaceuticals from local resources is often difficult because of stringent U.S. Food and Drug Administration guidelines for pharmaceuticals.

3-46. The use of local facilities such as hospitals, medical clinics, and veterinary schools and their associated staffs should be considered. However, strict adherence to the provisions of the Geneva Conventions is required; therefore, the medical commander and command surgeon must coordinate with the staff judge advocate prior to using these resources. The assistant chief of staff, civil affairs operations, or the brigade civil affairs operations staff officer staff can provide liaison with indigenous health professionals and organizations.

Chemical, Biological, Radiological, and Nuclear Threats

3-47. The numbers and types of CBRN casualties depend on the scenario. However, these weapons produce mass casualties whenever they are used, refer to ATP 4-02.7/MCRP 4-11.1F/NTTP 4-02.7/AFTTP 3-42.3 for more information. The uncertainty concerning the numbers, types, and extent of injuries from CBRN weapons is made even more complex since injuries from more than one type of these weapons can affect the methods of patient treatment and prognosis. Another example is that acute ionizing radiation exposure increases the morbidity and mortality of virtually all patient types, refer to ATP 4-02.83/ MCRP 4-11.1B/NTRP 4-02.21/AFMAN 44-161(I) for triage of radiologically contaminated patients. Such weapons and devices also produce a large number of patients with stress-related injuries whose symptoms may be difficult to distinguish from true signs of injury. Other planning considerations include:

- The assistant chief of staff, civil affairs operations, and civil affairs operations staff officer can identify nonmilitary organizations to support AHS support operations under CBRN conditions.
- The CBRN threat must be assessed and included in the overall planning concept to determine how to counter it. All medical units must be prepared to execute coordinated mass casualty plans.
- Medical units will not generally establish themselves in a contaminated environment. However, all units in the theater are at risk of attack. Furthermore, remaining in or entering a contaminated area may be required to provide AHS support. Commanders must ensure that units and personnel are prepared to survive, defend, and continue operations in or near a contaminated area by instituting mission oriented protective posture standards for medical treatment. Presence of critical civilian or host-nation facilities such as nuclear power plants or chemical plants could impact AHS support operations if industrial accidents or other means disrupts their operation. The Bhopal and Chernobyl incidents are excellent examples.
- Veterinary service personnel will advise all DOD logistics units and user units in the AO on storing subsistence to prevent CBRN contamination, on monitoring and detecting CBRN contamination of rations and, when necessary, on procedures for decontaminating rations and military working dogs. Refer to ATP 4-02.7/MCRP 4-11.1F7/NTTP 4-02.7/AFTTP 3-42.3 for additional information.

- Preventive medicine units and all AHS support personnel will be alert for abnormal disease patterns in order to detect effects. The sick Soldier or local population is likely to be the first indication of CBRN agent use; rapid identification may be critical to the survival of theater forces.
- The area medical laboratory has special capabilities to support AHS units in CBRN environments. The primary mission of the area medical laboratory focuses on the identification and evaluation for health hazards in the AO through accurate field confirmatory laboratory testing of CBRN, endemic disease, and occupational and environmental agents.

SPECIAL FACTORS

3-48. Factors that are not listed elsewhere or items of such importance to the particular operations that they merit special consideration are mentioned. For example, how patients suffering from combat operational stress may affect the operation is a consideration.

ASSUMPTIONS

3-49. An assumption is a supposition of the existing or future course of events, assumed to be true in the absence of positive proof. Assumptions are sometimes necessary to enable the planner to complete the estimate of the situation and to decide on a COA to support the operation. In addition to a statement of facts, logical assumptions are included in this paragraph as a basis for development of the estimate. Subsequently, these assumptions may be deleted or modified as new information becomes available. Assumptions are usually restricted to higher levels of planning and normally apply only to factors beyond the control of friendly forces such as enemy capabilities and weather.

MISSION

3-50. Provide the restated mission resulting from mission analysis. The senior medical commander and command's surgeon and staff are responsible for—

- Analyzing the mission of the command from the AHS perspective.
- Outlining the concept of the AHS support operations, assigning tasks, and providing guidance on health care delivery within the operational area and in support of the combat commander's intent and concept of operations.
- Coordinating AHS support with civil affairs, other Services, and unified partners to include multinational forces, other governmental agencies, and intergovernmental organizations.
- Coordinating AHS support with the host-nation by providing medical liaison teams to countries with which the U.S. has medical support agreements or with nongovernmental organizations participating in the operation in concert with civil affairs.
- Anticipating the state of the host-nation civilian medical infrastructure and considering the impact the dislocated civilian population will place on AHS support operations.

COURSES OF ACTION

3-51. As a result of the above consideration and analysis, determine and list all logical COAs which will support the commander's OPLAN and accomplish the AHS mission. Consider all standard operating procedures, policies, and procedures in effect.

3-52. Course of action development is incorporated into the estimate. This process also includes COA analysis and COA comparison. After completing the analysis and comparison, the staff identifies its preferred COA and makes a recommendation. The COA development process is described in ADP 5-0 and FM 6-0.

ARMY HEALTH SYSTEM SUPPORT ANALYSIS

3-53. The AHS support analysis is a logical comparison of the estimated requirements of the command and the support means available for the operation. The estimate may include—

- ***Patient estimates are estimates derived from the casualty estimate prepared by the personnel staff officer/assistant chief of staff, personnel. The patient medical workload is determined by the Army Health System support planner. Patient estimate only encompasses medical casualty.*** Estimates of patients can be prepared from data compiled in paragraph 3 of the AHS support estimate (see Appendix A on page A-1). Patients are estimated as to number, distribution in time and space, areas of patient density, possible mass casualties, and lines of patient drift and medical evacuation requirements. The medical planner can request access to the Medical and Casualty Estimator (MACE) tool through the United States Army Medical Center of Excellence, Computational Sciences Division. The MACE is a deterministic and probabilistic model that provides medical and casualty estimates based on parameters such as length of operations and engagements, weather, and terrain.
- Support requirements are calculated from the estimate of patients and the data contained in paragraph 3 of the AHS support estimate (see Appendix A on page A-1). The medical planner should consider separately the requirements for all medical functions (refer to FM 4-02). Neither the medical resources available nor the allotment of specified units should be considered at this stage in the analysis. Only the AHS support medical resources required to support the commander's OPLAN are determined.

3-54. After the AHS support requirements have been calculated, the surgeon staff then determines the medical resources on hand or readily available to meet the requirements. Maximum use of available personnel and supplies promotes the overall effectiveness of the delivery of AHS support to the command. To ensure all aspects of AHS support are considered, review the following supporting categories:

- Organic AHS units and personnel. Medical units that are organic components of the command are listed and under each is a statement describing its location, strength, and readiness for action. Professional and specialty personnel capabilities must also be considered.
- Attached medical units and personnel. Medical units already attached and those that may be readily available, their locations, strengths, readiness, and professional and specialty personnel capabilities are considered.
- Supporting medical units. Consideration is given here to the evacuation and other support furnished by higher levels as well as from the United States Air Force, United States Navy, and multinational forces.
- Civil public health capabilities and resources. Host-nation medical personnel and supplies reported by civil affairs as available from civil public health should also be listed. Civilian medical facilities and personnel may be used in some cases to augment military facilities; in other cases the command's surgeon may be requested to give them support. He should be acquainted with their capabilities and potential to provide support. Cultural differences and medical care philosophies can impact on the health care provided. Civil affairs assist in planning for the maximum use of host-nation support. They also assist in carrying out host-nation agreements. Refer to FM 4-02 for more detailed information on AHS and the effects of the
- Law of Land Warfare and medical ethics.
- Indigenous or retained medical personnel. Consideration is given to the use of indigenous and retained personnel.
- Medical logistics. The command's surgeon must consider supplies and equipment on hand, immediate resupply availability, the condition of the material and the organization's capability to maintain it. The command's surgeon and staff should also consider the logistics factors for a variety of medical and surgical conditions, as they apply to existing operations. The Defense Health Agency, Medical Logistics Division, provides recommendations for clinical, logistics, and program policy, as well as support to medical material development and acquisition processes across the four Services. Their website also provides a joint deployment formulary and the advanced wound care formulary.
- Medical troop ceiling. The medical troop ceiling should be reviewed by the command's surgeon and staff to determine the possibility of securing additional medical support units and personnel. This action should take effect as early as possible to ensure the timely receipt of the required medical assets.

- Course of action. By taking into consideration all support requirements and medical resources available, the medical planner can then determine major problem areas and difficulties. Based on this determination, several possible COAs can be developed and listed which will provide the necessary AHS support. The planner lists these COAs and considers policies and standard operating procedures that will accomplish the support mission. The medical planner should include the following considerations:
  - Dependencies on evacuation by other Service components and multinational forces.
  - Extent to which civilian and contract labor will be required.
  - Theater evacuation policy (refer to ATP 4-02.2 for more information).

EVALUATION AND COMPARISON OF COURSES OF ACTION

3-55. In paragraph 3 of the example estimate (Appendix A), the medical planner assesses and compares the various COAs developed. This is done by comparing the COAs to determine which one can best be supported from the AHS perspective. By comparing the possible COAs to their strengths and weaknesses, the staff is able to identify the basic advantages and disadvantages of each, and make a recommendation that satisfies the commander's intent and planning guidance. See FM 6-0 for a detailed discussion on this process.

CONCLUSION

3-56. Paragraph 4 of the example estimate represents the end of the estimate process and is the basis for the development of the AHS support plan. The statement represents the medical commander's decision or the command's surgeon staff's recommendation, and serves as a guide to other staff members and subordinates in their planning process. As part of the conclusion the staff addresses the following information:

- Indicates whether the AHS mission for the operation can or cannot be accomplished.
- Indicates which COA can best be supported from the AHS perspective.
- Lists factors which may adversely affect the health of the command.
- Lists the limitations and deficiencies in the preferred COA that must be brought to the commander's attention.
- May include a COA which is less than desirable, but best supports the command's operations mission with the most economical use of available AHS medical resources.
- Provides a supporting statement if the AHS mission cannot be accomplished.

SECTION IV — RUNNING ESTIMATE

3-57. As the commander and staff transition from planning to execution they use running estimates to identify the current readiness of the unit in relation to its mission. A running estimate is the continuous assessment of the current situation used to determine if the current operation is proceeding according to the commander's intent and if planned future operations are supportable. The commander and each staff section maintain a running estimate. In the running estimates, the commander and each staff section continuously consider the effect of new information and update the following:

- Facts.
- Assumptions.
- Friendly activities and capabilities.
- Civil considerations.
- Conclusions and recommendations.

3-58. Each staff section builds, maintains, and consolidates their running estimates to provide the commander with a greater understanding and visualization of the operation. The running estimate also helps the staff to track and record pertinent information as well as to provide recommendation to the commander.

3-59. The command's surgeon and staff should continually update the AHS support estimate as required to provide information for the running estimate. Refer to FM 6-0 for greater detail on the running estimate.

SECTION V — THE ARMY HEALTH SYSTEM SUPPORT PLAN AND ORDER

3-60. Before the medical estimate is complete, the command surgeon and staff has started their preparation of the AHS support plan.

PREPARATION OF THE PLAN

3-61. As each problem is recognized and solved, a part of the plan is automatically defined. These bits of fragmentary information should be disseminated to subordinate command surgeons and higher command as early as possible to assist them in preparing their plans and estimates. Once the estimate is completed, it defines requirements, identifies medical policies and procedures. Specific responsibilities must be assigned in the AHS support plan. An example of an AHS support plan is provided in Appendix C.

RESPONSIBILITY

3-62. Each medical unit and medical HQ involved in providing AHS support must prepare its own plan. This plan will be based on the commander's intent, the OPLAN, and the sustainment support plan of the next higher HQ.

3-63. The OPLAN is a plan for the conduct of military operations prepared in response to actual and potential contingencies (JP 5-0). An OPLAN may address an extended period connecting a series of objectives and operations, or it may be developed for a single part or phase of a long-term operation. An OPLAN becomes an OPORD when the commander sets an execution time or designates an event that triggers the operation.

3-64. The support plan is an OPLAN prepared by a supporting commander, a subordinate commander, or an agency to satisfy the request or requirements of the supported commander's plan (JP 5-0). For example, the Army Forces commander develops a supporting plan as to how Army Forces will support the joint commander's campaign or OPLAN. Refer to FM 6-0 for a detailed explanation of OPLANs, OPORDs, support plans, fragmentary orders, warning orders, and annexes to orders.

3-65. The medial commander and the command surgeon and staff must continually know and be familiar with the plans and general policies of the tactical commander to adapt the AHS support plan to changes. At brigade, division, corps, and theater level, the surgeon and staff coordinate, synchronize and integrate the HSS and FHP tasks through participation in sustainment and protection cell work groups. The medical commander must ensure that adequate medical resources are available for the successful accomplishment of the AHS support mission

3-66. The surgeon and staff coordinate with staff elements for specific the following responsibilities:

- Assistant Chief of Staff, G-1 (S-1), Personnel. Coordinate and assist with casualty and DNBI estimates and reporting related issues (casualty operations).
- Assistant Chief of Staff G-2 (S-2), Intelligence. Coordinate for medical information of potential intelligence value or medical intelligence related issues.
- Assistant Chief of Staff, G-3 (S-3), Operations. Coordinates for:
  - Medical support requests.
  - Medial contingency operations.
  - Task organization of support medical elements.
  - Coordination regarding medical and casualty evacuation (non-standard platforms) within the command.
  - Environmental vulnerability protection levels.
- Assistant Chief of Staff, G-4 (S-4), Logistics (Chief of Sustainment). Coordinate and assist with:
  - Development of sustainment annex.
  - Food and water inspections.
  - Disposition of human remains and contaminated human remains with mortuary affairs.
- Assistant Chief of Staff, G-9 (S-9), Civil Affairs Operations. Coordinate on use of civilian MTFs and medical materials and supplies. Support the civil affairs operations working group.

- Chief of Protection. Participate in working groups and provide input for the protection annex.
- Chaplain. Coordinate the employment of COSC teams with the chaplain to support stress control needs of Soldiers.
- CBRN Officer. Coordinate AHS support requirements for CBRN operations.

3-67. For more information regarding the surgeon and surgeon cell, refer to FM 4-02.

PURPOSE AND SCOPE

3-68. The AHS support plan varies in purpose and scope according to the size and complexity of the supported operation. The AHS support plan of a combat battalion, for example, as a minimum includes the location of the casualty collection points, ambulance exchange points, primary and alternate evacuation routes, and the BAS. The AHS support plan for a division or BCT considers more functions because of the greater extent of support responsibilities.

3-69. The standard format of the plan is detailed and all-inclusive to fit the most complex situation. This format is a checklist and guide; only those portions that apply are to be used. Subparagraphs that do not apply or are addressed in the tactical standard operating procedures may be omitted entirely and subsequent subparagraphs numbered accordingly. The planner must exercise caution in determining which subparagraphs are inappropriate to avoid an incomplete plan.

3-70. The OPLAN is used to prepare—

- The medical unit OPLAN or OPORD. Refer to Appendix C for an example.
- The Health Service Support Appendix (3) to the Sustainment Annex (F) of an OPLAN or OPORD. Refer to FM 6-0 for an example.
- The Force Health Protection Appendix (10) to the Protection Annex I of an OPLAN or OPORD. Refer to FM 6-0 for an example.
- The Medical Service Annex Q to a Joint OPLAN or OPORD. Refer to CJCSM 3130.03A for an example.

FORMAT

3-71. For Army formatting and administrative information pertaining to preparing plans and orders refer to FM 6-0. For Joint formatting and administrative information pertaining to preparing plans and orders refer to CJCSM 3130.03A.

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Chapter 4

Computations

This chapter discusses some of the many different factors, terms, and computations the medical planner can use to develop the AHS support estimate.

SECTION I – TERMINOLOGY

4-1. The medical planner must know the basic principles and terms used in patient classification and reporting to be able to use the formulas in this chapter and Appendix D. A patient is defined as a sick, injured, or wounded Soldier who receives medical care or treatment from medically trained personnel. (FM 4-02).

CASUALTY

4-2. According to JP 4-02, a casualty can be defined as any person who is lost to an organization by reason of—

- Declared dead.
- Duty status — whereabouts unknown.
- Missing (not present at his or her duty location due to apparent involuntary reasons and whose location is unknown).
- Ill.
- Injured.

4-3. Also included are casualty categories, casualty status, casualty type, hostile casualty, and nonhostile casualty.

Note. Once a medical casualty (wounded, injured, or diseased) is treated by the first medical trained person, such as a combat medic, his status as a casualty changes to a patient.

HOSTILE CASUALTY

4-4. A *hostile casualty* is defined as a person who is the victim of a terrorist activity or who becomes a casualty "in action." "In action" characterizes the casualty as having been the direct result of hostile action, sustained in combat or relating thereto, or sustained going to or returning from a combat mission provided that the occurrence was directly related to hostile action. Included are persons killed or wounded mistakenly or accidentally by friendly fire directed at a hostile force or what is thought to be hostile force. However, not to be considered as sustained in action and not to be interpreted as hostile casualties are injuries or death due to the elements, self-inflicted wounds, combat fatigue, and operational stress reaction, and except in unusual cases, wounds or death inflicted by a friendly force while the individual is AWOL, deserter, or dropped-from-rolls status or is voluntarily absent from a place of duty. (Army Regulation [AR] 638-8. Hostile casualties include the following:

- Wounded in action—
  - This term describes a hostile casualty other than killed in action who has incurred an injury due to an external agent or cause. The term WIA covers all wounds and other injuries incurred in action whether there is piercing of the body, as in penetration of perforating wound, or none, as in contused wound; all fractures, burns, blast concussions; all effects of

CBRN agents; and the effects or exposure to ionizing radiation, or any other destructive weapon or agent.

- A hostile casualty who requires admission to an MTF or who dies of wounds after reaching an MTF is reported as WIA. Subsequent reporting as died of wounds may be required. The WIA category includes died of wounds received in action, but excludes the killed in action.
- Individual medical records and morbidity reports received by the Surgeon General include, in addition to WIA, all other individuals wounded or injured in action, and treated at MTFs without requiring hospital admission. This includes persons held and returned to duty at MTFs forward of Role 3 hospitals, as well as persons on an outpatient status carded for record only.

- Died of wounds received in action—
  - This term describes hostile casualties who die of wounds or other injuries received in action after having reached an MTF. These cases differ from hostile casualties who are found dead, or who die before reaching an MTF.
  - The criterion is to reach an MTF while still alive. All cases counted as died of wounds received in action are also counted as WIA.
- Killed in action—
  - This term describes a hostile casualty who is killed outright or who dies as a result of wounds or other injuries before reaching an MTF.
  - It provides a basis for distinction between killed in action cases and died of wounds received in action cases. Killed in action cases are not included in the WIA category or died of wounds category.

Note. The transportation and handling of human remains/deceased personnel is a logistical function and not a medical function.

- Missing in action — This term describes hostile casualties who are not present at their duty location due to apparent involuntary reasons and whose location is unknown.
- Captured — This term describes all hostile casualties known to have been taken into custody by a hostile force as a result of, and for reasons arising out of, any armed conflict in which U.S. armed forces are engaged.
- Interned — This term describes all hostile casualties known to have been taken into custody by a nonbelligerent foreign power as the result of, and for reasons arising out of, any armed conflict in which U.S. armed forces are engaged.

Note. Missing in action, captured, and interned casualties are not usually included in medical statistical records or reports received by the Surgeon General but are reportable to the personnel staff officer and assistant chief of staff, personnel.

NONHOSTILE CASUALTY

4-5. Nonhostile casualty describes a person who becomes a casualty due to circumstances not directly attributable to hostile action or terrorist activities. This would include those who become casualties due to the elements, self-inflicted wounds, and combat and operational stress reactions.

PATIENT

4-6. *Patient* is defined as a sick, injured or wounded Soldier who receives medical care or treatment from medically trained personnel. (FM 4-02) Once a casualty is treated by the first medically trained person (normally the combat medic), he is no longer referred to as a casualty and is subsequently referred to as a patient. A patient may be further classified as an outpatient or an inpatient as follows:

- *Outpatient* is defined as a person receiving medical/dental examination and/or treatment from medical personnel and in a status other than being admitted to a hospital. Included in this category is the person who is treated and retained (held) in a medical treatment facility (such as a Role 2 facility) other than a hospital. (FM 4-02).
- Inpatient is a person admitted to and treated within a Role 3 and Role 4 hospital and who cannot be returned to duty within the same calendar day (FM 4-02).

MEDICAL TREATMENT FACILITY

4-7. A *medical treatment facility* is defined as (Joint) a facility established for the purpose of furnishing medical and/or dental care to eligible individuals. (JP 4-02) (Army) Medical treatment refers to any facility established for the purpose of providing medical treatment. This includes battalion aid stations, Role 2 facilities, dispensaries, clinics, and hospitals. (FM 4-02).

DENTAL TREATMENT FACILITY

4-8. Dental treatment facility denotes a facility established for the purpose of providing dental services to authorized personnel. Area support is provided by the dental company (area support), other dental resources organic to hospitals, and the medical company (area support) or medical company (brigade support battalion).

SECTION II — CLASSIFICATION OF PATIENTS

4-9. *Inpatient* is defined as a person admitted to and treated within a Role 3 and 4 hospital and who cannot be returned to duty within the same calendar day. (FM 4-02). Inpatients are classified according to the primary cause of initial admission. They are reported to the Surgeon General in one of the three major classifications: disease, nonbattle injury, and battle injury or WIA. These classifications are further explained as follows:

- When a patient is admitted for unrelated conditions that require admission such as DNBI, the most serious condition present is used as the main cause of initial admission. This primary cause is used in determining the classification.
- When a patient is admitted for several related conditions that require admission, the first condition in the chain of origin is used as the primary cause of admission. This condition governs the classification of the patient.
- A patient who is admitted to a hospital for battle wounds or battle injuries but who also requires treatment for disease or nonbattle injury is, nevertheless, classified as a battle casualty.
- The disease classification includes many disorders not commonly thought of as disease. All patients other than battle injuries or WIA and nonbattle injury cases are classified as disease cases as follows:
  - Patients suffering from behavioral health disorders developed under battle conditions are classified as disease casualties, not hostile casualties. This includes those cases of combat and operational stress reaction and neuropsychiatric disorders which require hospitalization.
  - Patients readmitted as the result of an old traumatism are considered as disease cases. An old traumatism is defined as a case readmitted for a condition that is a result of a previously recorded battle or nonbattle injury incurred in the military service. The term traumatism refers to a condition of ill health caused by an external agent. It includes conditions resulting from acute poisonings (even though taken internally) and from exposure to heat, cold, or light.
  - Patients suffering from reaction to medication (other than acute poisoning) and patients admitted for complication from an injury incurred prior to entering the military service are classified as disease cases.
  - Food poisoning cases except when due to food containing nonbacterial poisons, are classified as disease cases.
  - A hostile casualty patient, who is dropped from medical reports as a disposition to absent without leave is, if readmitted, classified as a disease patient.

- All traumatisms are classified as nonbattle injury except old traumatisms (as defined in above subparagraph), or battle injury or wounds as stated below. Food poisoning due to food containing nonbacterial poisons are classified as nonbattle injury. Injuries due to the elements such as frostbite and immersion injury are considered to be nonbattle injuries even when incurred in combat areas.
- For purposes of medical statistical reporting, a hostile casualty patient (battle injury and WIA) is any patient admitted to a hospital for treatment of injuries or wounds sustained either directly due to enemy action or while engaged in combat and related thereto. A patient admitted as a hostile casualty patient is reported as such so long as hospitalization is continuous and uninterrupted. Except for disposition by transfer to another hospital, discharge of a hostile casualty patient from a hospital terminates his hostile casualty patient status for medical reporting purposes.

ARMY HEALTH SYSTEM SUPPORT FOR OTHER SPECIAL CATEGORY PATIENTS

4-10. Military operations may require AHS support for a wide category of potential patients. These potential demands should be carefully considered in initial planning. Categories that require careful consideration include indigenous allies, friendly and unfriendly civilians, paramilitary organizations, representatives of various U.S. agencies, U.S. civilian contractor personnel, and other individuals that may be entitled to care based on agreements with multinational forces and the host-nation. There are fine lines of distinction that must be clarified by the command. For example, wounded unfriendly civilians may be detainees subject to restrictions and regulations which do not apply to EPWs for their treatment.

ARMY HEALTH SYSTEM SUPPORT FOR ENEMY PRISONERS OF WAR

4-11. In accordance with the Department of Defense Law of War Manual, EPW patients should be afforded the same level of medical care as patients of the detaining power. Seriously injured, sick, or wounded EPWs will be evacuated through medical channels, but will be segregated from U.S. and multinational patients. Enemy prisoners of war will be evacuated from the combat zone as soon as possible. They will not be hospitalized in hospital wards with U.S. military patients. Except in emergencies, EPW will be hospitalized in housing equal to that used for U.S. military personnel. Accountability and security of EPW patients will be processed through EPW channels following treatment. Qualified retained medical personnel will be used as much as possible in medical and hygiene work needed for the well-being of EPW. They shall continue to exercise their medical functions for the benefit of the prisoners of war, preferably those belonging to the armed forces upon which they belong. For more information on AHS support to detainee operations refer to ATP 4-02.46.

SECTION III — PATIENT ADMISSION RATES

4-12. Admission rates are numerical expressions of the relative frequency with which patients are admitted to hospitals from a specified population over a designated period of time. The particular admission rates used in medical planning represent average rates derived from similar experiences in similar operations or those developed by medical planners. The primary types of patients for which admission rates are used during an operation are WIA and DNBI. The admission rates usually are expressed as the number of admissions to a hospital per thousand average personnel strength per day. Thus, a hospital admission rate of 2.0 per thousand per day for WIA patients would mean that for every thousand personnel involved, two personnel would become hospital patients each day from battle causes.

4-13. Admission rates contained in this publication reflect experience factors derived from past wars. Historical data on losses are also contained in Appendix D.

4-14. The admission rate for disease is affected by susceptibility (immunizations, chemoprophylaxis, and other preventive medicine measures), seasonal variations, climate, and environmental factors.

4-15. Casualty rates are determined by the personnel staff officer or assistant chief of staff, personnel. These rates include all of the types of casualties specified in paragraph 4-2. As shown in that paragraph, not all classifications of casualties are medical casualties, such as killed in action, absent without leave, and detained persons. The medical planner is responsible for patient estimates which include only the medical casualties (patients) included in the overall casualty rate. Patient estimates vary within and from echelon to echelon. While a BCT assigned to a division may be engaged in active fighting, other BCTs may not be in contact with the enemy. Elements of sustainment and support troops serving in areas distant from active combat suffer fewer combat-related medical casualties. Current Army operations occur in a layered, non-linear, noncontiguous operational environment, making projection of patient estimates and casualty rates even more critical than in conventional military operations. In order to support the operational environment that is continuously reorganizing joint and combined, new technologies and capabilities must emerge or be established.

4-16. While the strength of support and sustainment troops may approximate the strength of a BCT, which consist of artillery, engineers, signal, and other support troops; the combat-related medical casualty rates for all of these are low compared with the BCT. These factors operate to reduce the patient estimates of a theater as a whole far below those of its BCTs actively engaged with the enemy. Other differences include:

- As a rough estimate, it may be stated that the WIA rate for a theater as a whole is about 25 percent less than the WIA rate for its component BCTs.
- Likewise, the overall theater casualty rates are even lower than those of a corps. The WIA rate for the theater is roughly 20 percent lower that the WIA rate for a corps, and about 40 percent lower than that for a division.

Note. These assumptions do not take into account CBRN attacks or incidents.

4-17. Estimation of probable patients in advance is not a simple matter that can be reduced to a general formula. The first step in estimating probable patient rates is to select a point of departure. This may be termed an average patient day for the unit concerned.

4-18. The quantitative combined effect of all factors in each situation that may be expected to influence the patient estimate must be applied to this average patient day. The following are the more important of these factors:

- Enemy capabilities include all the resources and characteristics of the enemy that can be translated into combat-related medical casualties, such as the enemy's—
  - Weapons.
  - Air power.
  - General combat efficiency.
  - Morale.
- Terrain is not to be confused with position. Open terrain that affords little cover or protection may favor one side depending upon situation.
- Scheme of maneuver is a very important factor in determining the estimate. An attack is usually more costly than a defense. Losses in the defense are mitigated by the type of defense, the degree of organization of the defense, and the firepower of both sides. Frontal attacks, in general, produce more casualties in the attacking force than do envelopments. Daylight retrograde movements are extremely costly; when the retrograde movements become disorderly, losses may be very high.
- A preponderance of friendly firepower, especially in armored forces and air strength, will greatly decrease the capability of the enemy to inflict causalities by depressing or destroying their weapon systems. Conversely, relative weakness in armored firepower, or relative parity of U.S. capabilities with those of the enemy will increase casualty rates.

4-19. In preparing estimates of patients, the medical planner must remember that disease incidence continues during combat and the Soldiers are always vulnerable to DNBI. The admission rate during combat for DNBI may even rise above the average for the following reasons:

- Necessity for haste causes a disregard for ordinary precautions like proper risk avoidance procedures (use of personal protective equipment, eye protection, and seat belts and other safety equipment), and preventive medicine and field hygiene practices.
- Physical fatigue can increase the occurrence of psychiatric disabilities by decreasing resistance to the emotional stresses of combat. It can also impair judgment and lead to incidences that may cause injury.
- Prolonged exposure to elements as a result of sustained operations with enemy forces during the offense or defense.

4-20. The proportion of a command actively engaged in combat determines, to a considerable degree, the casualty rate of the unit as a whole. Each situation must be studied and an estimate made for each major fraction of the command rather than one estimate for the command as a whole. Medical planners should base their estimates of probable casualties and nonbattle losses based on the strength and weaknesses of the organization.

SECTION IV — PATIENT ADMISSION RATE COMPUTATION

4-21. The term rates as used in military medicine as a numerical expression of the number of times a particular event occurs in a specified population during a given period of time. Types of rates determined are admission rates, mortality rates, incidence rates (specific diseases), prevalence rates, medical noneffective rates, and fatality rates. Through the use of rates, it is possible to make direct, ready, and meaningful comparisons of events related to different time periods and or different populations.

4-22. Admissions represent a general class of which there are many subclasses in terms of the reasons for admission to an MTF. Rates may be based on admissions due to the following:

- Disease (disease admission rate).
- Nonbattle injury.
- The combination of DNBI (all nonbattle causes admission rate).
- Battle injury and wounds.
- A combination of all the above causes (all causes admission rate).

4-23. Admission rates may also be computed for admissions due to a particular cause, such as a specific disease. More information on calculating rates can be found in Appendix D.

SECTION V — CALCULATION OF PATIENT EVACUATION REQUIREMENTS

Note. Admissions do not equal evacuation requirements. Admissions refers to 'patients who are admitted to hospitals' as stated above and represent only a fraction of the total evacuation requirements. Evacuated patients may return to duty from Roles 1 through 3 (after multiple evacuations) prior to becoming an admission. To determine evacuation requirements, planners must first calculate total medical casualty data. Casualty estimates are the responsibility of corps and division human resources operations section and casualty operations section using the Medical Planner's Toolkit. At the brigade level, it is the responsibility of the personnel staff officer (S-1). (ATP 1-0.1).

4-24. This section presents a methodology for calculating the time and the number of ambulances required to evacuate a given number of patients or to support a specific operation.

AMBULANCES

4-25. Ground ambulances are organic within maneuver battalion and brigade formations. Those allocations should form the baseline or starting point for determining aggregate requirements. Ground ambulance mobility limitations make it unlikely that battalion and brigade ambulances can be rapidly shifted outside their owning organization's area of operation. Therefore medical planners should not assume otherwise. They should, however, consider the results of the calculations in paragraph 4-34 listed below (when used to

determine individual operations requirements) to be additive to the organic and direct support ambulance allocations in each formation's area of operation when the results exceed the organic allocation.

4-26. The medical company, ground ambulance is assigned to the medical battalion (multifunctional), or to a medical brigade. The medical company, ambulance includes 24 wheeled ambulances and provides evacuation from the brigade medical companies and medical companies, area support to supporting hospitals, reinforcement of brigade medical company evacuation assets, reinforcement of covering force and deep battle operations, and movement of patients between hospitals and aeromedical staging facilities, railheads, or seaports in both the Corps and echelon above Corps areas. It provides area support medical evacuation beyond the capability of the area support medical battalion company, provides emergency movement of medical supplies, and limited vehicle refueling support for the medical battalion (multifunctional).

4-27. The baseline distributions for the medical company, ambulance is:

- During operations to shape, prevent, and large scale combat, allocate one third company per BCT supported, one half company per Division HQ supported, and two companies per Corps or Senior Army HQ.
- During consolidation of gains, the allocation should add one company per 240,000 supported host-nation population at risk.

AIR AMBULANCES

4-28. The medical company, air ambulance includes 15 air ambulances to evacuate critically wounded or other patients consistent with evacuation priorities and operational considerations, from points as far forward as possible, to the appropriate MTFs. The medical company, air ambulance also provides emergency movement of blood products, biological, and medical supplies to meet critical requirements, emergency movement of medical personnel and equipment, and movement of patients between hospitals, aeromedical staging facilities, hospital ships, casualty receiving and treatment ships, seaports, and railheads. The air ambulance company is organic to the general support aviation battalion within the combat aviation brigade. It is not organic to ground elements, however dependent upon the type or phase of operation, they may be placed in direct support to maneuver formations or in area support over an assigned area of operations. The air ambulance company provides aeromedical evacuation support on an area or direct support basis and is organized to provide area or direct support from up to four separate locations. Additionally, Department of Defense Directive 5100.01 directs the Army with the responsibility to provide intra-theater aeromedical evacuation support to the joint force. Therefore medical planners must consider appropriate allocations to support other U.S. joint forces in theater.

4-29. The baseline distributions for the medical company, air ambulance is as follows:

- During operations to shape, prevent, and large scale combat, allocate one medical company, air ambulance in direct support per division and equivalent of up to three BCTs, one third companies in direct support per separate brigade or equivalent, one company in area support per two Divisions or equivalent, one half company for each Division within the Corps in area support, and one company per United States Navy Ship Hospital Ship in support of ship-to-shore and shore-to-ship operations (when required).
- During consolidation of gains, allocate one medical company, Air Ambulance in direct support to a division or equivalent up to three BCTs, one third in direct support per separate brigade or equivalent, one company per Corps in area support, and one company per hospital ship (if ship-to-shore or shore-to-ship is required). Support to other Services may be based on a similar equivalent such as the size or area of responsibility of a BCT may generate the requirement for one third of a company in area or direct support.

TIME FACTORS

4-30. When actual travel speeds are known they should be used. Environmental and operational conditions (road blocks, debris, craters, ice) will affect travel speeds and planners should consider these factors that may degrade vehicle speed. The following time factors are planning estimates and include patient loading and unloading times:

- Litter squads-
  - Four-person squad over average terrain, 900 meters and return in 1 hour.
  - Six-person squad over mountainous terrain, 350 meters and return in 1 hour.
- Ambulance-
  - High mobility multipurpose wheeled vehicle and mine-resistant ambush protected vehicle:
    –Improved road 45 miles per hour (mph).
    –Unimproved road 30 mph.
  - Stryker medical evacuation vehicle-
    –Improved road 60 mph.
    –Cross country 40 mph.
  - Tracked (M113)-
    –Improved road 40 mph.
    –Cross country 15 mph.
- Army air ambulance-
  - HH-60 and UH-60 – Airspeed of 120 knots or 138 miles per hour (1 knot = 1.15 mph).
  - UH-72 – Airspeed of 120 knots or 138 mph.

COMPUTATIONS

4-31. The following formulas may be used to calculate the time required or the number of ambulances needed to transport a given number of patients one time from point A to point B. Either the time for moving all patients or the number of fixed ambulances available must be specified.

- Time required-
  $T = (N \times t) / (U \times n)$.
- Ambulances required-
  $U = (N \times t) / (T \times n \times O)$.
- Where:
  N = Total number of patients to be evacuated.
  N = Average Number of Patients per Vehicle per Movement.
  T = Total time.
  T = Time required for one round trip.
  O = Operational Readiness Rate (.8 for air ambulance and .9 for ground ambulance based on Department of the Army standard).
  U = Number of ambulances.
  H = Available hours per ambulance per day.

4-32. Example 1, Time to Evacuate All patients (T):

- Assume 100 patients using 5 air assets
- N = 100 patients from A to B
- t = 1 hour round-trip legs
- n = 3 patients per load on average
- U = 5 ambulances
- O = .80
- H = 8.0

- T = (N x t) / (U x n) = (100 x 1) / (5 x 3) = 6.7 hours

Note: If the value of T is greater than H, you must either increase the number of ambulances used or accept risk in exceeding the available hours per ambulance per day.

4-33. Example 2, Number of Ambulances (U) Required:

- Assume 100 patients (N) and 2 hours (T) to complete all evacuations
- N = 100 patients from A to B
- t = 1 hour round-trip legs
- n = 3 patients per load on average
- T = 2 hours to complete the evacuation
- O = .80
- H = 8.0
- U = (N x t) / (T x n x O) = (100 x 1) / (2 x 3 x .8) = 21 assets to complete the mission in 2 hours. For equation U = (N x t) / (T x n x 0)

Note: If using values for T greater than H, use the following (N x t / n) / (H x O)

4-34. The daily number of ambulances (air or ground), required to support a specific operation (independent or large scale) may be calculated using the formula below. To estimate requirements, demand-based computations should be compared to allocated assets (see above for example allocations) and the greater of the two requirements should be selected. In doing so, the planner is recognizing that organic and direct support assets have inherent capability to handle demand and that shifting these organic or direct support assets daily during combat is challenging. A simple algorithm for estimating daily requirements is as follows:

- Total Patient Movements-
  M = N x PM

- Total Sorties Required to Move All Patients-
  S = M / PPV

- Total Time Required for All Sorties-
  T = S x ST

- Total Ambulances Required-
  U = T / (O x H)

- U = (N x PM x ST) / (O x H x PPV)

- Where:

  - N = Total Patients to be Evacuated. The number of WIA and DNBI patients requiring evacuation (N) are often derived from Joint Medical Planning Tool, MACE, G1 estimates, or other data streams.

  - PM = Average Movements per Patient. A reasonable value is 2.0. The number of evacuations required for each patient to be evacuated. This figure will exceed 1.0 as recognition of the fact that most evacuated patients will need to move more than once as many will require several movements. In assigning a specific percentage as a planning factor, the medical

planner must consider several factors. Those factors may include: patient condition, injury or disease type and severity, medical disposition, location of medical specialties, availability, and theater evacuation policy.

- M = Total Patient Movements. The total patient movement calculation multiplies the number of patients to be evacuated by the average number of moves per patient.

- PPV = Average Number of Patients per Vehicle per Movement. For both ground and air assets, a reasonable value is 2.0. This value is based on scenario day by echelon and by ambulance type. For example, battalion and brigade ground ambulances might move (on average) less than 2 patients per movement. Brigade combat team and division air ambulances might also move on average less than 2 patients per movement. Division ground ambulances might move on average less than 3 patients per movement. For the corps, both air and ground ambulances might move on average less than 4 patients per movement.

- Total Sorties Required for All Movements. This calculation is simply the total patient movements divided by the patients per vehicle (M / PPV).

- ST = Average Time per Sortie (based on notification, distance, speed, refuel, reset, load, and unload.) A reasonable value may be between 1.0 hours to 2.5 hours for air and .5 and 4.0 hours for ground, depending on many factors including location on the battlefield. The average time per sortie requires analysis of the average round-trip distance (within the battalion, brigade, division, and corps) and average speed of the platform. Dividing the average round-trip distance by the average speed provides an estimate of the average in-transit time. Average time for notification, loading, unloading, refuel, and reset must be added to the average in-transit time to generate a proper estimate of ST.

- T = Total Time Required for All Sorties. The total time required for all sorties is the product of the number of sorties (S) and the average time per sortie (ST).

- O = Operational Readiness Rate. Department of the Army Standard values for operational readiness are .80 for air ambulance and .90 for ground ambulance. In all cases, availability must be considered when evaluating the number of vehicles required.

- H = Available Hours per Ambulance per Day. Reasonable values for available hours per ambulance per day should be between 2.5 and 8.0 (based on manpower requirements criteria standards, maintenance support capacity, and surge capability) for air ambulance and between 12.0 and 16.0 for ground ambulance.

- U = Total Workload-Driven Ambulances Required. This is the workload-driven rather than the allocation-driven requirement and does not include area support demand requirements. Planners should also consider the area support requirements (see paragraph 4.25).

Note: The reasonable values provided above are baseline factors resulting from high and low fidelity modelling and simulation efforts. Medical planners should exercise careful judgment and experience if deviating from these values.

- For equation U = (N x PM x ST) / (O x H x PPV)

Note: This formula provides daily estimates for ambulance demand. Keep in mind that patients will rarely be fully moved through the continuum of care on the day they were injured. However, patients generated on previous days will require movement. This formula (science) will provide an estimate based on the factors included. Medical planners must exercise judgment and experience (art) when calculating total requirements.

Note: Medical planners should consider grouping of patients over time and locations, and apply reasonable judgment when estimating requirements.

4-35. The previous formulae assists in the calculation of workload-driven demand. The actual demand derives from the maximum of the workload-driven calculations plus the area support allocation requirements.

EXAMPLE PROBLEM

4-36. To determine the requirement for air or ground ambulance assets to support a specific operation the medical planners have to determine information necessary to compute the problem. Complete the calculation for air and ground evacuation vehicles by using formulas provided in the preceding paragraphs. All fractions are rounded up to the next whole number as you cannot have a fraction of a patient, an ambulance or a mission. Compare the answers to the solutions provided in paragraphs 4-32 and 4-35.

4-37. Using the information below, calculate air ambulance requirements:

- Type of patients—
  DNBI 145
  WIA 216
  N = 361
- Average movements per patient
  PM = 2
- Average number of patients per vehicle per movement
  PPV = 2
- Available Hours / Ambulance / Day
  H = 6.0 hours per day
- Average Time / Sortie
  ST = 1.5 hours
- Operational Readiness Rate
  O = .80

EXAMPLE SOLUTIONS

4-38. Calculate Air Ambulance Requirements:

- Total Patient Movements
  M = N x PM = 361 x 2 = 722
- Total Sorties Required to Move All Patients
  S = M / PPV = 722 / 2 = 361
- Total Time Required for All Sorties
  T = S x ST = 361 x 1.5 = 541.5
- Total Ambulances Required
  U = 541.5 / (.8 x 6) = 113
  U= (N x PM x ST) / (O x H x PPV) = (361 x 2 x 1.5) / (.8 x 6 x 2) = 113 air ambulances

4-39. Using the following information, calculate ambulance requirements:

- Types of patients:

  DNBI 145
  WIA 216
  N = 361
- Average movements per patient
  PM = 2
- Average number of patients per vehicle per movement
  PPV = 2
- Available Hours / Ambulance/ Day
  H = 12.0 hours per day
- Average Time / Sortie
  ST = 2.0 hour
- Operational Readiness Rate
  O = .90

4-40. Calculate Ambulance Requirements

- Total Patient Movements
  M = N x PM = 361 x 2 = 722
- Total Sorties Required to Move All Patients
  S = M / PPV = 722 / 2 = 361
- Total Time Required for All Sorties
  T = S x ST = 361 x 2.0 = 722
- Total Ambulances Required
  U = 722 / (.9 x 12) = 67 ground ambulances
  U = (N x PM x ST) / (O x H x PPV) = (361 x 2 x 2) / (.9 x 12 x 2) = 67 ground ambulances

4-41. The total estimated demand should include both the workload-driven calculations from paragraph 4-30 and the area support requirements discussed in paragraphs 4-26 through 4-29. Medical planners should compare the calculated workload demands to the area support requirements at each echelon and combine the greater of each in determining the total aggregate requirement. In other words, area support requirements within the Divisions and BCTs are constant based on geography and populations at risk and should therefore not be reduced below the allocations necessary to maintain area support coverage within each echelon (allocations provided in paragraphs 4-27 through 4-30), even if the workload calculation on a given day produces fewer requirements in those areas. Corps allocations are not based on geography and exist both to provide area support within the Corps and to provide the flexibility and surge capacity to bolster division demands when area support allocations are inadequate to meet the projected workload demands. Medical planners must understand the total dynamic of the AO and the medical evacuation functional demands when determining the total evacuation requirement.

SECTION VI — AUTOMATED METHODOLOGIES

4-42. This section provides descriptions of currently available automated methodologies.

DEVELOPMENT OF METHODOLOGIES

4-43. The United States Medical Center of Excellence developed the automated MACE tool and the Statistical Analysis Cell (SAC) DNBI methodology which can assist medical planners with medical and casualty estimation. The requesting individual must contact the Computational Sciences Division for access to the MACE tool or the SAC for DNBI calculations. The SAC provides DNBI rates on an as needed basis. Medical planners who use the MACE tool to assist in estimating casualties should provide both positive and negative feedback to the Computational Sciences Division by email to

usarmy.jbsa.medical-coe.list.cdid-ops-admin@army.mil and address your request with "ATTN: CSD." Requests for DNBI calculations may be sent directly to the Statistical Analysis Cell at the following email address: usarmy.jbsa.medcom-ameddcs.list.sac@army.mil.

MEDICAL AND CASUALTY ESTIMATOR TOOL

4-44. The MACE tool is a mathematical model used to estimate the expected number of medical casualties admitted to Role 3 and some of their medically related attributes. Back casualty data inherent to the software is based on an extensive array of historical observations from major military operations. Alternatively, the user has the option to supply killed in action (KIA), WIA, and DNBI data from other sources.
Battle injury is defined as damage or harm sustained by personnel during or as a result of battle conditions. (JP 4-02).

4-45. When using MACE there are several important variables the user selects from software-provided menus. These variables include: operation duration, type of scenario, terrain, weather, primary month of operation, troop strengths (friendly and enemy), posture of the forces, weapons sophistication, surprise, mobility, human factors, captured missing in action rate, and daily replacements. The MACE provides daily casualty estimates with the following medical related attributes for each WIA patient: mechanism of injury, cause agent, nature of injury, body region injured, International Classification of Disease-9-Clinical Modification (ICD-9 CM) code, injury severity score value, intensive care unit and intermediate care ward days, operating room hours and total Role 3 length of stay. For each disease and DNBI casualty MACE provides the DNBI classification and disposition. The MACE provides a summary chart depicting the accumulation of patients for each day at Role 3 MTFs. Using the information thus provided by MACE can allow the medical planner to estimate Role 3 capacity requirements to support a proposed scenario. The medical attributes, but not predicted casualty numbers, are based on empirical data from Operation Iraqi Freedom and Operation Enduring Freedom. The planner should keep in mind that these computed attributes will be different in other scenarios in which the theater medical infrastructure and strategic medical evacuation differ from Operation Iraqi Freedom and Operation Enduring Freedom.

4-46. Some important constraints associated with MACE includes:

- software is designed to estimate casualties for forces division sized and smaller.
- casualty rates included in the software are from historic data.
- software does not estimate medical workload other than Role 3.

5-47. MACE is available by contacting the following email address: usarmy.jbsa.medical-coe.list.cdid-ops-admin@army.mil and address your request with "ATTN: CSD."

MEDICAL PLANNERS' TOOL KIT

4-48. The medical planners' tool kit (MPTK) is the designated casualty estimation tool of record for the Army Human Resources planners at echelons above brigade. The MPTK is a powerful suite of tools which were developed to support medical planners in the Joint community. The MPTK provides an end-to-end solution for medical support planning across the full range of military operations.

4-49. The MPTK requires formal training in order to access the toolkit. It consists of four tools:

- Patent Condition Occurrence Frequency Tool. Generates patient probability distributions.
- Casualty Rate Estimation Tool. Calculate combat and noncombat injuries and illnesses expected in a military operation.
- Expeditionary Medicine Requirements Estimator. Estimates operating room, intensive care unit, staging bed, blood product, and evacuation requirements for theater hospitalization based on a given patient load provided by the Casualty Rate Estimation Tool.
- Estimating Supplies Program. Estimates consumable medical supplies needed to treat patients based on patient stream provided by the Casualty Rate Estimation Tool.

4-50. Medical casualty estimating and medical planning tools may be found in the Joint Medical Planning Tool and the MPTK. The Joint Medical Planning Tool is a DOD-accredited tool for health risk assessment and course of action analysis. It accepts estimated patient streams and patient condition occurrence frequency

data generated by the MPTK. These software tools are available to qualified users after attending the Joint Medical Planning Tool Course provided by the Defense Medical Readiness Training Institute (DMRTI) (POC: Contingency Operations Program, (210) 221-2652/9570; DSN 471; or email dha.jbsa.j7.mbx.jmop@mail.mil.

JOINT MEDICAL PLANNING TOOL

4-51. The Joint Medical Planning Tool is an effective decision support tool that simulates patient flow from POI through Roles of care. It assists medical planners in determining:

- The best COA for patient streams.
- Most efficient configuration of MTFs.
- Number of required operating room tables or ward beds in a given scenario based on number and location of medical assets in the operational area.
- Lift requirements for effective patient movement.

4-52. See JP 4-02 for more detailed information regarding joint planning tools.

DISEASE AND NONBATTLE INJURY ESTIMATION

+4-53. The Medical Center of Excellence Statistical Analysis Cell developed a methodology to estimate DNBI and WIA (battle injury) admission rates to United States Army Role 3 MTF of all patient types including, U.S. military personnel and nontraditional populations including; coalition, NATO, contract employees, indigenous populations, detainees, and U.S. government agencies and civilians. The Statistical Analysis Cell can conduct in-depth analysis on an as needed basis which may include the 95th percentile daily hospital rates. The Statistical Analysis Cell may also provide the total inpatient load for DNBI and WIA admissions based on the overall prevalence rate per 1,000 Soldiers. Other analysis projects may include graphical longitudinal displays of admissions and admission rates; deployed force profiles; inpatient load rates; injury distributions based on the Barell Injury Distribution Matrix, Classification by Body Region and Nature of Injury; and admission profiles presenting the top 100 International Classification of Disease-9-Clinical Modification diagnosis codes (stratified by operation, component, sex, and age group). The Statistical Analysis Cell may be emailed at: usarmy.jbsa.medcom-ameddcs.list.sac@mail.mil.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR CASUALTY ESTIMATOR

4-54. The medical planner's estimates (such as casualty, logistic, evacuation, and personnel cross leveling) must be modified for the CBRN environment. Estimates of CBRN medical workloads can be found in NATO STANAG 2553. A number of new decision support tools under development have various levels of capability to estimate the number and types of casualties from CBRN events. Data from these models can be used to develop medical estimates and guide logistics, evaluation, and additional requirements.

BASE CAMP PLANNING

4-55. The medical planner generally requires the assistance of a health facility planner to plan the physical and material requirements to develop a suitable plan for an MTF at a base camp. The medical planner can assist in the development of the base camp health facility plan by providing requirements and capabilities to the responsible command. The services provided will depend on the size of the base camp and the anticipated requirements. The medical requirements may include up to a Role 3 hospital, or it may include a smaller organic medical clinic or aid station for personnel assigned to provide minimal Role 1 care.

4-56. The type of MTF, dental, and veterinary services on a base camp will vary based on specific requirements that are directly related to the mission, population at risk, task organization, and allocation for medical units assigned to a particular AO. The United States Army Health Facility Planning Agency provides health facility planning expertise in support of deployed units. The United States Army Health Facility Planning Agency serves as the health facility planning link from the strategic to the tactical level and provides reach back technical assistance to the forward deployed health facility planners located in theater. The health

facility planner will likely be assigned to the staff of joint forces or Service component surgeon serving in a collaborative fashion with the following: theater level engineering section, base sustainment operations, reach back agency support, contracting agencies, subordinate command-level facility management personnel, funding streams, and host-nation entities.

4-57. The health facility planner relies on a successful and coordinated working relationship with the EAB engineering staff. The health facility planner provides direct advice and input to the EAB engineering staff with regard to all health facility planning above the brigade BAS level to ensure appropriate alignment with the theater medical concept of operations. Refer to ATP 4-02.1 for additional information on the facility planning and requirements and ATP 3-37.10/MCRP 3-40D.13, and Engineer Pamphlet (EP) 1105-3-1 for information on base camp planning and development.

MEDICAL INTELLIGENCE

4-58. Medical intelligence is the result of the collection, evaluation, analysis, and interpretation of foreign medical, environmental, and bio-scientific information. It is used by strategic and military medical planning for the conservation of the fighting strength of friendly forces and the assessment of foreign military and civilian medical capabilities. Medical intelligence should not be confused with medical information, which is information used to promote and conserve the health of the force. Medical information includes preventive and curative health measures, medical evacuation, and the disposition of medical capability, capacity, and equipment. The medical planner must identify the intelligence requirements and provide that request to the supporting intelligence element with the command. In an emergency, up-to-date medical intelligence assessments can be obtained by contacting Director, Defense Intelligence Agency, Attention: Director, National Center for Medical Intelligence, Fort Detrick, Maryland 21702-5000. The National Center for Medical Intelligence can provide health service assessments, medical intelligence notes, medical intelligence imagery briefs, and foreign medical facility assessments. The medical planner should use all available intelligence elements to obtain needed intelligence to support the military operation. The National Center for Medical Intelligence 24-hour service or request for information telephone number is commercial telephone (301) 619-7574 or Defense Switch Network 343-7574. Other sources include; The Office of the Surgeon General, Intelligence and Security Division (for division or higher staff, supporting intelligence staff officer or assistant chief of staff, intelligence or military intelligence unit; Central Intelligence Agency World Fact Book; open source information system; tourist maps and brochures; preventive medicine resources; World Health Organization; Pan American Health Organization; Department of State; and internet, libraries, and other informational sources).

4-59. An additional source of information on deployment OEH surveillance is the United States Army Public Health Center.

4-60. Other sources of medical intelligence include the Center for Disease Control and Prevention, The Office of the Surgeon General, Intelligence and Security Division, and intergovernmental organizations (such as the World Health Organization or United Nations). A supporting intelligence element should exist at some point in the AHS unit's chain of command. This element will be the primary source for the medical planner to access the necessary intelligence for the execution for the AHS support operations.

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Appendix A

Army Health System Support Estimates

Each medical function is an integral part of providing a seamless health care delivery system from the point of injury or wounding through successive roles of care. A separate AHS support estimate could be developed for each medical function as it pertains to the mission or as required. Depending upon what level of command the AHS support estimate is prepared for will determine whether it is written out in detail, overlays developed, or it is provided verbally. Regardless of the mode of dissemination, the same planning consideration should be used.

Sample planning considerations (italicized) are provided for the various parts of the estimate. They are not an inclusive listing of considerations nor may they be an appropriate consideration given the specific mission, and are included only to provide an example and to provoke thought.

A-1. Figure A-1 is a sample format for an AHS support estimate. While this example is in the basic format of an OPORD or OPLAN, estimates can be in any format that is approved by the commander.

[CLASSIFICATION]

Place the classification at the top and bottom of every page of the estimate. Place the classification marking at the front of each paragraph and subparagraph in parentheses. Refer to AR 380-5 for classification and release marking instructions.

Copy ## of ## copies
Issuing headquarters
Place of issue
Date-time group of signature
Message reference number

ARMY HEALTH SYSTEM SUPPORT ESTIMATE

(U) References: *List documents essential to understanding the AHS estimated in support of the OPLAN or OPORD. List references concerning a specific function in the appropriate attachments.*

(a) List maps and charts first. *Map entries include series number, country, sheet names, or numbers, edition, and scale.*

(b) List other references in subparagraphs.

1. (U) Mission: *Statement of the overall AHS mission and type of activity to be supported (such as unified land operations, stability tasks, or urban operations).*

2. (U) Situation and Considerations. *This paragraph describes the conditions of the operational environment and how they may impact on AHS support operations. Possible situations and considerations may include—*

[page number]
[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate

[CLASSIFICATION]

a. (U) Characteristics of the AO. *Include geographical barriers and political borders.*

b. (U) Area of Interest. *Describes the area of interest. Refer to Annex B (Intelligence) as required.*

c. (U) Area of Operations. *In the following subparagraphs describe the characteristics of the AO and how it will affect the AHS functions. Refer to the appropriate annex for supplemental data. Example "Refer to Annex B (Intelligence) as required."*

(1) (U) Terrain. *The terrain directly impacts the planning and execution of AHS support operations. The more difficult the terrain, the more adverse an impact it has on delivery of health care in the AO. Natural barriers influence the type of medical evacuation which will be conducted such as litter versus ground ambulance as occurs on mountainous terrain or in jungles. The FHP requirements for the conduct of urban operations vary significantly from the requirements for the deployment of armor operations on open terrain. The medical planner must carefully analyze the impact of the terrain, both natural and man-made, on the establishment of MTFs, the placement of casualty collection points and ambulance exchange points, and the potential for impeding air and ground ambulance operations, such as the potential limitation in the use of air ambulances in mountain operations.*

(2) (U) Weather and climate. *This includes seasonal weather and potential for hurricanes, typhoons, tornadoes, or monsoons (examples include, conditions which may further isolate villages and sections of the population due to flooding), or its adverse effects on a disaster relief mission, or any other significant role it may play on an operation being planned. Heat and cold injuries incurred by forces not acclimatized can severely impact the health of the command during initial deployment phases.*

(3) (U) Dislocated civilian population and detainees. *This includes the effect of large displaced populations on medical evacuation routes, deployment of medical capabilities, and the emergency distribution of CLVIII medical supplies (including blood).*

(4) (U) Environmental health threats. *Local and regional industries, pest management practices, solid and hazardous waste practices, and other activities can create a significant health risk to deploying forces, such as exposure to toxic industrial material. Much of this information may be available prior to deployment through medical intelligence reports, industrial baselines assessment, environmental health databases and assessments; and records of previous operations in the AO.*

(5) (U) Flora and fauna. *Personnel must be familiar with the poisonous and toxic plants in the AO. This includes plants which are poisonous if ingested and those that will present dermatologic symptoms. Snakes and other reptiles which are poisonous; wild animals, if they pose a threat to humans; and arthropods (mosquitoes, flies, and ticks). The medical planner must ensure that the health threat has been identified and countermeasures are included in the preventive medicine capabilities such as pest management activities, mosquito netting, insect repellents, chemoprophylaxis, immunizations, and barrier creams.*

(6) (U) Disease. *The endemic and epidemic diseases in the AO must be identified. Additionally, if a multinational force is deployed, endemic native to the parent country should also be identified and preventive medicine measures planned if appropriate.*

(7) (U) Local resources. *Planners should identify the locations and capabilities of local medical treatment facilities, waste disposal (to include medical waste), water purification, and medical supplies.*

(8) (U) Nuclear, biological, chemical and high explosive weapons.

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

d. (U) Enemy forces. *Identify enemy forces and appraise their general capabilities. Describe the enemy's composition, disposition, location, strength, and probable COA. Identify adversaries and know the potential terrorist threats within the AO. List the enemy capabilities that could influence the AHS and HSS mission. Refer to Annex B (Intelligence) as required.*

e. (U) Friendly forces. *Briefly identify the missions of friendly forces and the objectives, goals, and missions of civilian organizations that impact the AHS mission and the HSS functions in the following subparagraphs.*

(1) (U) Higher headquarters mission and intent. *Identify and state the mission and commander's intent for headquarters two levels up and one level up from the issuing headquarters.*

(a) (U) Higher headquarters two levels up. *Identify the higher headquarters two echelons above.*

1. (U) Mission.

2. (U) Commander's intent.

(b) (U) Higher headquarters. *Identify the higher headquarters one echelon above.*

1. (U) Mission.

2. (U) Commander's intent.

(2) (U) Missions of adjacent units. *Identify and state the mission of adjacent units and other units whose action have a significant impact on the issuing headquarters.*

(3) (U) United States Uniformed Services to be supported.

(a) (U) Army.

(b) (U) Navy.

(c) (U) Air Force.

(d) (U) Marines.

(e) (U) Coast Guard.

(4) (U) Department of Defense Civilians.

(5) (U) United States national contract personnel.

(6) (U) Multinational forces.

(7) (U) Enemy prisoners of war.

(8) (U) Indigenous civilians and third country civilians. *Refer to discussion of Articles 15 and 16 of the Geneva Convention (I) For the Amelioration of the Condition of the Wounded and Sick in Armed Forces.*

(9) (U) Others. *This can include retained personnel; dislocated civilians from areas experiencing violent confrontations or oppression; dislocated civilians from other countries; and members of the nongovernmental organizations and international organization deemed eligible for support.*

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

f. (U) Interagency, intergovernmental, and nongovernmental organizations. *Identify and state the objective or goal and primary tasks of those non-Department of Defense organizations that have a significant role within the AO. This would include organizations such as the Center for Excellence in Disaster Management and Humanitarian Assistance, United Nations, World Health Organization, International Committee of the Red Cross, Doctors Without Border, and the Pan America Health Organization to name a few. Refer to Annex V (Interagency Coordination) as required.*

g. (U) Civil considerations. *List all critical civil considerations that would impact HSS operations. For a complete discussion on civil consideration in the planning process refer to ATP 3-57.60, or use Appendix I (Intelligence Estimate) to Annex B (Intelligence) as required.*

(1) Civilian population. *The presence of civilians on the mission makes AHS support operations more complex. Medical planners need to consider and plan for the potential impact the dislocated civilians, and retained or detained persons will have. Prior to an operation, a determination of eligibility for care in U.S. MTFs should be made. Clear and concise guidance should be disseminated in the order as both U.S. and international law may be applicable to treatment of injured and ill civilians.*

+(2) (U) Social considerations. *This may include the social climate, role of religion, sex considerations, and events (religious periods and traditional vacations) that affect AHS support operations.*

(3) (U) Other civil considerations. *This could include political, economic, and environmental issues to name a few that may affect AHS support operations.*

h. (U) Health of the command. *The following factors indicate medical measures that the commander should consider prior to each operation being planned.*

(1) (U) Acclimation of forces. *The acclimation of troops is an important consideration in the initial deployment of forces. They may require acclimation not only to heat and cold, but also for elevation (altitude).*

(2) (U) Presence of disease. *What endemic diseases are present in the force (in multinational forces, there may be diseases to their native countries for which U.S. forces do not have an immunity)? What are the endemic diseases in the AO? Are there any epidemic diseases present? Are medical surveillance activities being conducted or required? What disease vectors are in the AO? Are preventive medicine programs, such as pest management activities and biosurveillance required? Has a baseline of disease presence been determined? A shift from the baseline may indicate enemy CBRN.*

(3) (U) Status of immunizations and/or chemoprophylaxis. *Do U.S. forces have all required immunizations to counter the health threat to the force? Has a chemoprophylaxis been prescribed for personnel within the AO? What is the immunization status of the multinational forces, host-nation forces, and civilian population?*

(4) (U) Status of nutrition. *Does the Class I and ration cycle for the operation's feeding cycle meet the nutritional needs and requirements for the operation and the AO? Has the medical supplement for patients been ordered or will it be part of the unit basic load? If pertinent, the nutrition status of multinational forces and or civilian population may also be addressed.*

(5) (U) Clothing and equipment. *Consideration for special clothing and equipment necessary to operate in a particular climate or a particular type of terrain should be included. Examples of clothing and equipment requirements are insect netting, cold-weather clothing, and permethrin treated uniforms.*

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

(4) (U) Laboratory services.

(5) (U) Dental services.

(6) (U) Veterinary services.

(7) (U) Preventive medicine.

(8) (U) Combat and operational stress control.

(9) (U) Area medical support.

(10) (U) Medical command and control.

(11) (U) Others, as appropriate.

c. (U) Resources available.

(1) (U) Other Service support.

(2) (U) Organic medical units and personnel.

(3) (U) Attached medical units and personnel.

(4) (U) Supporting medical units.

(5) (U) Civil public health capabilities and resources. *Civil Affairs personnel are responsible for obtaining host-nation support.*

(6) (U) Enemy prisoner of war medical personnel.

(7) (U) Health Service logistics.

(8) (U) Medical troop ceiling.

4. (U) Courses of Action. *Using the military decision making process and the above considerations and analysis, determine and list all logical COAs which will support the commander's OPLAN and accomplish the AHS mission. Consider all standard operating procedures, policies, and procedures in effect. Refer to ADP 5-0 and FM 6-0 for detailed information on the military decision making process and the COA development.*

a. (U) Course of action development. *A COA is a broad potential solution to an identified problem. The COA development step generates options for follow-on analysis and comparison that satisfy the commander's intent and planning guidance. During the COA development, planners use the problem statement, mission statement, commander's intent, planning guidance, and the various knowledge products developed during mission analysis to develop COAs.*

b. (U) Course of action analysis (war game). *Course of action analysis is one of the most important steps of the military decision making process. Course of action analysis (war-gaming) is a disciplined process, with rules and steps that attempt to visualize the flow of the operation given the force's strengths and dispositions, enemy's capabilities and possible COAs, impact and requirements of civilians in the AO, and other aspects of the situation.*

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

b. (U) Course of action analysis (war game). *Course of action analysis is one of the most important steps of MDMP. Course of action analysis (war-gaming) is a disciplined process, with rules and steps that attempt to visualize the flow of the operation given the force's strengths and dispositions, enemy's capabilities and possible COAs, impact and requirements of civilians in the AO, and other aspects of the situation.*

c. (U) Course of action comparison. *Course of action comparison is an objective process to evaluate COAs independently of each other and against set evaluation criteria approved by the command and staff. The goal to identify the strengths and weaknesses of COAs enables selecting a COA with the highest probability of success and further developing it in an OPLAN or OPORD.*

5. (U) Conclusions.

a. (U) *Indicate whether the mission set forth in paragraph 1 can or cannot be supported. Provide a supporting statement if the AHS mission cannot be accomplished.*

b. (U) *Indicate which AHS COA can best support the mission.*

c. (U) *List the limitations and deficiencies in the preferred COA that must be brought to the commander's attention.*

d. (U) *List factors adversely affecting the health of the command.*

OFFICIAL:

(Authenticator's name)
(Authenticator's position)

[page number]
[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

Appendix B

Patient Rate Computations

Rates are a numerical expression of the relative frequency with which an event occurs. The following rates are commonly used in the health care field to express the occurrence of an event in a population over time.

RATES

B-1. As used in military medicine, the term rate is a numerical expression of the number of times a particular event occurs in a specified population during a given period of time. Types of rates determined are admission rates, mortality rates, incidence rates (specific diseases), prevalence rates, medical noneffective rates, and case fatality rates. Through the use of rates, it is possible to make direct, ready, and meaningful comparisons of events related to different time periods or different populations.

CALCULATING A RATE

B-2. The following formula is used to calculate a rate:

$$\text{Rate} = f \times (T/t) \quad \text{or} \quad \text{Rate} = \frac{f \times T \times k}{t \times s}$$

Where:

f = The observed frequency (such as the number of admissions and deaths).
T = The observed time period.
S = The observed strength or population.
T = The standard time period (per day, per month, per year).
K = The standard unit of population (per 100, per 1,000, per 100,000).

B-3. The value for T must always be expressed in the same unit that is used for the value of t. When it is necessary to be precise in computing an annual rate based upon a particular month's experience, the value of T will be 365 with the observed time period t as the specific number of days in the specific month (30, 31, 28, or 29). When dealing with rates used in military medicine, the most frequently used standard time period T is one year, which gives annual rates as the number per year. For some purposes, such as in planning and patient studies, T is commonly used as one day, and the resultant rate is a daily one, or the number per day.

B-4. The average (or mean) strength s of the time period t in which the frequency of the event occurred should be used where practicable. For military medicine frequency rates, the standard unit of strength or population k is taken as 1,000.

RATES DEFINED

B-5. Rates are a type of frequency measure. In health care, rates are often used to measure an event over time and are sometimes used as performance improvement measures. The basic formula for a rate is as follows:

$$\frac{\text{Number of cases or events occurring during a given time period}}{\text{Number of cases or population at risk during same time period or,}}$$

$$\frac{\text{Total number of times something did happen}}{\text{Total number of times something could happen}}$$

ADMISSION RATE

B-6. Admissions represent a general class of which there are many subclasses. In terms of the reason for admission for medical treatment, the rates may be based only on admissions for—

- Disease (disease admission rate).
- Nonbattle injury.
- The combination of DNBI (all nonbattle causes admission rates).
- Battle injury and wounded.
- A combination of all the foregoing causes (all causes admission rate).

B-7. An admission rate may be computed for the admission due to a particular cause, such as a specific disease.

Admission rate = (f/s) x k

Where:

f = Persons admitted to the medical facility during a specified period.

K = The standard population (1,000).

S = Population during the same period of time that the admission occurred.

MORTALITY RATE

B-8. Mortality rate is a measure of the number of deaths, in general or due to a specific cause, in a population. The mortality (death) rate may differ from the admission rate only in that the event which it measures is the number of deaths, rather than the number of patient admissions. Since the magnitude of the frequencies is less, a large standard unit of population (k) is used (1,000 or 10,000) more frequently than in the case of admission rates. The standard time period will usually be a year.

Mortality rate = (f/s) x k

Where:

f = Deaths occurring during a specified time period.

K = The standard population (1,000).

S = Population during the same time period that the deaths occurred.

INCIDENCE RATE

B-9. The incidence rate measures the number of new diseases diagnosed or reported during a defined period of time, divided by the number of persons in a stated population in which the cases occurred. This is usually expressed as cases per 1,000 or 10,000 yearly.

Incidence rate = (f/s) x k

Where:

f = New cases occurring during a given time period.

K = The standard population (1,000).

S = Population at risk during the same time period.

PREVALENCE RATE

B-10. Prevalence rates measure the total number of persons sick or portraying a certain condition in a stated population at a particular time (point prevalence) or during a stated period of time (period prevalence), regardless of when that illness or condition began, divided by the population at risk of having the disease or condition, at the point in time or midway through the period in which they occur. A case is counted in prevalence until death or recovery.

B-11. The following formula is used in calculating the prevalence rate per 1,000-

Prevalence rate = (f/s) x k

Where:

f = The number of cases of the given condition during a specified time period.

K = The standard population (1,000).

S = Population during the same time period that the cases occurred.

MEDICAL NONEFFECTIVE RATE

B-12. The medical noneffective rate is a measure frequently used in military medicine. It is a special case of the prevalence rate mentioned above. This rate measures the prevalence of noneffectiveness with noneffectiveness being defined as excused from duty for medical reasons. This rate does not generally include time off for clinic visits and days off, other than hospitalization, for illness.

B-13. The noneffective rate may be computed for the patients excused from duty for all causes, or it may be computed for particular groups such as all cases excused from duty due to disease (disease noneffective rate).

B-14. The noneffective rate may be computed by using the same formula as shown for computing the prevalence rate but where f stands for the number of people noneffective in the particular group being studied.

B-15. An alternate method is based on the number of noneffectives on the average day during a particular period rather than on a count of the number of noneffectives as of one particular day.

B-16. When the number of days lost in the period is used rather than the number of patients on the average day of the period, the following formula will be used:

$$\text{Noneffective rate} = \frac{\text{days lost rate x 1,000}}{\text{days in the period x average strength}}$$

B-17. The following relationship is another method to determine the noneffective rate:
Noneffective rate = (daily admission rate) x (average days per patient)

CASE FATALITY RATE

B-18. Case fatality rate or case fatality ratio, is the proportion of persons with a particular condition (cases) who dies from that condition. It is a measure of the severity of the condition. The formula is as follows:

Case fatality rate = (f/c) x k

Where:

c = The overall number of cases being studied during a specific time period.

F = The number of cases that resulted in death during the same specified time period.

K = The standard population (100).

B-19. An example would be to find the case fatality rate for an outbreak of food poisoning where 3 people died out of 555 cases reported.

Case fatality rate = (3 / 555) x 100 = 0.5%

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Appendix C

Army Health System Support Operations Order

This appendix provides an example and guidance on the preparation of an AHS support appendix to an OPORD or OPLAN. Discussion of specific planning consideration is included with the sample formats. These discussions are not all inclusive, but are provided as a thought-provoking example to expand on. Actual considerations are dependent upon mission variables.

EXAMPLE OF AN OPERATION ORDER FORMAT

C-1. Figure C-1 provides an example of Appendix 3, Health Service Support of Annex F, Sustainment. This example is not all inclusive and other subparagraphs may be added as necessary. Refer to FM 6-0 for further information on developing annexes and appendixes for plans and orders.

[CLASSIFICATION]

Place the classification at the top and bottom of ever page of the annex. Place the classification marking at the front of each paragraph and subparagraph in parentheses. Refer to AR 380-5 for classification and release marking instructions.

Copy ## of ## copies
Issuing headquarters
Place of issue
Date-time group of signature
Message reference number

APPENDIX 3 (HEALTH SERVICE SUPPORT) TO ANNEX F (SUSTAINMENT) OF OPERATION PLAN AND ORDER [number] [(code name)] — [issuing headquarters] [(classification of title)]

(U) References: *List documents essential to the understanding of Appendix 3 to Annex F. List references concerning a specific function in the appropriate attachments.*

a. *List maps and charts first. Map entries include series number, country, sheet names, or numbers, edition, and scale.*

b. *List other references in subparagraphs labeled as shown.*

c. *Doctrinal references for Army Health Support includes:*

(1). *Geneva Convention (I) For the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field*, 12 August 1949.

[page number]
[CLASSIFICATION]

Figure C-1. Example of an operation order format

[CLASSIFICATION]

(2) Geneva Convention (II) *For the Amelioration of the Condition of the Wounded, Sick, and Shipwrecked Members of Armed Forces at Sea*, 12 August 1949.

(3) Geneva Convention (III) *Relative to the Treatment of Prisoners of War*, 12 August 1949.

(4) Geneva Convention (IV) *Relative to the Protection of Civilian Persons in Time of War*, 12 August 1949.

(5) Joint Publication 4-02, *Health Service Support*, 11 December 2017.

(6) Field Manual 4-02, *Army Health System*, 26 August 2013.

(7) Field Manual 6-27/MCTP 11-10C, *The Commander's Handbook on the Law of Land Warfare*, 7 August 2019.

(8) Army Techniques Publication 4-02.46, *Army Health System Support to Detainee Operations*, 12 April 2013.

(U) Time Zone Used Throughout the OPLAN or OPORD: *State the time zone used in the AO during execution. When the OPLAN or OPORD applies to units in different time zones, use Greenwich Mean Time (ZULU).*

(U) Task Organization: *Describe the organization of forces available to the issuing headquarters and their command and support relationships. Refer to Annex A (Task Organization) if long or complicated.*

1. (U) Situation. *The situation paragraph describes the conditions of the operational environment that impact operations in the following subparagraphs:*

a. (U) Area of Interest. *Describes the area of interest as it relates to AHS support. Refer to Annex B (Intelligence) as required.*

b. (U) Area of Operations. *In the following subparagraphs describe the characteristics of the AO and how it will affect the AHS functions. Refer to Appendix 2 (Operation Overlay) to Annex C (Operations) as required.*

(1) (U) Terrain. *Describe the aspects of terrain that impact AHS support operations. Refer to Annex B (Intelligence) as required.*

(2) (U) Weather. *Describe the aspects of weather that impact AHS support operations. Refer to Annex B (Intelligence) as required.*

(3) (U) Local resources. *Provide local resources support information. Refer to Annex P (Host-Nation Support) as required.*

c. (U) Enemy Forces. *Identify enemy forces and appraise their general capabilities. Describe the enemy's composition, disposition, location, strength, and probable COA. Identify adversaries and known or potential terrorist threats within the AO. List the enemy capabilities that could influence the AHS and HSS mission. Refer to Annex B (Intelligence) as required.*

d. (U) Friendly Forces. *Briefly identify the missions of friendly forces and the objectives, goals, and missions of civilian organizations that impact the AHS mission in the following subparagraphs.*

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[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

[CLASSIFICATION]

(1) (U) Higher Headquarters Mission and Intent. *Identify and state the mission and commander's intent for headquarters two levels up and one level up from the issuing headquarters.*

(a) (U) Higher Headquarters Two Levels Up. *Identify the higher headquarters two echelons above.*

1. (U) Mission.

2. (U) Commander's Intent.

(b) (U) *Higher Headquarters. Identify the higher headquarters one echelon above.*

1. (U) Mission.

2. (U) Commander's Intent.

(2) (U) Missions of Adjacent Units. *Identify and state the mission of adjacent units and other units whose actions have a significant impact on the issuing headquarters.*

(3) (U) United States Uniformed Services to be supported.

(a) (U) Army.

(b) (U) Navy.

(c) (U) Air Force.

(d) (U) Marines.

(e) (U) Coast Guard.

(4) (U) Department of Defense Civilians.

(5) (U) Multinational forces.

(6) (U) Enemy prisoners of war.

(7) (U) United States national contract personnel.

(8) (U) Indigenous civilians and third country civilians. *Refer to discussion of Articles 15 and 16 of the Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces.*

[page number]
[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

[CLASSIFICATION]

e. (U) Interagency, Intergovernmental, and Nongovernmental Organizations. *Identify and state the objective or goal and primary tasks of those non-DOD organizations that have a significant role within the AO. This would include organizations such as the Center for Excellence in Disaster Management and Humanitarian Assistance, United Nations, World Health Organization, International Committee of the Red Cross, Doctors Without Border, and the Pan America Health Organization to name a few. Refer to Annex V (Interagency Coordination) as required.*

f. (U) Civil Considerations. *For a complete discussion on civil consideration in the planning process refer to ATP 3-57.60.*

(1) Civilian Population. *The presence of civilians on the mission makes AHS support operations more complex. Medical planners need to consider and plan for the potential impact the dislocated civilians, internally dislocated civilians, and retained or detained persons will have. Prior to an operation, a determination of eligibility for care in U.S. MTFs should be made. Clear and concise guidance should be disseminated in the order as both U.S. and international law may be applicable to the treatment of injured and ill civilians.*

+(2) Social Considerations. *This may include the social climate, role of religion, sex considerations, and events (religious periods and traditional vacations) that affect AHS support operations.*

(3) Other Civil Considerations. *This could include political, economic, and environmental issues to name a few that may affect AHS support operations.*

g. (U) Attachments and Detachments. *List units attached to or detached from the issuing headquarters. State when each attachment is effective if different from the effective time of the OPLAN or OPORD. Do not repeat information already listed in Annex A (Task Organization).*

h. (U) Assumptions. *List any AHS specific assumptions that support appendix development.*

2. (U) Mission. *State the overall AHS support mission. Define the unit's mission, a short description of the who, what (task), when, where, and why (purpose) that clearly indicates the action to be taken, and the reason for doing so.*

3. (U) Execution. *Describe how the commander intends to accomplish the mission in terms of the command's intent, an overarching concept of operation, schemes of employment for each warfighting function, assessment, and specified tasks to subordinate units, and key coordination instructions in the subparagraphs below.*

a. (U) Scheme of AHS Support. *Describe how AHS supports the commander's intent and concept of operations. Establish the priorities of AHS support to units for each phase of the operation. Refer to Annex C (Operations) as required. See FM 6-0 for more details.*

b. (U) Tasks to Subordinate Units. *List AHS tasks assigned to specific subordinate units not contained in the base plan or order.*

c. (U) Resources available.

(1) (U) Supplies and Equipment. *This includes both medical and nonmedical supplies and equipment that may be unique to the support of the operation. This may include a list of equipment and resources needed to support urban operations and stability and defense support to civil authorities' tasks.*

[page number]
[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

[CLASSIFICATION]

(2) (U) Additional Medical Assets. *List any available additional medical assets that were not previously listed*.

d. (U) Coordinating Instructions. *List only instructions applicable to two or more subordinate units not covered in the base order.*

e. (U) Interagency, Intergovernmental, and Nongovernmental Organizations. *Identify and state the objective or goal and primary tasks of those non-DOD organizations that have a significant role within the AO. This would include organizations such as the Center for Excellence in Disaster Management and Humanitarian Assistance, United Nations, World Health Organization, International Committee of the Red Cross, Doctors Without Border, and the Pan America Health Organization to name a few. Refer to Annex V (Interagency Coordination) as required.*

f. (U) Civil Considerations. *Describe the critical aspects of the civil situation that impact AHS support operations, such as cultural or religious sensitivities.*

4. (U) Sustainment. *Identify sustainment priorities for AHS support to operations key tasks and specify additional sustainment instructions as necessary.*

a. (U) Material and Services. *Refer to standard operating procedures or another annex whenever practical.*

b. (U) General Supply. *Provide special instructions applicable to medical units.*

c. (U) Classes of Supply. *Consider supply levels for all classes of supply, in the event of mission requirements in an austere environment and at extended distances from the full complement of logistics and sustainment resources.*

d. (U) Medical Logistics. *Provide special procedures applicable to this operation for Class VIII resupply and medical maintenance request and procedures if different from Annex F (Sustainment).*

(1) (U) Distribution. *Include the method of distribution and any limitations or restrictions that are applicable. Additionally, if special transportation requirements exist, they should also be noted.*

(2) (U) Medical Logistic Activities. *This includes the location of the medical supply activities supporting the AO and the means of communicating requests for resupply.*

e. (U) Salvage of Medical Equipment and Supplies. *Provide instructions for the procedures to manage the salvage of medical equipment and supplies.*

f. (U) Captured Enemy Medical Equipment. *Provide special instructions for the disposition of captured or recovered enemy medical supplies.*

g. (U) Civilian Medical Supplies. *Provide special instructions for the disposition of civilian medical supplies.*

h. (U) Other Medical Supply Matters.

5. (U) Command and Signal.

[page number]
[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

[CLASSIFICATION]

a. (U) Command.

(1) (U) Location of the Commander and Key Leaders. *State the location of the commander and AHS key leaders and command surgeons.*

(2) (U) Succession of Command. *State the succession of command if not covered in the base order.*

(3) (U) Liaison Requirements. *State the AHS liaison requirements not covered in the base order.*

b. (U) Control.

(1) (U) Command Posts. *Describe the employment of AHS-specific command posts, including the location of each control post and its time of opening and closing.*

(2) (U) Reports. *List AHS–specific reports not covered in standard operating procedures. Refer to Annex R (Reports) as required.*

c. (U) Signal. *Address any AHS sustainment-specific communication requirements. Refer to Annex H (Signal) as required.*

ACKNOWLEDGE: *Include only if annex is distributed separately from the base order.*

[Commander or Command Surgeon's last name]
[Commander or Command Surgeon's rank]

The commander or authorized representative signs the original copy of the attachment. If the representative signs the original, add the phrase "For the Commander." The signed copy is the historical copy and remains in the headquarters' files.

OFFICIAL:

[Authenticator's name]
[Authenticator's position]

Use only if the commander does not sign the original attachment. If the commander signs the original, no further authentication is required. If the commander does not sign, the signature of the preparing staff officer requires authentication and only the last name and rank of the commander appears in the signature block.

TABS: *List AHS medical function tabs as they apply.*

Tab A – Medical Command and Control
Tab B – Medical Treatment
Tab C – Medical Evacuation
Tab D – Hospitalization
Tab E – Dental Services
Tab F – Preventive Medicine
Tab G – Combat and Operational Stress Control

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[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

[CLASSIFICATION]

Tab H – Veterinary Services
Tab I – Medical Logistics
Tab J –Laboratory Support

DISTRIBUTION: *Show only if distributed separately from the base order or higher-level attachments.*

[page number]
[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

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Appendix D

Calculation of Hospital Bed Requirements

Although there are automated systems for determining hospital bed requirements, the use of manual calculation is justified in some circumstances due to mission variables. In addition, every medical planner needs to understand the methodology used. This appendix presents a manual methodology based on historical data (terms and acronyms are retained to enhance operational understanding within the context of the examples given) on the patient flow model for calculating the number of hospital beds required in the theater of operations. Application of Methodology

APPLICATION OF METHODOLOGY

D-1. The number of beds required to support a particular force depends on the following—

- Projected daily average number of hospitals admissions.
- Evacuation policy.
- Dispersion factor.

D-2. The projected daily average number of hospital admissions can be determined by applying the applicable anticipated admission rates, based on previous combat experience modified to include new factors applicable to new conditions, to unit strengths.

D-3. As a situation progresses, every echelon of command will gradually build up loss experience that more accurately reflects the current conditions. Even the most complete and accurate figures relating to past operations cannot be relied on as valid for future operations. With experience as a basis, good judgment and sound knowledge are used to develop new tables applicable to current and near future operational conditions.

D-4. Based upon the theater evacuation policy, the number of patients remaining in hospitals at the end of a given period (optimally 30 days) may be determined. This calculation is made by applying an accumulation factor to the average daily admissions to determine how many patients will accumulate during the period of estimate. Tables D-1 and D-2, on pages D-2 and D-3, provide examples of accumulation factors.

Table D-1. Example accumulation and disposition factors–combat zone

*Based on the assumption of one admission per day of the specified classification of patients during the first period of estimate (30 days)**									
*Current and subsequent periods***	*Evacuation policy (days)*	*Wounded in action*				*Disease and nonbattle injuries*			
		*Accumulation****	*Return to duty #*	*Died in hospital ##*	*Evacuated ###*	*Accumulation*	*Return to duty*	*Died in hospital*	*Evacuated*
1	5	2.0265	0.9736	0.3243	26.6756	1.7676	5.7175	0.037	22.4779
2	5	0	0.1034	0.0177	1.9054	0	0.5825	0.002	1.1831
1	7	3.1063	1.6371	0.356	24.9006	2.7768	8.6334	0.0419	18.5479
2	7	0	0.2524	0.025	2.8284	0	1.2336	0.0031	1.5401
1	10	4.7076	2.4207	0.385	22.4867	4.245	11.9923	0.0463	13.7164
2	10	0	0.5373	0.035	4.1353	0	2.4287	0.0047	1.8116
1	15	6.6306	3.3581	0.4053	19.606	6.1563	14.5346	0.0481	9.261
2	15	0	1.1599	0.0477	5.423	0	4.0714	0.0059	2.079
1	5	2.0265	0.9736	0.3243	26.6756	1.7676	5.7175	0.037	22.4779
2	10	0	0.2288	0.0229	1.7748	0	0.9886	0.0026	0.7764
1	7	3.1063	1.6371	0.356	24.9006	2.7768	8.6334	0.0419	18.5479
2	15	0	0.5210	0.0323	2.5530	0	1.9036	0.0038	0.8694
1	10	4.7076	2.4207	0.385	22.4867	4.245	11.9923	0.0463	13.7164
2	15	0	0.7796	0.0401	3.8879	0	2.9169	0.0050	1.3230
1	10	4.7076	2.4207	0.385	22.4867	4.245	11.9923	0.0463	13.7164
2	5	0	0.1034	0.0177	1.9054	0	0.5825	0.002	1.1831
1	15	6.6306	3.3581	0.4053	19.606	6.1563	14.5346	0.0481	9.261
2	7	0	0.2529	0.0250	6.3527	0	1.2336	0.0031	4.9196
1	15	6.6306	3.3581	0.4053	19.606	6.1563	14.5346	0.0481	9.261
2	10	0	0.5393	0.0350	6.0583	0	2.3287	0.0047	3.7229

Legend:

* Derived from the complete hospitalization and evacuation experience of all United States Army wounded in action and disease and nonbattle injuries patients admitted to hospitals in the Korean Conflict and all United States Army disease and nonbattle injuries cases admitted to any overseas hospitals during the same period.

** Thirty days each.

*** Accumulation of patients at end of period.

\# Return to duty dispositions during the period.

Died in hospital dispositions during the period.

Patient evacuation dispositions out of the combat zone during the period.

Table D-2. Example accumulation and disposition factors–theater

*Based on the assumption of one admission per day of the specified classification of patients during the first period of estimate (30 days)**									
*Current and sub-sequent periods***	*Evacua-tion policy (days)*	*Wounded in action*				*Disease and nonbattle injuries*			
		*Accumu-lation ****	*Return to duty #*	*Died in hospital ##*	*Evacuated ###*	*Accumulation*	*Return to duty*	*Died in hospital*	*Evacuated*
1	15	9.5249	3.3581	0.4053	16.7117	7.4828	14.5346	0.0481	7.9345
2	15	0	1.1599	0.0477	8.3173	0	4.0714	0.0059	3.4055
1	30	15.0607	4.6585	0.4146	9.8662	10.8494	16.1905	0.0493	2.9108
2	30	0	4.5875	0.0684	10.4048	0	7.6175	0.0077	3.2242
1	15	9.5249	3.3581	0.4053	16.7117	7.4828	14.5346	0.0481	7.9345
2	30	0	2.731	0.0377	6.7362	0	5.6336	0.0088	1.8424
1	30	15.0607	4.6585	0.4146	9.8662	10.8494	16.1905	0.0493	2.9108
2	15	0	1.1599	0.0477	8.3173	0	4.0714	0.0059	3.4055

Legend:

* Derived from the complete hospitalization and evacuation experience of all United States. Army wounded in action and disease and nonbattle injuries patients admitted to hospitals in the Korean Conflict and all United States Army disease and nonbattle injuries cases admitted to any overseas hospitals during the same period.

** Thirty days each.

*** Accumulation of patients at end of period.

\# Return to duty dispositions during the period.

Died in hospital dispositions during the period.

Patient evacuation dispositions out of the combat zone during the period.

D-5. To meet the requirements of a dynamic and fluid AO, the hospitalization system must maintain certain flexibility. This flexibility is accomplished by moving hospitals to locations of expected high patient density. The percentage of all hospital beds required to remain empty to ensure flexibility is expressed as a dispersion allowance. This allowance is converted to a dispersion factor. It is then applied to the number of patients remaining at a particular level of hospitalization to allow for the dispersion of hospital beds. Dispersion allowance and dispersion factor are further discussed in paragraph D-6.

DISPERSION ALLOWANCE

+D-6. This is the percentage of all hospital beds at a level of hospitalization that are required to remain empty to allow for necessary patient dispersion and hospital flexibility. Certain flexibility is needed to initiate hospital relocation using this uncommitted bed capacity or to absorb the sudden influx of patients generated by a mass casualty situation, refer to Table D-3 on page D-4 for dispersion factor. Additionally, separation of patients for reasons of contagious disease, sex, type of treatment (medical surgical), and psychiatric problems, among others, creates a certain number of empty beds within the various wards of a hospital. Providing care for EPWs under the Geneva Convention requires additional hospital units.

DISPERSION FACTOR

D-7. This is a factor used in computing bed requirements. It is a mathematical derivation of the dispersion allowance. A dispersion factor equals 100 percent / (100 percent minus the dispersion allowance) 1.00 / (1.00 – DA) = DF. Where:

DA = dispersion allowance.

DF = dispersion factor.

D-8. In the past, several dispersion allowances and factors have been used to calculate requirements for different scenarios and locations. These different variables are now reduced to a single dispersion allowance and factor to coincide with the ones used in the Total Army Analysis that predicts future needs and requirements. Refer to Table D-3 for current dispersion allowance and dispersion factor numbers and conversion.

Table D-3. Dispersion allowance and factor conversion table

Dispersion allowance (percent)	*Dispersion factor*
20	1.25

D-9. A similar methodology may be used to calculate patient dispositions. To determine patient dispositions, disposition factors are substituted for accumulation factors. Multiplication by a dispersion factor is omitted from this procedure. Refer to Tables D-1 and D-2 on pages D-2 and D-3 for example disposition factors.

D-10. The below paragraphs describe in detail the methodology for determining bed requirements for the theater, and illustrates how the theater evacuation policy affects the CONUS bed requirements.

D-11. The following is an explanation of terms used in the manual methodology:

- Levels of hospitalization. For the methodology here, the levels of hospitalization include
- Role 3 and the CONUS Role 4. All theater hospitalization combined with the CONUS, constitute the total (worldwide) hospitalization system.
- Periods of estimate. These are consecutive periods (intervals) of time (in days), usually measured from the beginning of a military operation. Normally, the time period length for manual calculation is 30 days. Bed requirements are normally calculated at the end of each time period.
- Hospital admission. This is the initial entry of an individual as an inpatient into a hospital for a single episode of illness or injury anywhere in the theater. If the same inpatient is discharged from a hospital and later readmitted for a different illness or injury or for a recurrence of the same illness or injury, the individual is counted as another separate admission.
- Patient admission rate. This is the average daily number of admissions per 1,000 average daily strength for a specified portion of the population served and specified period(s). Tables
- D-4a through D-4i (on pages D-5 through D-10) shows the separate admission rates for WIA patients and DNBI patients for different conflicts and environment conditions.
- Accumulation factor. Assuming a constant admission of one patient per day during a specific period of estimate (and none thereafter), this factor is the expected number of patients remaining (occupying beds) at a particular level of hospitalization at the end of each consecutive period.
- Intermediate of final disposition. An intermediate of disposition is a patient evacuation to the next role of hospitalization (or in some cases, another hospital at the same Role of care). Final dispositions are returned to duty, died in hospital, and at Role 4 only, disability discharge.
- Disposition factor. Assuming a constant admission of one patient per day during a specific period of estimate (and none thereafter), the disposition factor is the expected number of patients receiving a particular type disposition from a particular level of hospitalization during each consecutive period. Types of disposition include returned to duty, died in hospital, evacuated, or disability discharge (CONUS only).
- Dispersion allowance. See paragraph D-6 on page D-3.
- Dispersion factor. See paragraph D-7 on page D-3.

D-12. When the dispersion factor is multiplied by the calculated number of patients remaining, it yields the number of beds required to provide for necessary dispersion. A dispersion allowance of 20 percent calculates a dispersion factor of 1.25 (Table D-3 on page D-4). In determining the dispersion allowance, the medical planner must be continually informed as to both the existing and possible future tactical situations. The normal dispersion allowance/factor (20 percent / 1.25) is based on World War II and the Korean Conflict and may have to be adjusted for any future war. In Vietnam for example, the dispersion factor was 40 percent to support unexpected surges in the casualty flow resulting from hostile actions. Due to increased exposure to deep enemy penetrations and destruction of support areas, MTFs may have to be small and well dispersed. The contingencies will decrease the efficient use of beds and require the application of a greater dispersion allowance or factor for planning purposes. Normally, 80 percent occupancy of available beds is the operational maximum. This, therefore, equates to a 20 percent dispersion allowance.

Table D-4a. Disease and nonbattle injury patient admission rates–Desert Shield/Storm, Bosnia, Kosovo, Operation Iraqi Freedom/Operation New Dawn, Operation Enduring Freedom (admissions per 1,000 strengths per day) as of April 2014

Operations	*Entire operations 95% rate*	*Build-up phase 95% rate*	*Combat phase 95% rate*	*Postdeployment phase 95% rate*
Desert Shield/Storm	0.392	0.404	0.586	0.372
Bosnia	0.517	–	–	–
Kosovo	0.510	–	–	–
Operation Enduring Freedom	0.285	–	–	–
Operation Iraqi Freedom/Operation New Dawn	0.208	0.417	0.287	0.202

Note:

- This chart displays the 95th percentile daily hospital admission rate per 1,000 Soldiers for disease and nonbattle injury casualties. When used with the troop strength for a selected operation and phase of the operation (if applicable), the medical planner can calculate the expected number of daily admissions. These rates are based on actual medical and troop strength data for the selected operations and phases.
- 95th Percentile – The 95th percentile daily rate is the daily rate that is greater than or equal to 95% of all daily rates during the operation.

Table D-4b. Patient admission rates–Overall in World War II, Korean Conflict, and Vietnam Conflict (admissions per 1,000 strengths per day)

Offensive operations											
Infantry			***Mechanized***			***Armored***			***Nondivisional***		
WIA	***DNBI***	***Total***	***WIA***	***DNBI***	***Total***	***WIA***	***DNBI***	***Total***	***WIA***	***DNBI***	***Total***
WWII-Europe (See Table D-4c)											
3.04	2.61	5.65	2.17	2.04	4.21	1.29	1.44	2.73	0.39	1.33	1.72
WWII-Italy (See Table D-4d)											
1.97	4.15	6.12	2.46	3.12	5.58	2.93	2.06	4.99	0.40	2.01	2.41
WWII-Central and South Pacific (See Table D-4f)											
1.91	1.17	3.08	1.77	0.81	2.58	1.16	0.63	1.79	0.63	0.76	1.39
WWII-Southwest Pacific (See Table D-4g)											
2.08	5.73	7.81	1.92	4.33	6.25	1.75	2.89	4.64	0.99	4.06	5.05
Mideast (See Table D-4e)											
2.29	1.96	4.25	2.30	1.98	4.28	2.29	1.96	4.25	0.40	1.60	2.00
Korean Conflict (See Table D-4h)											
0.82	1.67	2.49	0.76	1.33	2.09	0.69	0.96	1.65	0.54	2.14	2.68
Vietnam Conflict (See Table D-4i)											
0.42	0.89	1.31	0.39	0.69	1.08	0.35	0.46	0.81	0.14	0.92	1.06

Legend:
DNBI disease and nonbattle injury
WIA wounded in action
WWII World War II

Table D-4c. Patient admission rates-Europe, World War II (admissions per 1,000 strengths per day).

Terrain and climate	*Infantry*			*Mechanized*			*Armored*			*Nondivisional*		
	WIA	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*
Offensive operations												
Mountain-cold	9.74	5.81	15.55	6.86	5.08	11.94	3.97	1.32	5.29	0.56	1.27	1.83
Plains-cold	5.31	4.97	10.28	4.37	4.09	8.46	3.41	3.18	6.59	0.38	1.23	1.61
Plains-hot	8.82	3.47	12.29	6.32	3.34	9.66	3.80	3.19	6.99	0.49	1.45	1.94
Defensive operations												
Mountain-cold	7.48	4.16	11.64	5.55	3.50	9.05	3.61	2.80	6.41	2.46	2.80	5.26
Plains-cold	1.79	2.99	4.78	1.54	2.41	3.95	1.28	1.79	3.07	0.20	1.44	1.64
Plains-hot	4.58	2.20	6.78	3.06	2.05	5.11	1.52	1.87	3.39	0.12	0.64	0.76
Reserve operations												
Mountain-cold	0.30	2.00	2.30	0.28	1.56	1.84	0.25	1.09	1.34	0.13	1.29	1.42
Plains-cold	0.86	2.95	3.81	0.79	2.25	3.04	0.70	1.52	2.22	0.28	1.87	2.15
Plains-hot	1.74	2.16	3.90	1.46	1.69	3.15	1.17	1.20	2.37	0.57	1.37	1.94
Pursuit operations												
Mountain-cold	3.62	3.74	7.36	3.57	2.76	6.33	3.50	1.75	5.25	1.19	2.52	3.71
Plains-cold	2.71	2.27	4.98	2.46	1.85	4.31	2.19	1.69	3.88	0.89	1.47	2.36
Plains-hot	1.47	1.17	2.64	2.28	1.12	3.40	3.08	1.04	4.12	0.48	0.78	1.26
Inactive operations												
Plains-cold	0.16	1.47	1.63	0.09	1.15	1.24	0.01	0.79	0.80	0.05	0.95	1.00
Plains-hot	0.42	0.75	1.17	0.54	0.65	1.19	0.65	0.52	1.17	0.14	0.50	0.64
Airborne operations												
Plains-cold	10.45	2.99	13.44	0.00	0.00	0.00	0.00	0.00	0.00	3.44	2.13	5.57
Plains-hot	9.20	1.27	10.47	0.00	0.00	0.00	0.00	0.00	0.00	3.03	0.82	3.85
Amphibious operations												
Plains-hot	10.45	0.81	11.26	9.63	0.65	10.28	8.80	0.46	9.26	3.44	0.54	3.98
River-crossing operations												
Mountain-cold	4.84	4.00	8.84	6.58	4.43	11.01	8.31	4.83	13.14	1.59	2.56	4.15
Plains-cold	5.57	3.54	9.11	5.14	2.69	7.83	4.69	1.82	6.51	1.83	2.23	4.06
Plains-hot	5.46	2.83	8.29	3.80	1.70	5.50	2.12	0.54	2.66	1.80	1.80	3.60
Mountain-hot	10.22	6.88	17.10	9.42	5.17	14.59	8.61	3.44	12.05	3.36	4.20	7.56

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

Table D-4d. Patient admission rates-Italy, World War II (admissions per 1,000 strengths per day).

Terrain and climate	*Infantry*			*Mechanized*			*Armored*			*Nondivisional*		
	WIA	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*
Offensive operations												
Mountain-cold	4.68	5.51	10.19	4.32	4.19	8.51	3.94	2.93	6.87	0.07	1.68	1.75
Plains-cold	15.60	5.50	21.10	14.38	4.16	18.54	13.14	2.80	15.94	5.13	3.47	8.60
Plains-hot	12.51	2.89	15.40	11.53	2.24	13.77	10.53	1.56	12.09	0.58	1.71	2.29
Mountain-hot	4.26	4.23	8.49	4.44	3.44	7.88	4.60	2.62	7.22	0.69	1.86	2.55
Defensive operations												
Mountain-cold	0.26	1.74	2.00	0.25	1.33	1.58	0.22	0.89	1.11	0.19	1.99	2.18
Plains-cold	2.18	5.12	7.30	2.02	3.87	5.89	1.84	2.59	4.43	0.72	3.22	3.94
Plains-hot	0.75	3.22	3.97	0.70	2.47	3.17	0.63	1.69	2.32	0.25	2.05	2.30
Reserve operations												
Mountain-hot	0.45	1.97	2.42	0.42	1.53	1.95	0.38	1.06	1.44	0.15	1.27	1.42
Plains-cold	0.19	3.58	3.77	0.18	2.72	2.90	0.16	1.83	1.99	0.06	2.26	2.32
Plains-hot	0.14	4.54	4.68	0.08	3.39	3.47	0.01	2.21	2.22	0.05	2.86	2.91
Pursuit operations												
Mountain-cold	3.61	3.13	6.74	3.33	2.41	5.74	3.04	1.65	4.69	1.19	2.00	3.19
Plains-cold	0.63	1.69	2.32	0.59	1.35	1.94	0.53	0.98	1.51	0.21	1.12	1.33
Plains-hot	1.28	2.00	3.28	1.46	1.62	3.08	1.62	1.22	2.84	0.05	2.86	2.91
Inactive operations												
Plains-cold	0.52	0.72	1.24	0.81	3.55	4.36	1.08	2.36	3.44	0.17	2.95	3.12
Plains-hot	1.15	2.53	3.68	1.07	1.92	2.99	0.97	1.29	2.26	0.38	1.59	1.97
Amphibious operations												
Plains-cold	6.06	1.57	7.63	5.59	1.23	6.82	5.10	0.82	5.92	1.99	1.00	2.99
Plains-hot	16.05	7.66	23.71	14.79	5.85	20.64	13.51	4.00	17.51	5.38	4.88	10.26
River-crossing operations												
Mountain-cold	1.78	4.64	6.42	1.65	3.49	5.14	1.50	2.30	3.80	0.59	2.89	3.48
Plains-cold	2.68	5.10	7.78	2.48	3.87	6.35	2.26	2.61	4.87	0.88	3.23	4.11
Plains-hot	5.64	2.73	8.37	5.20	2.10	7.30	4.75	1.46	6.21	1.86	1.75	3.61
Mountain-hot	1.08	3.21	4.29	1.00	2.42	3.42	0.91	1.61	2.52	0.36	2.10	2.46

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

Table D-4e. Patient admission rates–Mideast Wars (between opposing non-U.S. forces) (admissions per 1,000 strengths per day)

Terrain and climate	*Infantry*			*Mechanized*			*Armored*			*Nondivisional*		
	WIA	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*
All operations												
Desert-hot	2.29	1.96	4.25	2.30	1.98	4.28	2.29	1.96	4.25	0.40	1.60	2.00

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

Table D-4f. Patient admission rates–Central and South Pacific, World War II (admissions per 1,000 strengths per day)

Terrain and climate	*Infantry*			*Mechanized*			*Armored*			*Nondivisional*		
	WIA	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*
Offensive operations												
Mountain-hot	2.29	1.96	4.25							3.00	1.69	4.69
Offensive operations												
Plains-cold	0.45	4.19	4.64							0.15	2.60	2.75
Inactive operations												
Mountain-hot	0.00	0.99	0.99							0.00	0.64	0.64
Plains-cold	0.00	0.40	0.40							0.00	0.25	0.25
Amphibious operations												
Mountain-jungle	4.48	1.19	5.67							1.47	0.79	2.26
Plains-jungle	5.64	1.28	6.92							1.86	0.86	2.72
Plains-hot	12.78	1.21	13.99							4.20	0.80	5.00

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

Table D-4g. Patient admission rates–Southwest Pacific, World War II (admissions per 1,000 strengths per day)

Terrain and climate	*Infantry*			*Mechanized*			*Armored*			*Nondivisional*		
	WIA	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*	*WIA*	*DNBI*	*Total*
Defensive operations												
Mountain-cold	4.13	5.63	9.76							1.36	3.51	4.87
Mountain-hot	2.68	5.13	7.81							0.78	4.38	5.16
Plains-hot	3.65	4.63	8.28							1.20	2.90	4.10
Mountain-jungle	1.61	4.26	5.87							0.53	2.68	3.21
Plains-jungle	4.16	4.34	8.50							1.37	2.93	4.30
Offensive operations												
Plains-cold	0.00	6.01	6.01							0.00	3.76	3.76
Airborne operations												
Mountain-hot	17.75	3.11	20.86							5.84	1.89	7.73
Inactive operations												
Plains-cold	0.00	6.14	6.14							0.00	3.86	3.86

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

Table D-4h. Patient admission rates–Korean Conflict (per 1,000 strength per day)

Terrain and climate	Infantry			Mechanized			Armored			Nondivisional		
	WIA	DNBI	Total	WIA	DNBI	Total	WIA	DNBI	Total	WIA	DNBI	Total
Offensive operations												
Mountain-cold	3.54	3.07	6.61	3.27	2.46	5.73	2.98	1.87	4.85	0.19	1.82	2.01
Plains-cold	1.46	3.49	4.95	1.35	2.77	4.12	1.23	2.02	3.25	0.48	2.31	2.79
Mountain-hot	2.42	2.33	4.75	2.24	4.83	7.07	2.04	1.30	3.34	0.07	1.31	1.38
Defensive operations												
Mountain-cold	4.75	4.86	9.61	4.38	4.06	8.44	4.00	3.23	7.23	0.43	2.03	2.46
Plains-cold	0.70	4.72	5.42	0.65	3.93	4.58	0.59	3.11	3.70	0.23	3.32	3.55
Plains-hot	8.03	3.21	11.24	7.40	2.48	9.88	6.76	1.71	8.47	2.64	2.06	4.70
Mountain-hot	2.99	3.14	6.13	2.76	2.44	5.20	2.52	1.72	4.24	1.47	3.09	4.56
Reserve operations												
Mountain-hot	0.05	1.74	1.79	0.05	1.37	1.42	0.04	0.97	1.01	0.02	1.13	1.15
Plains-cold	0.29	2.51	2.80	0.27	2.01	2.28	0.24	1.49	1.73	0.10	1.68	1.78
Plains-hot	0.04	1.32	1.36	0.04	1.04	1.08	0.03	0.73	0.76	0.01	0.86	0.87
Mountain-hot	0.07	1.37	1.44	0.07	1.09	1.16	0.06	0.77	0.83	0.02	0.89	0.91
Pursuit operations												
Mountain-cold	0.64	3.18	3.82	0.60	2.61	3.21	0.54	2.00	2.54	0.21	2.19	2.40
Plains-cold	0.39	2.12	2.51	0.27	1.50	1.77	0.13	0.86	0.99	0.00	0.00	0.00
Mountain-hot	1.40	1.84	3.24	1.30	1.43	2.73	1.18	1.01	2.19	0.60	1.72	2.32
Inactive operations												
Mountain-cold	0.15	1.49	1.64	0.15	1.19	1.34	0.13	0.86	0.99	0.01	1.52	1.53
Plains-cold	0.07	0.69	0.76	0.07	0.56	0.63	0.06	0.39	0.45	0.02	0.45	0.47
Plains-hot	0.14	0.50	0.64	0.14	0.40	0.54	0.12	0.28	0.40	0.05	0.33	0.38
Mountain-hot	0.14	0.78	0.92	0.14	0.63	0.77	0.12	0.44	0.56	0.05	0.41	0.46
Amphibious operations												
Plains-hot	1.83	0.44	2.27	1.69	0.36	2.05	1.54	0.25	1.79	0.60	0.29	0.89
River-crossing operations												
Mountain-cold	6.94	3.99	10.93	6.40	3.14	9.54	5.84	2.26	8.10	2.28	1.62	3.90
Plains-cold	7.20	2.41	9.61	6.64	1.95	8.59	6.06	1.46	7.52	2.37	1.63	4.00
Plains-hot	3.32	2.01	5.33	3.07	1.57	4.64	2.80	1.10	3.90	1.09	1.31	2.40

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

Table D-4i. Patient admission rates–Vietnam Conflict (per 1,000 strength per day)

Terrain and climate	Infantry			Mechanized			Armored			Nondivisional		
	WIA	DNBI	Total	WIA	DNBI	Total	WIA	DNBI	Total	WIA	DNBI	Total
All operations												
Jungle-mountain-hot	0.42	0.89	1.31	0.39	0.69	1.08	0.35	0.46	0.81	0.14	0.92	1.06

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

EXAMPLE PROBLEM

D-13. Table D-5 on page D-12 shows the problem statement for the data needed prior to and during the example application of this methodology.

D-14. Additional information includes the—

- given force for this problem is comprised of a corps consisting of three divisions which consists of infantry, Stryker, and armored BCTs in a mature European theater.
- operational area's terrain consists of plains. The time of the year is midwinter. Two of the divisions are in the theater, and one will arrive in theater on D+59.
- current corps operations are defensive with offensive operation commencing on D+60 and planned through D+119.
- evacuation policies are 7 days for the first 60 days and 15 days for D+60 through D+119.
- dispersion allowance will be 20 percent for the theater.
- period length is 30 days.

D-15. Determine the theater hospital beds required to support the given force from D-day through D+119. Also, determine how the theater evacuation policy affects CONUS bed requirements. The given information is graphically depicted in Table D-6 on page D-13.

D-16. The admission rates can be determined from Tables D-4a through D-4i, on pages D-5 through D-10, based on the type units, theater, terrain, and climate given in the problem statement. In this case, the medical planner will use Table D-4b on page D-6.

D-17. To solve this problem, the medical planner will try to determine which of the following rates best fit the problem statement:

- Division under the modular force design which consists of infantry, armor or Stryker BCTs in defensive operations rates for periods 1 and 2 for the corps forward area (division troops and nondivision combat troops).
- Division consisting of infantry, armor or Stryker BCTs in offensive operations rates for
- periods 3 and 4 for the corps forward area (division troops and nondivision combat troops).
- Nondivisional reserve operations rates for the corps sustainment area (nondivision support troops).
- Nondivision inactive operations rates for the theater (nondivision support troops).

Table D-5. Example problem statement

	Periods (30 Days)	
	1st and 2nd	***3rd and 4th***
Average daily strengths		
Operations area		
Division troops	32,000	48,000
Nondivision combat troops*	24,000	36,000
Nondivision support troops	20,000	30,000
Sustainment area		
Nondivision support troops	20,000	30,000
Evacuation policies		
Operations area	7 days	15 days
Sustainment area	30 days	30 days
Dispersion factor **		
All areas	1.25 (20%)	1.25 (20%)
Admission rates		
Operational area		
Division troops/nondivision		
Combat troops		
WIA	1.54	4.37
DNBI	2.41	4.09
Nondivision support troops		
(corps support area)		
WIA	0.28	0.28
DNBI	1.87	1.87
Sustainment area		
WIA	0.05	0.05
DNBI	0.95	0.95

Note: Admission rates are determined from Table D-4c on page D-6, Inactive operations.

Legend:
* Use division admission rates since this most closely fits the situation.
** Factor determined from Table D-3 on page D-4.
DNBI disease and nonbattle injury
WIA wounded in action

Table D-6. Example of preliminary bed requirement information (problem statement graphically depicted)

*Operations area (population served)**							
		Division troops and nondivision combat troops			***Nondivision support troops***		
Periods of estimate**	Intratheater evacuation policy (days)	Average daily strength (1,000s)**	WIA admission rate (per_1,000)	DNBI admission rate (per_1,000)	Average daily strength (1,000s)***	WIA admission rate (per_1,000)	DNBI admission rate (per_1,000)
1	7	56	1.54	2.41	20	0.28	1.87
2	7	56	1.54	2.41	20	0.28	1.87
3	15	84	4.37	4.09	30	0.28	1.87
4	15	84	4.37	4.09	30	0.28	1.87

*Sustainment area (population served)**					
Periods of estimate**	Intratheater evacuation policy (days)	Average daily strength (1,000s)***	WIA admission rate (per_1,000)	DNBI admission rate (per_1,000)	CONUS average daily strength (1,000s)***
1	15	20	0.05	0.95	0
2	15	20	0.05	0.95	0
3	30	30	0.05	0.95	0
4	30	30	0.05	0.95	0

Legend:

*	Dispersion factor is 20% (1.25).
**	Use the closest average daily strength for the population to be served during each period.
***	Thirty days each.
CONUS	continental United States
DNBI	disease and nonbattle injury
WIA	wounded in action

D-18. Methodology for the operations area- using Tables D-2 and D-3, on pages D-3 and D-4, (or appropriate actual figures), select the type of operations area population to be served according to the expected admission experience of division and nondivision combat troops and nondivision support troops, the number of 30-day periods, and the evacuation policy for each period. Table D-7 on page D-14 shows the completed example calculations.

Table D-7. Example calculations of operations area bed requirements at end of each 30-day period

Operations area daily admissions						*Operations area accumulation factors for consecutive periods*				*Operations area remaining at end of consecutive periods*			
Patient class	*Period of estimate*	*Evac policy*	*Div & nondiv cbt trps +*	*Nondiv spt trps =*	*Total x*	*1*	*2*	*3*	*4*	*1*	*2*	*3*	*4*
WIA	1	7	86.24	5.60	91.84	3.1063	0	0	0	285.28	0	0	0
	2	7	86.24	5.60	91.84		3.1063	0	0		258.28	0	0
	3	15	367.08	8.40	375.48			6.6306	0			2,489.66	0
	4	15	367.08	8.40	375.48				6.6306				4,489.66
DNBI	1	7	134.96	37.40	172.36	2.7768	0	0	0	478.61	0	0	0
	2	7	134.96	37.40	172.36		2.7768	0	0		478.61	0	0
	3	15	343.56	56.10	399.66			6.1563	0			2,460.43	0
	4	15	343.56	56.10	399.66				6.1563				2,460.43
Total patients remaining in operations area hospitals (from population served).										763.89	763.89	4,950.09	4,950.09
Operations area dispersion factor (1.25) (dispersion allowance=20%).										X 1.25	X 1.25	X 1.25	X 1.25
Operations area bed requirements at end of each 30-day period.										955	955	6,188	6,188

Note: The above example numbers must be substituted with actual numbers when calculating bed requirements. Total bed requirements rounded to the next higher whole number.

Legend:
CBT combat
DIV division
DNBI disease and nonbattle injury
EVAC evacuation
NONDIV nondivision
SPT support
TRPS troops
WIA wounded in action

D-19. Perform the following steps below for WIA patients and then again for DNBI for each period of estimate:

- Use the example accumulation and disposition factors in Table D-2 on page D-3 (or appropriate actual figures) to obtain the total average daily operation area admissions (WIA or DNBI) for the current period of estimate. Multiply the average daily strength (for each type population served) by the corresponding admission rate (per 1,000 troops), then sum the results obtained for each population served separately (division and nondivision combat troops and nondivision support troops).
- Table D-8 illustrates the process used to obtain period 1 operation area average admissions. Compare the numbers obtained with the numbers shown in the example solution in Table D-7. Note that in Table D-7, the totals reflected are broken down by patient classifications (WIA or DNBI).

Table D-8. Example for obtaining operations area average daily admissions

Daily patient classification	*Period of estimate*	*Evacuation policy (days)*	*Average daily strength (1,000s)*	*X*	*Admission rate*	=	*Total*
WIA							
Division and nondivision combat troops	1	7	56	X	1.54	=	86.24
Nondivision support troops	1	7	20	X	0.28	=	5.60
					TOTAL		91.84
DNBI							
Division and nondivision combat troops	1	7	56	X	2.41	=	134.96
Nondivision support troops	1	7	20	X	1.87	=	37.40
					TOTAL		172.36

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

- The period of estimate numbers "1" (7 days) in Table D-7 corresponds to the current period in Table D-6 on page D-13 (7 days). Whatever period of estimate the medical planner is computing becomes the current period and the subsequent period is "2" from Table D-6. Locate the appropriate accumulation factor column (WIA or DNBI) in Table D-2, on page D-3, by noting the evacuation policy for that current period of estimate. Various combination sets of evacuation policies are identified. For subsequent combination periods, the medical planner will try to locate the appropriate evacuation policy combination which applies to the particular problem. Table D-9 illustrates the process used to obtain accumulation factors for period 1.

Table D-9. Example for finding accumulation factors

Patient classification	*Period of estimate (30 days)*	*Evacuation policy (days)*	*Accumulation factors*
WIA	1	7	3.1063
	2	7	0
DNBI	1	7	2.7768
	2	7	0

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

- Using the same solution shown in Table D-7 (or appropriate actual figures), obtain the number of current period admissions (WIA or DNBI) that are still remaining in the operation area hospitals at the end of the current period by multiplying the first accumulation factor by the total average daily admissions in the current period. Table D-10, on page D-16, illustrates the process used to obtain the number of operation area patients remaining at the end of period 1.

Table D-10. Example for obtaining total operation area patients remaining (period 1)

Patient classification	*Period estimate (30 days)*	*First period accumulation factor*	*X*	*Total average daily admission*	*=*	*Operation area patients remaining at end of period 1*
WIA	1	3.1063	X	91.84	=	285.28
DNBI	1	2.7768	X	172.36	=	478.61

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

- Obtain the number of current period admissions (WIA or DNBI) that are still remaining in the operation area hospitals at the end to the next period by multiplying the second accumulation factor by the total average daily admission in the current period. Table D-11 illustrates the process used to obtain the number of operation area patients remaining at the end of other successive periods until all nonzero accumulation factors have been used.

Table D-11. Example for obtaining total operation area patients remaining (period 2)

Patient classification	*Period estimate (30 days)*	*Second period accumulation factor*	*X*	*Total average daily admission*	*=*	*Operation area patients remaining at end of period 2*
WIA	1	0	X	91.84	=	0
DNBI	1	0	X	172.36	=	0

Note: This example is to show process only. Since this is a zero, computation is not necessary.

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

- Using the same solution shown in Table D-6, on page D-13, (or appropriate actual figures), add admissions remaining in the operation area hospitals at the end of successive periods of estimate with any previous admissions still remaining in these hospitals at the end of the same successive periods. Disease and nonbattle injury results, as they are obtained, should be added at this point with WIA results to obtain total patients remaining in the operation area hospitals. Table D-12 illustrates the process used to obtain the total patients remaining in the operation area for period 1.

Table D-12. Example for obtaining total operation area bed requirements (period 1)

Patient classification	*Period 1*
WIA	285.28
DNBI	+478.61
Total	763.89

Legend:
DNBI disease and nonbattle injury
WIA wounded in action

- Obtain the operation area bed requirements using total WIA and DNBI requirements at the end of each 30-day period of estimate as follows. Multiply the total patients remaining figures derived earlier by the operation area dispersion factor as shown in Table D-5 on page D-12. Table D-13 illustrates the process used to obtain total operation area bed requirements for period 1.

Table D-13. Example for obtaining total combat bed requirements (period 1)

Period 1	
Total patients remaining in operations area hospitals	763.89
Operation area dispersion factor	X 1.25
Operation area bed requirements at end of first 30-day period	955

ESTIMATION OF ENEMY PRISONER OF WAR BED REQUIREMENTS

D-20. Bed requirements for the total EPW patient load can be estimated grossly on the basis of 4 percent of the total EPW population at any given time multiplied by the appropriate dispersion factor. The dispersion factor would, however, be small since the EPW population is homogeneous and geographic considerations favor stability of location. The proportion of total bed requirements that are made available for specialized care will depend upon local conditions. Provision is made for specialized treatment beds on the basis of medical intelligence reports of morbidity among enemy troops, diseases endemic to the area of operations, and type of injuries and wounds resulting from the tactical situation (see Tables D-4a through D-4i [pages D-5 through D-10]). Table D-14 shows an example problem used in determining EPW beds based on 2100 EPWs captured during a 30-day period by a division in attack of a defensive position with complete surprise attained.

Table D-14. Estimate of enemy prisoner of war bed requirements

EPW captured per division in a 30 pay period	2100.00
Medical planning factor (0.04)	X 0.04
Beds required	84
Dispersion factor (lower)(1.05)	X 1.05
Total enemy prisoner of war bed requirements	88

STATISTICS

D-21. Table D-15 indicates estimated hospital admission rates for several geographical areas based on World War II, the Korean and Vietnam Conflicts, and subsequent study of the world health situation. These rates should be used only as a basis for planning gross theater HSS. Each rate represents a first-year experience typical of the area involved. When data is aggregated for greater or lesser periods, the same experience source produces significantly different rates. The medical planner must modify these rates, using the latest pertinent medical intelligence data, and consider their historical basis before he applies them in developing HSS workloads and bed requirements for a specific plan or type of combat action.

Table D-15. Rate of admission to hospitals per 1,000 strength per day

Area	*Disease and nonbattle injuries*	*Wounded in action*
North America	1.36	0.55
Europe	1.62	0.55
Northeast Asia	2.07	0.37
Southeast Asia	0.60	0.20
Africa	2.87	0.37
Middle East	1.96	0.37
South America	1.72	0.37

CHANGES IN EVACUATION POLICY

D-22. Changes in the evacuation policy affect hospital bed requirements. The number of days specified for a level of hospitalization includes the number of days the patient spends in hospitals at lower levels. See Table D-16 for the effect of reducing this policy.

Table D-16 Effects of a Reduction in Theater Evacuation Policy on Bed Requirements

30 day evacuation policy	–	*15 day evacuation policy*	=	*Difference*	*X*	*Admission rate***	*X*	*Average theater strength (1000)*	=	*Patients*
10.85*	–	7.48*	=	3.37	X	2.07	X	500	=	3,488
15.06*	–	9.52*	=	5.54	X	0.37	X	500	=	+1,025
								Total patients	=	4,513
								20% Dispersion allowance		X 1.25
								Total additional beds required	=	5,642

Legend:

* Accumulation factors from Table D-2, on page D-3, figures have been rounded up.

** Admission rates from Table D-15, Northeast Asia.

Appendix E

Army Health System Capabilities

This appendix provides an example of AHS unit capabilities for mission analysis and planning preparation of an AHS appendix to an OPORD or OPLAN (Table E-1). It should not be considered all-inclusive and should be supplemented with information and procedures for specific commands, available assets, and geographic or mission considerations.

Table E-1. Example of Army Health System capabilities

Organization	Capabilities
HHD Hospital Center	Command and control of organic and attached Role 3 elements to include Army Health System support planning, policies, and support operations within the hospital's AO. Can provide mission command of Role 3 capabilities located in two separate locations with a combined bed capacity up to 240 beds.
Field Hospital (32 bed)	1. Operating up to 72 hours with its initial basic load of supply. 2. Hospitalization for up to 32 patients consisting of one (1) ward providing intensive nursing care for up to twelve (12) patients and one (1) ward providing intermediate nursing care for up to twenty (20) patients. 3. Surgical capability, including general, orthopedic, and obstetrics-gynecological based on two operating room tables capable of providing 36 operating room hours per day. 4. Provides a medical materiel set radiology, computerized tomography which enables the hospital to perform computerized tomography examinations.
Hospital Augmentation Detachment (Surg 24 Bed)	1. Augmentation of surgical capability for thoracic, orthopedic, and oral maxillofacial surgery based on two (2) operating room tables for a total of thirty-six (36) operating table hours per day. 2. Augmentation of hospitalization with up to 24 patients consisting of two (2) wards providing intensive care nursing.
Hospital Augmentation Detachment Medical (32 Bed)	1. Augmentation to the Field Hospital with hospitalization for up to 32 patients consisting of one (1) ward providing intensive care nursing for up to 12 patients, requiring the most intensive monitoring/care, and one (1) ward providing intermediate care nursing for up to twenty (20) patients 2. Emergency dental care and essential dental care designed to prevent potential dental emergencies 3. Augmentation to the Specialty Clinic of the Field Hospital with added psych, community health nursing, and PT capabilities
Hospital Augmentation Detachment (ICW 60 Bed)	Hospitalization for up to 60 patients consisting of three (3) wards providing intermediate nursing care. (3) ICWs (each ICW consists of 20 beds).
Medical Detachment, Minimal Care	1. Augmentation of the hospital to which attached to provide hospitalization and minimal nursing for up to 120 patients. 2. The minimum care detachment provides nursing, physical therapy, and occupational therapy services.
Hospital Augmentation Team, Head & Neck	1. Provides initial and secondary ear, nose and throat surgery. 2. Provides initial and secondary neurosurgery. 3. Provides initial and secondary eye surgery.
Medical Team, Optometry	1. Medical Team, Optometry consisting of six personnel that can be divided into two teams (Optometry Teams A and B). 2. Provide optometry support limited to eye examination, spectacle fabrication, frame assembly, and repairservices to brigade and non-brigade units in the area of operations as far forward as possible 3. Initial diagnosis and management of eye injuries. 4. Examinations to detect, prevent, diagnose, treat, and manage ocular related disorders, injuries, diseases, and visual dysfunctions.

Legend:

AO - area of operation
ICW - intensive care ward
HHD- headquarters, headquarters detachment
PT - physical therapy
Surg - surgical

Table E-1. Example of Army Health System capabilities (continued)

Organization	Capabilities
Dental Company (Area Support)	1. Far Forward operational dental care to small and forward deployed troop concentrations. This section is composed of 3 Forward Support Treatment Sections. Each section is composed of 6 Treatment Teams for a total of 18 forward treatment teams for area support. 2. Operational dental care, consisting of emergency dental care and essential dental care. 3. Reinforcement and reconstitution of the BCT and Armored Cavalry Regiment dental assets.
Medical Detachment, Combat & Operational Stress Control	1. When provided logistical and administrative support by a hospital, holding/restoration capability of 50 soldiers for up to 3 days . 1. Neuropsychiatric care, triage and stabilization. 2. The COSC Medical Detachment has the capability to deploy a Forward Support Section supporting a division as required. The supported unit provides command and control for the forward support section. Both support sections have the capability to break down into six 3-man teams.
Medical Detachment,Preventive Medicine	1. Direct pest management. 2. Direct medical entomology consultation. 3. Collection of water and ice samples for CBRN surveillance. 4. Food service sanitation inspections of field feeding sites. 5. Monitoring of water and field ice production and distribution. 6. Collection of water, soil, and air samples from sources that may pose environmental, occupational, or industrial hazards to troops for definitive analysis. 7. Training and certification for field sanitation team and food service personnel.
Area Medical Laboratory	1. Analytical, investigative and consultative capabilities to identify CBRN threat agents in biomedical specimens and other samples from the AO. 2. Data and data analysis to support medical analysis and operational decisions. 3. Medical laboratory analysis to support the diagnosis of zoonotic and significant animal diseases that impact on military operations.
Medical Detachment, Veterinary Service Support	1. Role 1 and 2 veterinary medical and resuscitative surgical care. 2. Level III comprehensive canine veterinary medical/surgical care. 3. Food safety, quality, and sanitation inspections. 4. Levels I and II food microbiological and chemical laboratory diagnostics. 5. Endemic zoonotic and foreign animal disease epidemiology surveillance and control.
Medical Logistics Company	1. Class VIII support (based on Class VIII consumption rate of 1.20 lbs per person per day). 2. Processing (receive, classify, and issue) of up to 13 short tons of Class VIII supplies. 3. 220 field level medical maintenance and repair man-hours per day. 4. Storage for up to 51 short tons of Class VIII supply. 5. Capability to deploy one Early Entry team, three medical maintenance contact repair teams, and three forward distribution teams.
Medical Detachment, Blood Support	1. 72-hours, limited self-sustainment during initial operations. 2. Receives and stores up to 5,100 refrigerated and/or frozen blood products from CONUS or MTFs. 3. Establishes the theater blood distribution plan within the JOA, including storage levels and locations, and the schedule of re-supply. 4. Collects, processes and tests whole blood and apheresis platelet from the available donor pool when needed.

Legend:

AO - area of operation
BCT - brigade combat team
CBRN - chemical, biological, radiological, and nuclear
CONUS - continental United States
COSC - Combat & Operational Stress Control
JOA - joint operations area
MTF - medical treatment facility

Table E-1. Example of Army Health System capabilities (continued)

Organization	Capabilities
Medical Logistics Management Center	1. Reviews and analyzes demands, and computes Theater Army requirements for Class VIII supplies, medical equipment, medical equipment maintenance, and optical fabrication 2. Monitors the operation and mission command of Medical Logistics units in all areas of operation.
Medical Team, Forward Resuscitative & Surgical (ABN)	1. Emergency treatment to receive, triage, stabilize and prepare 30 incoming casualties for surgery over a 72 hr period. 2. Post-op care manages 8 patients > 6 hours post surgery. 3. Two resuscitative and surgical elements, capable of supporting split based operations, each consisting of administration/supply, surgical and resuscitative sections (10 personnel). In this configuration the FRST provides emergency treatment to receive, triage, and prepare 12 incoming casualties for surgery over a 72 hour period; provides the required surgery and continued postoperative care for critically wounded/injured patients with organic MES. Postoperative care can manage 4 patients over 6 hours post surgery. 4. Two surgical elements, capable of supporting very short duration (24 hours) operations, consisting of only a surgical element(6 personnel). In its smallest configuration, the single surgical element provides emergency treatment to receive, triage, and prepare 4 incoming casualtiesfor surgery; provides the required surgery and limited continued post-operative care for those critically wounded/injured patients over a period of 24 hours with its organic MES. 5. Surgical augmentation of Role 3 MTFs surgical capability.
Medical Team, Forward Resuscitative & Surgical	
Medical Company, Ground Ambulance	1. A single-lift evacuation of 96 litter patients or 192 ambulatory patients. 2. Reinforcement of Brigade medical company evacuation assets. 3. Vehicle refueling support for the HHD, Multifunctional Medical Battalion when collocated. 4. Reinforcement of Brigade medical company evacuation assets.
Medical Company (Area Support)	1. Patient holding for up to 40 patients per ASMC. 2. Emergency dental care, pharmacy, and mental health support 3. Evacuation of patients from units within the ASMC's AO to the treatment squads of the ASMC 4. Treatment of patients with disease and minor injuries, triage of mass casualties, initial resuscitation/stabilization, advanced trauma life support, and preparation for further evacuation of ill, injured, and wounded patients who are incapable of returning to duty within 72 hours
HHD, Medical Battalion (Multifunctional)	1. Provides command amd control, staff planning, supervision of operations, medical and general logistics support as required, and administration of the assignedand attached units. 2. Task organization of medical assets.
HHC, Medical Brigade	1. Provides command amd control of theater medical units providing Army Health System support for BCTs, Division/Corps, Joint and Multinational Forces. 2. Coordination with the MEDCOM (DS) Theater Patient Movement Center or supporting Theater Patient Movement Requirements Center for medical regulating and medical evacuation from MMBs and hospitals to supporting Theater Army Units (MTFs) and CONUS.
HHC, MEDCOM (Deployment Support)	1. Command amd control of theater medical units. 2. Coordination and integration of strategic capabilities from the sustaining base to units in the Theater AO.
Medical Company, Brigade Support Battalion	1. Treatment of patients with DNBI, COSR, triage of MASCAL, ATM, initial resuscitation and stabilization, and preparation for further evacuation of patients incapable of returning to duty. 2. Ground evacuation for patients from the BAS and designated CCPs to the BSMC. 3. Medical laboratory and radiology services commensurate with Role 2 MTFs. 4. Patient holding for up to 20 patients able to return to duty within 72 hours.

Legend:

ABN - airborne
AO - area of operation
ASMC - medical company (area support)
ATM - advanced trauma management
BAS - battalion aid station
BCT - brigade combat team
BSMC - brigade support medical company
CCP - casualty collection point
CONUS - continental United States
COSR - combat and operational stress reaction
DNBI - disease and non-battle injury
FRST - forward resuscitative surgical team
HHC - headquarters, headquarters company
HHD- headquarters, headquarters detachment
MASCAL - mass casualty
MEDCOM - medical command
MES - medical equipment set
MMB - medical battalion (multifunctional)
MTF - medical treatment facility

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Appendix F

Army Health System Allocation

This appendix provides the basis and rules of allocation, organized by unit type and operation. This information is intended to provide a quick reference for mission analysis and planning preparation. The information may be utilized as a foundation from which capabilities may be expanded upon based on mission parameters, intelligence, and geographic considerations (Table F-1).

Table F-1. Army Health System organization basis and rules of allocation—major combat operations

Organization	Section I TOE Basis of Allocation	ROA MCO (Phase I-III)
HHD Hospital Center	One per maximum two field hospitals (32 bed)	One per two field hospital (32 bed)
Field Hospital (32 bed)	Based on occupied hospital beds of different patient categories	
Hospital Augmentation Detachment Surgical (24 Bed)		
Hospital Augmentation Detachment Medical (32 Bed)		
Hospital Augmentation Detachment (ICW 60 Bed)		
Medical Detachment, Minimal Care		
Hospital Augmentation Team, Head & Neck	One per 650 WIA/DNBI occupied beds.	1 per 650 WIA/DNBI occupied beds.
Medical Team, Optometry	1 per 30,000 population supported in the BCT/division/corps area. 1 per 72,000 population supported in the theater/port area.	1 per 30,000 population supported in the BCT/division/corps area. 1 per 72,000 population supported in the theater/port area.
Dental Company (Area Support)	1 per 43,000 Army population supported in the Theater. (based upon the ratio of one dentist in support of 1,175	1 per 43,000 Army population support in the BCT/division/corps/theater/port
Medical Detachment, Combat & Operational Stress Control	1 per 48,000 Army population supported in the BCT/division/corps/theater/port area.	1 per 48,000 Army population supported in the BCT/division/corps/theater/port area.
Medical Detachment, Preventice Medicine	1 per 17,000 population supported in the BCT/division/corps/theater/port area.	1 per 17,000 population supported in the BCT/division/corps/theater/port
Area Medical Laboratory	1 per theater.	.333 per division HQ
Medical Detachment, Veterinary Services	For contingency and major combat operations, one MDVSS per 60,000 personnel supported in all US Forces, DOD components & other units / organizations as directed; OR one per 300 military & DOD contracted working dogs in support of all US Forces, DOD components & other units / organizations as directed. OR 1 per senior Army HQs for stability operations, one MDVSS per 3 brigades. (12,000 personnel) for humanitarian assistance missions and DSCA, one MDVSS per 3 brigades (12,000 personnel).	1 per 60,000 personnel supported in all U.S. forces, DOD components & other units / organizations as directed. 1 per 300 MWD & DOD contracted working dogs in support of all U. S. forces, DOD components & other units / organizations as directed.
Medical Logistics Company	1 per 13 short tons of class VIII issued & received per day. 1 per theater opening offset by workload.	(WL) 1 per 13 short tons of Class VIII per day. (E) 1 per theater opening offset by WL.
Medical Detachment, Blood Support	0.035 per Field Hospital; 0.035 per Hospital Aug Det (Surgical 24 Bed); 0.039 per FRST; and 0.007 per ASMC/BSMC (First MDBS arrives with the arrival of the first Field Hospital, or FRST or ASMC/BSMC).	0.035 per Field Hospital. 0.035 per Hospital Aug Det (Surgical 24 Bed). 0.039 per FRST. 0.007 per ASMC/BSMC.

Legend:

Aug - augmentation
ASMC - medical company, area support
BCT - brigade combat team
BSMC - medical company, brigade support
DET -detachment
DNBI - disease and non-battle injury
DOD - Department of Defense
DSCA - defense support of civil authorities
FRST - forward resuscitative surgical team
HHD - headquarters, headquarters detachment
HQ - headquarters
ICW - intensive care ward
MCO - major combat operation
MDBS - medical det, blood support
MWD - military working dog
MDVSS - Veterinary Service Support Detachment
ROA - rules of allocation
TOE - table of organization and equipment
U.S. - United States
WIA - wounded in action
WL - work load

Table F-1. Army Health System organization basis and rules of allocation—major combat operations (continued)

Organization	Section I TOE Basis of Allocation	ROA MCO (Phase I-III)
Medical Logistics Management Center	One unit required in the force. Unit contains a non-deploying base unit, two Forward Teams (Early Entry), and two Forward Teams (Follow On). Each team deploys and supports a Theater Army.	0.25 per senior Army HQ or TSC. Offset by SOF ROA if SOF support arrives first. Total of one per U.S. Army.
Medical Team, Forward Resuscitative & Surgical (ABN)	One per IBCT (Airborne), one per Special Forces Group (Airborne), maximum of 3, one per 2 Airborne BCTs in lesser contingency, and one per IBCT Airborne in forced entry package.	
Medical Team, Forward Resuscitative & Surgical	One per ABCT, one per IBCT (not including IBCT Airborne), and one per BCT assigned to a theater conducting stability and reconstruction operations.	1 per ABCT. 1 per SBCT. 1 per IBCT (Airborne, non-Airborne). 1 per IBCT Airborne in forced entry.
Medical Company, Ground Ambulance	0.33 per BCT, 0.5 per division headquarters and 2 per ASCC.	.33 per BCT. .5 per division HQs. 2 per senior Army HQs.
Medical Company (Area Support)	1 per 10,000 non-BCT troops supported in the BDE/division HQs/Corps HQs and ASCC area	1 per 10,000 Non-BCT troops supported in the BCT/division/corps/theater Area.
HHD, Medical Battalion (Multifunctional)	1 per 2-6 company size units plus blood support detachment // Average of 5, first at 2 and1 per 4-13 detachment size units / average of 10, first at 4.	1 per 2-6 company size units plus blood support detachment / average of 5, first at 2. 1 per 4-13 detachment size unit / average of 10, first at 4.
HHC, Medical Brigade	One per two to six subordinate battalions or like units such as the hospital center. Minimum first medical brigade comes in at two subordinate battalions.	1 per 2-6 subordinate battalions or battalion equivalents average of 5, first at 2.
HHC, MEDCOM (Deployment Support)	1 per theater.	N/A

Legend:

ABCT - armor brigade combat team
ABN - airborne
ASCC - Army Service component command
BCT - brigade combat team
BDE - brigade
BSMC - medical company, brigade support
DET - detachment
DNBI - disease and non-battle injury
DOD - Department of Defense
FRST - forward resuscitative surgical team
HHC - headquarters, headquarters company
HHD - headquarters, headquarters detachment
HQ - headquarters
IBCT - infantry brigade combat team
MCO - major combat operation
MEDCOM - medical command
N/A - not applicable
ROA - rules of allocation
SBCT - stryker brigade combat team
SOF - special operations forces
TOE - table of organization and equipment
TSC - theater sustainment command
U.S. - United States
WIA - wounded in action
WL - work load

Table F-2. Army Health System organization basis and rules of allocation special operations forces and stability

Organization	ROA SOF Phase I-IV	ROA Stability Operations (Phase IV)
HHD Hospital Center		One per two field hospital (32 bed)
Field Hospital (32 bed)		
Hospital Augmentation Detachment Surgical (24 Bed)		
Hospital Augmentation Detachment Medical (32 Bed)		
Hospital Augmentation Detachment (ICW 60 Bed)		
Medical Detachment, Minimal Care		
Hospital Augmentation Team, Head & Neck		One per 650 WIA/DNBI occupied beds add for directed support to host natior population at risk@ 1 team per 67,000 Supported population.
Medical Team, Optometry		1 per 72,000 supported population in the BCT/division/corps/theater/port area.
Dental Company (Area Support)		1 per 43,000 population supported in the 1 per 43,000 supported population (HN)
Medical Detachment, Combat & Operational Stress Control		1 per 48,000 supported population (HN)
Medical Detachment, Preventive Medicine	1 per CJSOTF (Offset by workload).	1 per 17,000 population supported in the BCT/division/corps/theater/port area. 1 per 17,000 supported population (HN).
Area Medical Laboratory		.333 per division HQ.
Medical Detachment, Veterinary Services	1 per CJSOTF (Offset by workload).	Same as Phase I-III.
Medical Logistics Company	(E) 1 per CJSOTF (offset by workload).	(WL) 1 per 13 short tons of Class VIII per day. 1 per 77,000 supported population (HN)
Medical Detachment, Blood Support	0.039 per FRST and 0.007 per ASMC/BSMC.	Same as Phase I-III.
Medical Logistics Management Center	0.25 per CJSOTF –See MCO rule. Offset by GPF ROA if GPF support arrives first.	0.25 per Senior Army HQs. Total of One per U.S. Army.
Medical Team, Forward Resuscitative & Surgical (ABN)		
Medical Team, Forward Resuscitative & Surgical	1 per CJSOF. .33 per SF bn or Ranger bn.	1 per ABCT. 1 per SBCT. 1 per IBCT (not including IBCT Airborne).

Legend:

ABCT - armor brigade combat team
ABN - airborne
ASCC - Army Service component command
ASMC - medical company, area support
BCT - brigade combat team
BN - battalion
BSMC - medical company, brigade support
CJSOTF - combined joint special operations task force
DET - detachment
DNBI - disease and non-battle injury
FRST - forward resuscitative surgical team
HHD -- headquarters, headquarters detachment
HN - host nation
HQ - headquarters
IBCT - infantry brigade combat team
ICW - intensive care ward
MCO - major combat operation
ROA - rules of allocation
SBCT - stryker brigade combat team
SF - special forces
SOF - special operations forces
WIA - wounded in action
WL - work load

Table F-2. Army Health System organization basis and rules of allocation SOF and stability (continued)

Organization	ROA SOF Phase I-IV	ROA Stability Operations (Phase IV)
Medical Company, Ground Ambulance		.33 per BCT. .5 per division HQs. 2 per senior Army HQs. 1 per 240,000 supported population (HN).
Medical Company (Area Support)		1 per 10,000 non-BCT troops supported in the 1 ASMC per 33,000 supported population.
HHD, Medical Battalion (Multifunctional)	Same as MCO Rule.	Same as MCO rule.
HHC, Medical Brigade		1 per 2-6 subordinate battalions or bn equivalents average of 5, first at 2.
HHC, MEDCOM (Deployment Support)		N/A

Legend:

ASMC - medical company, area support	HHD - headquarters, headquarters detachment	MEDCOM - medical command
BCT - brigade combat team	HN - host nation	N/A - not applicable
BN - battalion	HQ - headquarters	ROA - rules of allocation
HHC - headquarters, headquarters company	MCO - major combat operation	SOF - special operations forces

Appendix G

Evacuation Capabilities Location

This appendix provides medical and casualty evacuation capabilities to assist planners in determining capacity based on the number and type of vehicles available.

Table G-1. Army medical evacuation capabilities

MEDICAL EVACUATION VEHICLE	EVACUATION CAPACITY		
Vehicle	**Litter**	**AMB**	**Combination**
HMMWV M997 Series	4	6	2 Litter/ 3 AMB
M113A3 Tracked Ambulance	4	6-8	2 Litter/ 3-4 AMB
M1133 Stryker MEV	4	6	2 Litter/ 2-4 AMB
M1266A1 LWB MRAP Ambulance	2	4	1 Litter/ 2 AMB
AMPV Medical Evacuation	4	6	2 Litter/ 3 AMB
UH-60	6	7	Varies
UH-72	2	3	Varies
Legend:			
AMB - ambulatory		MEV - medical evacuation vehicle	
AMPV - Armored Multi-Purpose Vehicle		MRAP - Mine-Resistant Ambush Protected	
HMMWV - High Mobility Multipurpose Wheeled Vehicle		UH - utility helicopter	
LWB -- long wheel base			

Table G-2. Army casualty evacuation capabilities

CASUALTY EVACUATION VEHICLE	EVACUATION CAPACITY		
Vehicle	**Litter**	**AMB**	**Combination**
HMMWV M998 Series	3	5	Varies with configuration
M1081 LMTV	7	12	
M1093 MTV	8	14	
M977A4 HEMTT	9		
M871 22 1/2 Ton Cargo Trailer	16		
CH-47 (Mutiple evacuation configurations with litter support kit installed)	0	31	
	4	25	
	8	19	
	12	16	
	16	10	
	20	4	
	24	1	
C-12 Huron	0	8	
	2	4	

Legend:

AMB - ambulatory
CH - cargo helicopter
HEMTT - heavy expanded, mobility tactical truck
HMMWV - High Mobility Multipurpose Wheeled Vehicle
LMTV - light medium tactical vehicle
MTV - medium tactical vehicle

Appendix H

Medical Situation Report

This appendix provides a format for a medical situation report. This report is used by medical staff to convey a quick, consolidated medical status report as a snapshot instead of a full report.

Table H-1. Medical situation report

Line 1	DATE AND TIME	(DTG)
Line 2	UNIT	Unit making report
Line 3	LOCATION	(UTM or six digit grid coordinate with MGRS grid zone designator)
Line 4	STATUS	(number of operational cots, unoccupied cots, or number of cots uploaded)
Line 5	PATIENTS	(number of patients)
Line 6	PROJECTED LOCATIONS	(anticipated operations in the next 24 hours; anticipated opening and closing times at new locations)
Line 7	MEDICAL LOGISTICS	(number of days of CL VIII & blood OH)
Line 8	EVACUATION ASSETS	(availability and operational capacity of medical evacuation assets)
Line 9	NARRATIVE	(free text for additional information required for report clarification)
Line 10	AUTHENTICATION	(report authentication)
Legend:		
	CL	class
	OH	on hand
	DTG	date time group
	MGRS	military grid reference system
	UTM	universal transverse Mercator

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Appendix I

Medical Status Report

This appendix provides a format for the medical status report. This report is used to provide the status on hospitalization, incidence or occurrence of disease, and unresolved problems or items of significant interest having impact upon the overall medical capability or health of the command.

Table I-1. Medical status report

LINE 1 – DATE AND TIME	(DTG)
LINE 2 – UNIT	(unit making report)
LINE 3 – TYPE	(type of medical status report: ASHORE REPORT or AFLOAT REPORT)
LINE 4 – COMMAND	(name of designator of reporting command or facility if ashore; ship name, type, and hull number)
LINE 5 – POC	(name of medical point of contact)
LINE 6 – AVAILABLE	(number of cots or hospital beds available)
LINE 7 – OCCUPIED	(number of cots or hospital beds occupied)
LINE 8 – OVERFLOW	(number of cots or holding beds occupied)
LINE 9 – FULL	(number of cots or holding beds occupied)
LINE 10 – WAITING	(number of patients awaiting evacuation out from command's area of responsibility since last report)
LINE 11 – MEDLOG	(number of days of class VIII OH)
LINE 12 – PROBLEMS	(unresolved problems and anticipated problems or issues affecting reporting command)
LINE 13 – ASSESSMENT	(commanding officer's assessment of operational capabilities and ability to continue medical support)
**Report lines 3 through 13 as a group when reporting the medical status of more than one command, facility, or ship.	
LINE 14 – NARRATIVE	(free text for additional information required for report clarification)
LINE 15 – AUTHENTICATION	(report authentication)
Legend:	
DTG	date time group
OH	on hand
MEDLOG	medical logistics

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Appendix J

Joint Medical Capabilities

United States military operations are joint in nature. Army medical planners often become involved in planning efforts for operations which include the organizations and medical capabilities from other Services. This appendix provides basic information of medical capabilities and capacities of other Services. The purpose is to provide information to assist medical planners to efficiently plan for the use of medical capabilities when other Service assets are available for support.

ROLES OF CARE COMPARISON

J-1. In order to plan efficient and synchronized medical support in a joint environment, Army medical planners should understand the organizations other Services use to provide medical care. Table J-1 provides a comparison of roles of care using Army capabilities as the point of reference. Understanding the equivalent of Army capabilities will enable medical staffand commanders to more effectively utilize available forces in support of an operation as well as identify capability strengths and gaps.

Table J-1. United States military roles of care

Role/Capability	Health Care	Army	Navy	Marines	Air Force
1 First Responder	Medical care rendered at the point of initial injury or illness to self or others.	• Self-Aid/Buddy Aid • Combat Lifesaver • Combat Medic • Battalion Aid Station	• Self-Aid/Buddy Aid • Navy Corpsman • Surface Combatant Ship • Submarine • Dock Landing Ship	• Self-Aid/Buddy Aid • Navy Corpsman • Battalion Aid Station • Marine Wing Support Squadron	• Self-Aid/Buddy Aid • Medical Technician • Air Transportable Clinic
2 Forward Resuscitative Care	Forward advanced emergency medical treatment performed close to the point of injury/illness	• MCAS • BSMC • Forward Surgical/Forward Resuscitative Surgical Team[1]	• Fleet Surgical Team • Amphibious Transport Dock (San Antonio) • Aircraft Carrier • Amphibious Assault Ship (General Purpose) • Amphibious Assault Ship (Multipurpose) (Casualty Receiving and Treatment Ship)	• Shock Trauma Platoon[2] • Forward Resuscitative Surgery System • Medical Battalion Surgical Company	• GST[1] • EMEDS HRT • EMEDS +10
3 Hospitalization	Modular hospitals with medical and surgical capabilities	• Combat Support Hospital • Hospital Center	• Hospital Ship • Expeditionary Medical Facility		• EMEDS +25 • AFTH
4 Definitive Care	Full range of acute, convalescent, restorative, and rehabilitative care	• OCONUS Medical Treatment Facility • CONUS Medical Treatment Facility • Veterans Administration Hospital • Civilian Hospital			
Enroute Care	The care required to maintain the phased treatment initiated prior to evacuation and the sustainment of the patient's medical condition during evacuation.	• Ambulance Squads[3] • Evacuation Platoon-BSMC • Ambulance Platoon-MCAS • Medical Company, Ground Ambulance • Medical Company, Air Ambulance	• Navy En Route Care system	• Marine En Route Care System	Critical Care Air Transport Team

[1] Army Forward Surgical Team/Forward Surgical Resuscitative Team and USAF GST are a Role 3 capability used to expand care available at Role 2 by providing resuscitative surgical care.
[2] Marine Corps Shock Trauma Platoon are a Role 2 capability that can be used to expand care available at Role 1 by providing advanced resuscitative care.
[3] Ambulance squads are located in the maneuver battalion medical treatment platoon of the brigade combat teams

LEGEND
AFTH—Air Force theater hospital
BSMC—medical company, brigade support
CONUS—continental United States
EMEDS – expeditionary medical support
GST—ground surgical team
HRT—health response team
MCAS—medical company, area support
OCONUS—outside the continental United States

SERVICE MEDICAL SUPPORT TO UNITED STATES ARMY

J-2. The United States Army possesses flexible and robust medical capabilities however, situations will occur where Army medical planners may have to plan, coordinate, and synchronize health system support

with other Service medical capabilities. Basic medical information is outlined below but planners may also refer to the respective Service publications for greater detail.

UNITED STATES NAVY AND MARINE CORPS CAPABILITIES

J-3. The United States Army's ability to conduct large scale combat operations in environments such as the Indo-Pacific region (which encompasses roughly 52 percent of the Earth's surface area) will require United States Navy support. The following figures and tables provide information to assist Army medical planning efforts regarding United States Navy evacuation.

J-4. The Navy does not operate dedicated rotary wing aeromedical evacuation ambulances. When available however, the Navy helicopter sea combat squadrons can utilize search and rescue medical technicians to provide enhanced care during evacuation. Navy and Marine Casualty Evacuation capabilities are provided in Table J-2. For more information on United States Navy and Marine Corps patient movement, see Navy Tactics, Techniques, and Procedures (NTTP) 4-02.2M/MCRP 4-11.1G.

Table J-2. United States Navy and Marine Corps casualty evacuation capabilities

UNITED STATES NAVY/ MARINE CORPS CASUALTY EVACUATION CAPABILITY		
AIRCRAFT		
Vehicle	**Litter**	**AMB**
UH-1Y Huey	6	10
CH-46 Sea Knight	15	22
CH-53 Sea Stallion	24	37
V-22 Osprey	12	24
GROUND		
MRAP CAT II ISS	2	4
LAV 25	0	4
LAV-L	4	7
MK 23 (7-Ton Truck)	10	20
Note: Vehicles used by Army and other Services are included in Army casualty evacuation capabilities.		
LEGEND		
AMB - ambulatory	LAV - light armored vehicle	
CAT - categpry	LAV-L - light armored vehicle - logistics	
CH - cargo helicopter	MRAP - Mine-Resistant Ambush Protected	
ISS - independent suspension system	UH - utility helicopter	

J-5. Army forces operating in the Pacific may not be able to establish Role 2 or Role 3 MTFs until initial lodgments are secured or expanded. As a result, United States Navy ships may provide the initial Role 2, Role 3, or surgical capability afloat. Table J-3, on pages J-3 through J-5, provides medical treatment capability and capacity organized by ship. For additional information on United States Navy and United States Marine Corps medical capabilities, see NTTP 4-02.2M/MCRP 4-11.1G.

Table J-3. United States Navy ship capabilities and staffing

Aircraft Carrier Capabilities and Staffing		
CV/CVN Capability	Nimitz Class Staffing	Ford Class Staffing
Operating Rooms	1	1
Intensive Care Unit Beds	3	3
Ward Beds	48	32
Ancillary Capabilities	Laboratory, x-ray, pharmacy, preventive medicine, biomedical repair, aviation physical examinations, radiation health, spectacle fabrication, psychology, and physical therapy.	
Medical Corps	6	6
Dental Corps	5	5
Nurse Corps	2	2
Medical Service Corps	5	5
Hospital Corpsmen	45	38

Amphibious Assault Ship Capabilities and Staffing			
LHD/LHA Capability	Ship/FST Staffing		Ship/FST/HSAP Staffing
Operating Rooms	1		4
Intensive Care Unit Beds	3		15
Ward Beds	12		45
Ancillary Capabilities	Laboratory, blood bank, x-ray, pharmacy, preventive medicine, biomedical repair, and aviation physical examination		
	SHIP	FST	HSAP
Medical Corps	2	3*	11
Dental Corps	1		1
Nurse Corps		3*	22
Medical Service Corps	1	1	1
Hospital Corpsmen	19	9	49
* Includes certified registered anesthesiologist or nurse anesthetist.			
LEGEND: CV - aircraft carrier CVN - aircraft carrier, nuclear FST - fleet surgical team HSAP - Health Services Augmentation Program LHA - amphibious landing ship (general purpose) LHD - amphibious landing ship (multipurpose)			

Table J-3. United States Navy ship capabilities and staffing (continued)

Amphibious Transport Dock (LPD) and Staffing		
LPD Capability	Austin Class	San Antonio Class
Operating Rooms	0	1
Ward Beds	17**	24**
Ancillary Capabilities	Laboratory and x-ray	Laboratory and x-ray
Medical Corps	1	1
Dental Corps	1	1
Hospital Corpsmen	9	15
** Capability requires augmented staffing.		
Landing Ship Dock (LSD) and Staffing		
LSD Capability		
Ward Beds (2 isolation beds)	8**	
Ancillary Capabilities	Laboratory and x-ray	
Medical Corps	1	
Dental Corps	1	
Hospital Corpsmen	5	
** Capability requires augmented staffing.		
Submarine Tender Capabilities and Staffing		
Operating Rooms	2	
Ward Beds	12	
Ancillary Capabilities	Laboratory, x-ray, and pharmacy	
Medical Corps	1	
Dental Corps	3	
Hospital Corpsmen	18	
LEGEND: LPD - amphibious transport dock LSD - dock landing ship		

J-6. In addition to the vessel capabilities listed above, Navy surface combatant ships (cruisers, destroyers, and frigates) have limited capabilities and staffing consisting of one basic laboratory, one independent duty corpsman, and one junior hospital corpsman.

ASHORE CAPABILITIES

J-7. The Marine Corps operating forces are organized into Marine Air Ground Task Force (MAGTF). There are three types of MAGTFs including Marine expeditionary unit, Marine expeditionary brigade, and Marine expeditionary force (MEF). For planning purposes, medical staff capabilities has been included in this section. A MAGTF is made up of four elements and medical capabilities vary accordingly. Regardless of the size of the MAGTF, the four elements include—

- Command element (CE).
- Ground combat element.
- Aviation combat element.
- Logistics combat element.

COMMAND ELEMENT

J-8. The CE within the MAGTF functions similarly to Army tactical or operational level staff (division or corps). The medical staff advises the commander on the utilization of medical assets and provides planning capability. In the MEF CE, its medical personnel include the MEF surgeon, MEF medical planner, MEF preventive medicine officer, Marine expeditionary brigade medical planner, operations chief, and administrative chief.

J-9. The medical staff of the Marine Logistics group (MLG) CE includes the group surgeon, group aid station, and health service support element. The group aid station provides internal support to the MLG. The health service support element acts as the primary medical planner for the MLG and coordinates Class VIII requirements (above organic capabilities) for the ground combat element (GCE) and aviation combat element.

COMBAT ELEMENT

J-10. The GCE (ground combat element) medical staff varies within the GCE based on size. A Marine division is the GCE for a MEF, a Marine regimental landing team is the GCE for a Marine expeditionary brigade, and a Marine Battalion landing team is the ground combat element for a Marine expeditionary unit.

J-11. At the Marine division, the CE medical staff includes the division surgeon, psychiatrist, medical administrative officer, environmental health officer, and enlisted staff. The Marine division surgeon functions the same as an Army surgeon in advising the commander on matters related to health within the Marine division, requirements, and allocation of medical capabilities and resources.

J-12. The regimental aid station provides medical support to the regimental headquarters company. Due to its small size (one medical officer and three hospital corpsman), it lacks the capacity of a BAS. The regimental surgeon advises the regimental commander and also serves as a planner and instructor.

J-13. Within the BAS, the medical staff of a battalion medical platoon or infantry battalion consists of two medical officers and 65 hospital corpsman. The aid station in an infantry battalion is capable of splitting in two sections to operate two separate BASs, similar to tactics, techniques, and procedures used in Army maneuver organizations using a forward and main aid stations.

AVIATION COMBAT ELEMENT

J-14. The aviation combat element of a MAGTF is comprised of fixed wing or rotary wing units. Marine wing support squadrons provide aid station capability for expeditionary airfield operations.

J-15. The Marine wing support group includes four marine wing support squadrons with organic medical personnel including two medical officers and 31 to 32 hospital corpsman capable of establishing a squadron aid station. The Marine wing support squadron aid station capabilities include sick call, aviation medicine, preventive medicine, radiology, and pharmacy services.

J-16. Each flying squadron in a MAGTF has a medical section consisting of a flight surgeon and hospital corpsman (the number varies based on squadron type). This section provides a pool of medical personnel for CASEVAC missions.

LOGISTICS COMBAT ELEMENT

J-17. The logistics combat element (LCE) provides sustainment for the MAGTF. The LCEs differ by type of MAGTF. The LCE for a MEF is a medical logistics group; the LCE for a Marine expeditionary brigade is a combat logistics regiment, and the LCE for a Marine expeditionary unit is a combat logistics battalion.

MEDICAL BATTALION

J-18. The medical battalion is a subordinate command within the LCE. The medical battalion is the only source of forward resuscitative care in the MEF and provides the following capabilities:

- Role 2 care including resuscitative surgery and temporary patient holding.
- Medical regulating.
- Preventive medicine support.

J-19. The medical battalion consists of a headquarters and service company and two to four surgical companies (depending on the battalion). The headquarters company section includes a surgical company with two surgical platoons and a combat stress platoon. In addition to C2 and medical regulating, the headquarters and service company provides collecting, clearing, and evacuation of casualties through the surgical platoons to all supported units.

J-20. The surgical company plans, coordinates, and supervises medical support for the battalion. The surgical company consists of a headquarters platoon and four surgical platoons. The surgical company can be divided into smaller sections to support displacement and relocation.

SHOCK TRAUMA PLATOON

J-21. The shock trauma platoon (STP) provides direct support to the MEF including the collecting, clearing, and evacuation of casualties. The STP capabilities include—

- Provide and coordinate medical evacuation.
- Provide clearing stations.
- Establish MTFs for resuscitative treatment and temporary holding.

J-22. The collecting and evacuation section has two tactical ambulances (M997). The stabilization section has two Medium Tactical Vehicle Replacements to move STP equipment and personnel. The STP stabilization section provides for a 10 flow through cot (litter) facility.

J-23. The STP is highly mobile and can reinforce a BAS, act as a beach evacuation station, or as an intermediate casualty collection point between medical elements.

DENTAL BATTALION

J-24. The dental battalion provides dental services to the MEF through scalable dental sections and detachments. The dental battalion consists of a headquarters and service company and three dental companies. See NTTP 4-02.2M/MCRP 4-11.1G for more information on ashore capabilities.

UNITED STATES AIR FORCE CAPABILITIES

J-25. This section discusses Air Force medical treatment and evacuation capabilities and is divided between those functions. As the lead Service for intertheater medical evacuation, the Air Force provides fixed wing aeromedical evacuation to definitive care and Role 4 hospitals. Medical regulating and intertheater aeromedical evacuation is discussed in greater detail in ATP 4-02.2.

J-26. Tables below depict Air Force fixed wing aircraft capacities. These are separated between the floor loading capacities which would be used as opportune lift for casualties in more hostile environments (Table J-4) and aeromedical evacuation configured aircraft (Table J-5, on page J-7).

Table J-4. USAF floor loading capacity

USAF Floor Loading Capacity

Aircraft	Litter
C-130	15/21 (J Model)
C-17	48*
KC-46A	24 (plus 30 ambulatory)
KC-135	8

*12 litter patients can be placed on the ramp for maximum utilization of the aircraft.

Legend:

USAF - United States Air Force

Table J-5. USAF aircraft capacity

USAF Aircraft Capacity						
C-130 H/J	AE Configuration	AE-1	AE-2	AE-3	AE-4	AE-5
	Litter Spaces	30	72/92 (J-30)	20	50/60 (J-30)	10
	Total Seats*	46/62 (J-30)	6/10 (J-30)	44/62 (J-30)	30/62 (J-30)	31/45 (J-30)
C-17	AE Configuration	AE-1	AE-2	AE-3	AEC-1	
	Litter Spaces	9	36	9	6	
	Total Seats	54	54	90	49	
KC-135	AE Configuration	AE-1	AE-2	AE-3		
	Litter Spaces	6	9	15		
	Total Seats	31	28	20		
C-12J	AE Configuration	AE-1				
	Litter Spaces	1				
	Total Seats	10				
C-21	Litter Spaces	1				
	Total Seats	5				

* Actual seats may decrease based on crew complement, mission requirements and patient load.

Legend:

AE - aeromedical evacuation
USAF - United States Air Force

J-27. For more information on aircraft capacities in support of aeromedical evacuation operations, see Air Force Manual (AFMAN) 11-2 AEV3ADDENDA-A.

J-28. The Air Force Air Expeditionary Wing is an organization that is composed of a command element and two or more expeditionary groups. Medical support elements are located in the expeditionary medical group The expeditionary medical group controls Expeditionary Medical Support (EMEDS), Air Force Theater Hospital (AFTH), air transportable clinics, and En Route Patient Staging System (ERPSS) facilities. Figure J-1 depicts the Air Expeditionary Wing organizational structure.

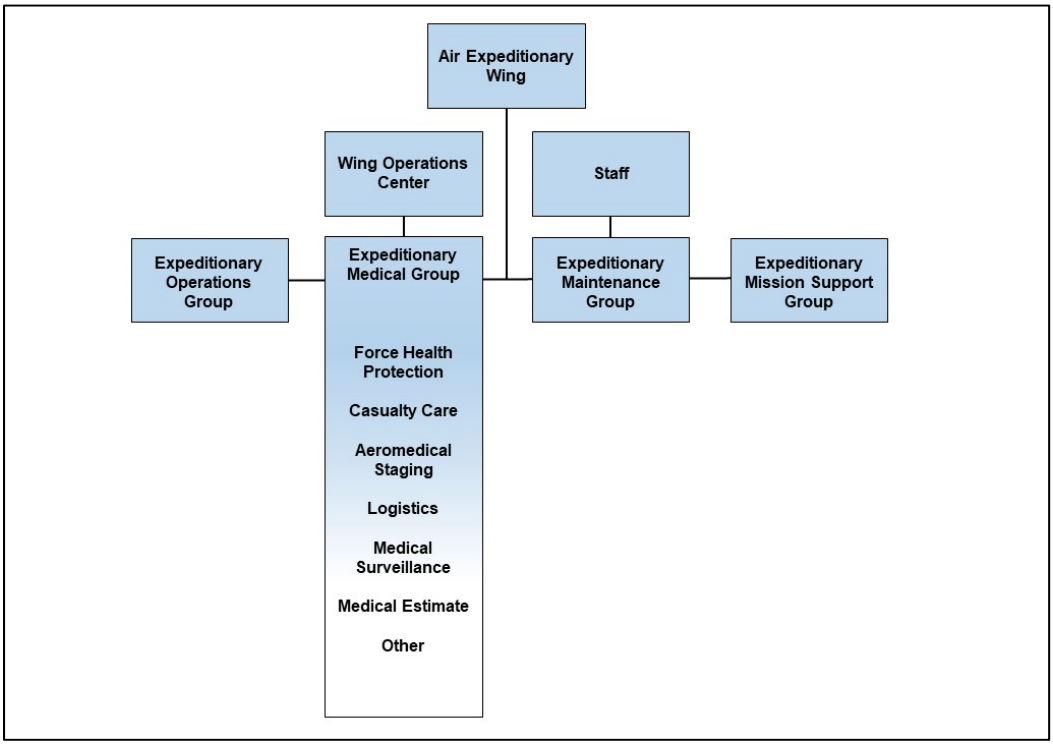


Figure J-1. Air expeditionary wing structure

J-29. The Air Force provides individual bed-down and theater-level medical services for deployed forces with the EMEDS and AFTH. The primary mission of the EMEDS and AFTH is to provide forward stabilization, primary and resuscitative care, force health protection, dental services, and preparation for further evacuation in all environments. The AFTH is located at strategic airlift hubs to stage casualties for evacuation to definitive care.

J-30. The scalable and modular nature of the EMEDS and AFTH design enables the Air Force to deploy small-scale teams that can be built upon for greater capacity and specialized care. The EMEDS incremental support packages consist of the EMEDS Health Response Team, EMEDS +10, and EMEDS +25. The AFTH is built by adding specialty and augmentation to an EMEDS +25.

J-31. The modular design capabilities of the EMEDS and AFTH is depicted in Figure J-2 on page J-10 and demonstrates what medical capabilities and capacities are associated with each support package. For more information on Air Force EMEDS and AFTH capabilities, see AFTTP 3-42.71.

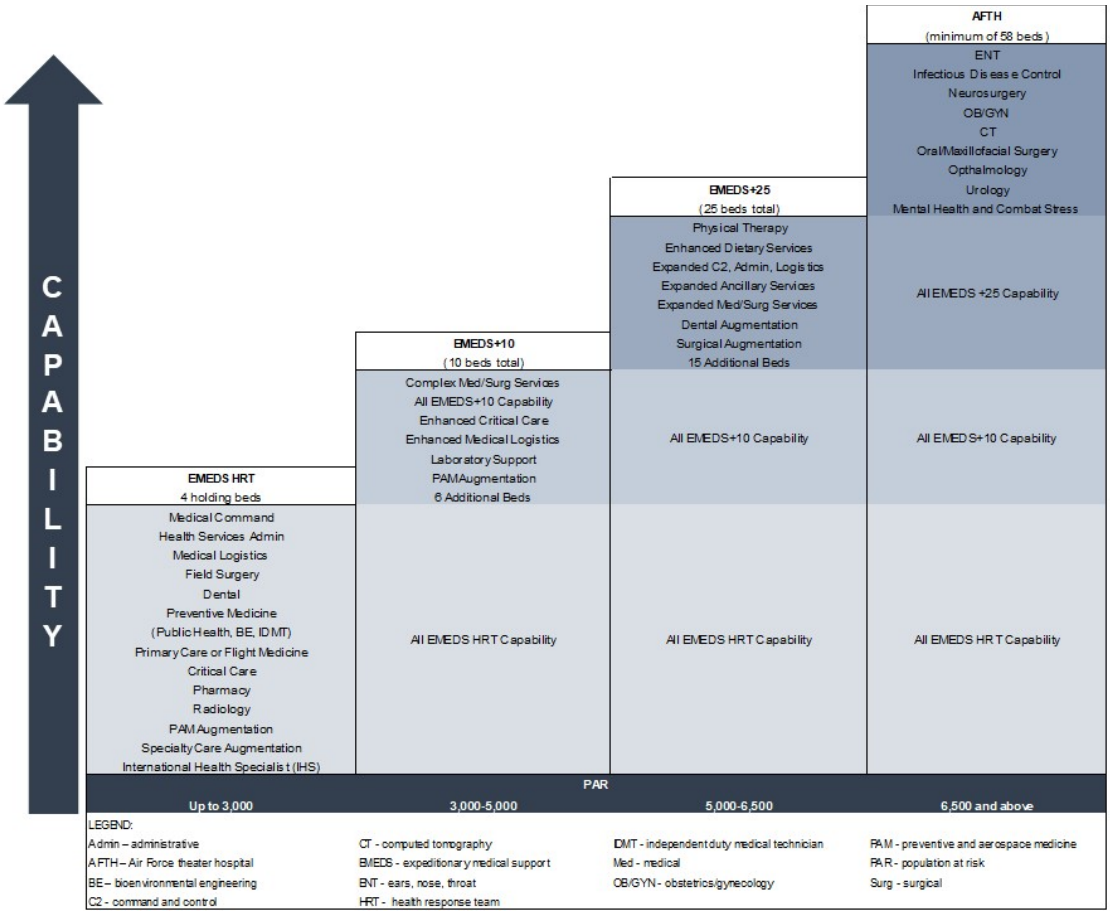


Figure J-2. USAF medical capabilities

J-32. The ERPSS is a modular patient staging system capable of supporting the full range of military operations. The ERPSS is located at an airfield capable of supporting intertheater fixed wing aeromedical evacuation aircraft. The ERPSS ensures patients are prepared (medically and administratively) for flight, and coordinates to accomplish patient movement.

J-33. An ERPSS is capable of providing 24-hour operations including patient reception, medical-surgical nursing care, and limited emergent intervention. The ERPSS lacks laboratory, surgical, x-ray, or blood bank capabilities and is therefore normally collocated with an MTF capable of providing those services. Patient holding times for an ERPSS can range from 6 to 72 hours. The modular nature of the ERPSS enable it to provide patient holding from 10 to 250 beds. For further discussion regarding the ERPSS, see ATP 4-02.2.

Glossary

This glossary lists acronyms and terms with Army or joint definitions. Where Army and joint definitions differ, (Army) preceded the definition. Terms for which ATP4-02.55 is the proponent are marked with an asterisk (*). The proponent publication for other terms is listed in parentheses after the definition.

SECTION I – ACRONYMS AND ABBREVIATIONS

ADP	Army doctrine publication
AFMAN	Air Force Manual
AFTH	Air Force Theater hospital
AHS	Army Health System
AJP	Allied joint publication
AO	area of operations
AML	area medical laboratory
AR	Army Regulation
ATP	Army techniques publication
ATTP	Army tactics, techniques, and procedures
BAS	battalion aid station
BCT	brigade combat team
C2	medical command and control
CBRN	chemical, biological, radiological, and nuclear
CE	command element
COA	course of action
COSC	combat and operational stress control
CONUS	continental United States
DA PAM	Department of Army pamphlets
DMRTI	Defense Medical Readiness Training Institute
DNBI	disease and nonbattle injury
DOD	Department of Defense
EAB	echelons above brigade
EMEDS	expeditionary medical support
EP	engineer pamphlet
EPW	enemy prisoner of war
ERPSS	enroute patient staging system
FHP	force health protection
FM	field manual
GCE	ground combat element
HQ	headquarters

HSS	health service support
ICD-9-CM	International Classification of Disease – 9 Clinical modification
JP	joint publication
KIA	killed in action
LCE	logistics combat element
MACE	Medical and Casualty Estimator
MAGTF	Marine air ground task force
MDBS	medical detachment blood support
MDMP	military decision-making process
MEDBDE (SPT)	medical brigade (support)
MEDCOM (DS)	medical command (deployment support)
MEDEVAC	medical evacuation
MEF	Marine expeditionary force
MLG	Marine logistics group
MPH	miles per hour
MPTK	medical planners tool kit
MTF	medical treatment facility
NATO	North Atlantic Treaty Organization
NCMI	National Center for Medical Intelligence
NTTP	Navy tactics, techniques, and procedures
OEH	occupational and environmental health
OPLAN	operation plan
OPORD	operation order
S-1	Personnel staff officer
S-2	Intelligence staff officer
S-3	Operations staff officer
S-4	Logistics staff officer
S-9	Civil affairs operations officer
STANAG	standardization agreement
SAC	statistical analysis cell
STP	shock trauma platoon
WIA	wounded in action
U.S.	United States
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy

SECTION II – TERMS

Army Health System

A component of the Military Health System that is responsible for operational management of the health service support and force health protection missions for training, predeployment, deployment, and postdeployment operations. Army Health System includes all mission support services performed, provided, or arranged by the Army Medical Department to support health service support and force health protection mission requirements for the Army and as directed, for joint, intergovernmental agencies, coalition, and multinational forces. Also called AHS. (FM 4-02).

area of interest

That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. (JP 3-0).

area of operations

An operational area defined by a commander for land and maritime forces that should be large enough to accomplish their missions and protect their forces. Also called AO. (JP 3-0).

battle injury

Damage or harm sustained by personnel during or as a result of battle conditions. (JP 4-02).

casualty

Any person who is lost to the organization by having been declared dead, duty status—whereabouts unknown, missing, ill, or injured. (JP 4-02).

disease and nonbattle injury

All illnesses and injuries not resulting from hostile action or terrorist action or caused by conflict. Also called DNBI. (JP 4-02).

force health protection

(Joint) Measures to promote, improve, or conserve the behavioral and physical well-being of Service members to enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. Also called FHP. (JP 4-02). (Army) Force health protection are measures that promote, improve, or conserve the behavioral and physical well-being of Soldiers comprised of preventive and treatment aspects of medical functions that include: combat and operational stress control, dental services, veterinary services, preventive medicine, and laboratory services. Enabling a healthy and fit force, prevent injury and illness, and protect the force from health hazards. (FM 4-02).

health service support

(Joint) All services performed, provided, or arranged to promote, improve, conserve, or restore the mental or physical well-being of personnel. Also called HSS. (JP 4-02). (Army) Health service support is support and services performed, provided, and arranged by the Army Medical Department to promote, improve, conserve, or restore the behavioral and physical well-being of personnel by providing direct patient care that include medical treatment (organic and area support) and hospitalization, medical evacuation to include medical regulating, and medical logistics to include blood management. (FM 4-02).

hostile casualty

A person who is the victim of a terrorist activity or who becomes a casualty "in action." "In action" characterizes the casualty as having been the direct result of hostile action, sustained in combat or relating thereto, or sustained going to or returning from a combat mission provided that the occurrence was directly related to hostile action. Included are persons killed or wounded mistakenly or accidentally by friendly fire directed at a hostile force or what is thought to be a hostile force. However, not to be considered as sustained in action and not to be interpreted as hostile casualties are injuries or death due to the elements, self-inflicted wounds, combat and operational stress reaction, and except in unusual cases, wounds or death inflicted by a friendly force while the individual is AWOL, deserter, or dropped-from-rolls status or is voluntarily absent from a place of duty. (AR 638-8).

inpatient

A person admitted to and treated within a Role 3 and 4 hospital and who cannot be returned to duty within the same calendar day. (FM 4-02).

medical evacuation

The timely and effective movement of the wounded, injured, or ill to and between medical treatment facilities on dedicated and properly marked medical platforms with en-route care provided by medical personnel. Also called MEDEVAC. (ATP 4-02.2).

medical regulating

The actions and coordination necessary to arrange for the movement of patients through the roles of care and to match patients with a medical treatment facility that has the necessary health service support capabilities and available bed space. (JP 4-02).

medical treatment facility

(Joint) A facility established for the purpose of furnishing medical and/or dental care to eligible individuals. (JP 4-02). (Army) Medical treatment facility refers to any facility established for the purpose of providing medical treatment. This includes battalion aid stations, Role 2 facilities, dispensaries, clinics, and hospitals. (FM 4-02).

outpatient

A person receiving medical/dental examination and/or treatment from medical personnel and in a status other than being admitted to a hospital. Included in this category is the person who is treated and retained (held) in a medical treatment facility (such as Role 2 facility) other than a hospital. (FM 4-02).

patient

A sick, injured or wounded Soldier who receives medical care or treatment from medically trained personnel. (FM 4-02).

***patient estimates**

Estimates derived from the casualty estimate prepared by the personnel staff officer/assistant chief of staff, personnel. The patient medical workload is determined by the Army Health System support planner. Patient estimate only encompasses medical casualty.

preventive medicine

The anticipation, prediction, identification, prevention, and control of communicable diseases (including vector-, food-, and waterborne diseases), illnesses, injuries, and diseases due to exposure to occupational and environmental threats, including nonbattle injury threats, combat stress responses, and other threats to the health and readiness of military personnel and military units. (FM 4-02).

return to duty

A patient disposition which, after medical evaluation and treatment when necessary, returns a Soldier for duty in his unit. (FM 4-02).

theater evacuation policy

A command decision indicating the length in days of the maximum period of noneffectiveness that patients may be held within the command for treatment, and the medical determination of patients that cannot return to duty status within the period prescribed requiring evacuation by the first available means, provided the travel involved will not aggravate their disabilities or medical condition. (ATP 4-02.2).

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