

CHAPTER 1

HEALTH SERVICE SUPPORT IN THE AIRLAND BATTLE

Section I. THE MISSION

1-1. The AirLand Battle Doctrine

The Army's keystone doctrinal manual, FM 100-5, explains how the Army plans and operates with other Services and allied forces. While emphasizing conventional military operations, FM 100-5 recognizes that Army forces must be capable of operating effectively in any battlefield environment.

1-2. The Mission of the Army Medical Department

a. Armies that are winners of battles and campaigns have the following common qualities:

- They are physically fit.
- They are emotionally well.

- They are capable of concentrating superior combat power at decisive times.

b. The AMEDD plays a key role in developing and maintaining combat power. Its mission is to maintain the health of the Army to conserve its fighting strength (trained manpower). Commanders need to retain acclimated and experienced personnel to perform their particular mission. In retaining such personnel, the load on the replacement system is diminished, and the requirements for patient evacuation are decreased. On the other hand, accumulation of patients within any combat unit restricts its movements. It may also reduce the soldier's willingness to take necessary risks because of a perceived lack of HSS.

Section II. THE BATTLEFIELD OPERATIONAL ENVIRONMENT

1-3. The Operational Continuum

The strategic environment within each theater consists of a variety of conditions—political, economic, and military. It also consists of a range of threats that result in a wide range of operations that can correspondingly occur in response to those conditions and threats. These operations are conducted within a continuum consisting of three general states—peacetime competition, conflict, and war. The operational continuum discussed below suggests the types of operations conducted during the three general states. The operational continuum is intended to assist in the articulation of the strategic situations within a theater. Although the following discussion of the states within the continuum describes each in distinct terms, in actual circumstances there may be no precise distinctions where a particular state ends and another begins. In any case, the ability to describe strategic situations in clear terms will assist commanders in chief (CINC) in defining needs, devising strategies, and projecting resources.

a. Peacetime Competition. Peacetime competition is a state wherein political, economic, informational, and military measures, short of

combat operations or active support to warring parties, are employed to achieve national objectives. Within this state, US forces may conduct joint training exercises to—

- Demonstrate resolve.
- Conduct peacekeeping operations.
- Participate in nation-building activities.
- Conduct disaster relief and humanitarian assistance.
- Provide security assistance to friends and allies.
- Execute shows of force,

Some operations, such as support to interagency counternarcotic operations, have dimensions that may span peacetime competition and conflict. These examples are illustrative, not inclusive. When confrontations and tensions occur involving the clear threat or the use of armed force, a situation exists that is a potential point of transition to a state of conflict.

b. Conflict.

(1) Conflict is an armed struggle or clash between organized parties within a nation or between nations to achieve limited political or military objectives. While regular forces are often involved, irregular forces frequently predominate. Conflict is often protracted, confined to a restricted geographic area, and constrained in weaponry and level of violence. Within this state, military power in response to threats may be exercised in an indirect manner while supporting other elements of national power. Limited objectives may be achieved by the short, focused, and direct application of force. Conflict also describes situations where continuing clashes or crises occur over—

- Boundary disputes.
- Land and water territorial claims.
- Conditions in which opposing political factions engage in military actions to gain control of political leadership within a nation.

(2) In the future, potential exists for crises and clashes in space.

(3) As the amount of forces, frequency of battle, number of nations, and levels of violence increase and are sustained over an extended period of time, and when the sovereignty of a nation is threatened, conflict approaches the threshold of a state of war.

c. War. War is sustained use of armed force between nations or organized groups within a nation involving regular and irregular forces in a series of connected battles and campaigns to achieve vital national objectives. War may be limited, with some self-imposed restraints on resources or objectives; or, it may be general with the total resources of a nation or nations employed and the national survival of a belligerent at stake.

1-4. The Medical Threat

The medical threat is the composite of all ongoing or potential enemy actions and environmental conditions that reduce the performance effectiveness of the soldier. The soldier's reduced

effectiveness results from sustained wounds, injuries, or diseases. Examples of significant threats to the medical mission area are—

- Those weapons or environmental conditions that generate wounded, injured, and sick soldiers beyond the capability of the HSS system to provide timely medical care.

- Those weapons or environmental conditions that produce qualitatively different wound or disease processes.

1-5. Enemy Combat Operations

A threat to the medical mission results from enemy combat operations that—

- Disrupt HSS operations.
- Threaten the survival of HSS.

b. This threat, however, is NOT considered to be a medical threat.

1-6. Elements of the Medical Threat

a. Naturally Occurring Infectious Diseases. Naturally occurring infectious diseases, also referred to as endemic diseases, represent a significant threat to US armed forces deployed outside continental United States (OCONUS). Historically, infectious diseases have been responsible for more lost foxhole days than battle injuries. Many naturally occurring infectious diseases have short incubation periods. They may cause significant numbers of casualties within the first 48 hours to 2 weeks of a deployment. Some examples of the more militarily significant, naturally occurring, infectious disease threats are as follows:

- (1) Acute diarrhea.
- (2) Acute respiratory diseases.
- (3) Malaria.
- (4) Arbovirus infections.
- (5) Sexually transmitted diseases.

- (6) Japanese encephalitis.
- (7) Hemorrhagic fever with renal syndrome.
- (8) Schistosomiasis.
- (9) Leishmaniasis.
- (10) Leptospirosis.
- (11) Viral hepatitis.
- (12) Scrub typhus.

b. Environmental Extremes.

(1) The following environmental conditions pose significant health hazards to an unacclimated, unprepared, and ill-conditioned military force:

- Heat.
- Cold.
- High humidity
- High terrestrial altitude.

(2) Projection of US armed forces into areas of the world where the above conditions exist without adequate opportunity for acclimatization may contribute to mission failure from the soldier's performance degradation. Many regions of the world where the US has vital national interests have areas of high altitude, humidity, and extremes in temperature. These areas include—

- Countries with year-round tropical climates and extended rainy seasons such as Panama and the Philippines.
- Countries with harsh, cold winters such as Korea and Northern Europe.
- Countries with large deserts and hot, dry climates such as Saudi Arabia and Kuwait.

c. Battle Injuries—Kinetic Energy and Fragmentation Antipersonnel Ordnance/Munitions.

Conventional warfare munitions include small arms, high velocity weapons, rockets, bombs, artillery, as well as bayonets and other wounding devices used or employed by a single individual or a crew. This threat will be encountered in all geographic areas and will be employed by adversary forces throughout the operational continuum. Research and development in “smart munitions” and extended range artillery, coupled with more powerful high explosives, will increase the threat from this type weapons in mid- and high-intensity conflicts. In low- and mid-intensity conflicts, wounds from booby traps, mines, and nontraditional weapons (homemade explosives, crossbows, and “pungie sticks”) will be encountered.

d. Biological Warfare.

(1) Biological warfare (BW) is defined as the intentional use of disease-causing organisms (pathogens), toxins, or other agents of biological origin (ABO) to—

- Incapacitate, injure, or kill humans and animals.
- Destroy crops.
- Weaken resistance to attack.
- Reduce the will to wage war.

(2) Historically, BW has primarily involved the use of pathogens as sabotage agents of food and water supplies to spread contagious disease among target populations. For purposes of medical threat risk assessment, only those biological warfare agents that incapacitate, injure, or kill humans or animals are considered. The BW agents and ABOs generally fall into one of the following categories:

- Naturally occurring, unmodified, infectious agents (pathogens).
- Toxins, venoms, and their biologically active fractions.
- Modified infectious agents.
- Bioregulators/physiologically active compounds.

(3) The causative agents for anthrax, tularemia, plague, and cholera, as well as *botulinum* toxin, staphylococcus enterotoxin, and mycotoxins are believed to have been developed as BW agents by potential adversaries of the US. Many governments recognize the virtually limitless potential of biotechnology as a tool for the production of biological warfare agents. Naturally occurring infectious organisms can be made more virulent, antibiotic-resistant, and manipulated to render protective vaccines ineffective. Such developments would greatly complicate the ability to detect and identify BW agents and operate in areas contaminated by such biological agents.

e. Third World Chemical Warfare. Since World War I, the popular opinion within western political and military circles has been that it is politically dangerous, morally wrong, or militarily unnecessary to prepare for or conduct offensive chemical warfare (CW). Events during the last 50 years have called into question the universality of this repulsion. The confirmed use of CW agents by Iraq against Iranian forces; the probable use of CW agents by the Soviets in Afghanistan; and the reported use of chemical agents and toxins in Southeast Asia indicate a heightened interest in CW as the underdeveloped country's force equalizer to counter advanced weapons technology in the world political arena. Nerve and blister agents appear to be the most probable types of CW agents available to developing countries.

f. Soviet Chemical Warfare. The Soviet Union has the most extensive CW capability in the world. The Soviets can deliver chemical agents with almost all conventional weapons systems from mortars to long-range tactical missiles available to ground, air, and naval forces. By their own admission, the Soviets have over 50,000 tons of poisonous compounds stockpiled for use in warfare. Agents believed to be available in the Soviet inventory include nerve agents (VX, thickened VX, GB [sarin], thickened GD [soman]; vesicants (thickened lewisite and a mustard-lewisite mixture); choking agents (phosgene); and riot control agents (CS).

g. Directed-Energy Weapons. Directed-energy weapons generate and illuminate a target with coherent radiation to induce electronic upset, thermal damage, or structural damage and thereby

cause mission failure. The radiation is of three types: radio frequency, laser (coherent light), and charged particle beam. There have been numerous reports of personnel using optic devices sustaining eye damage after exposure to a bright flashing light emanating from warships and other sources. These reports suggest an increasing threat from already fielded lasers to both air and ground forces.

h. Blast-Effect Weapons. Primary blast injury has been a rarity in the history of US military medicine. Battlefield employment of blast-effect weapons may represent an emerging medical-threat in the form of primary blast wounded. Gas-filled bodily organs such as the ears, lungs, and digestive tract are most susceptible to primary blast injury. This emerging threat may be reflected in terms of lower lethality; however it will result in a greater number of primary blast wounded and significantly increased medical work load.

i. Combat Stress and Continuous Operations. Global mobility of US armed forces is a major element of US political and military strategy. Alert forces may be required to operate without rest for extended periods of time during mobilization, staging, airborne transportation, and combat insertion into hostile areas. Modern combat will stress soldiers to the limits of their endurance. Some of the causes of stress to the soldiers are—

- The increased lethality of weapons.
- Technological skill requirements.
- Exposure to the horror of nuclear, biological, and chemical (NBC) weapons.
- Day/night all-weather operations.

Under these mobilization and combat conditions, stress, as well as physical and emotional fatigue, becomes a major contributor to the number of casualties seen by the HSS system.

j. Flame and Incendiary Weapons. Flame and incendiary systems will continue to be effective as antipersonnel and antimaterial weapons on the AirLand battlefield. Early generation weapons and munitions are still to be found in the armies of developed nations. Two examples include napalm and white phosphorous fill for aerial delivered

bombs. New generation weapons and flame/incendiary agents are being fielded. Examples of some of the newer systems include the Soviet rocket-propelled flame projectors (Models RPO and RPO-A) currently in use by the Soviet Army. Possible uses of flame and incendiary weapons include the clearing of difficult defensive positions such as—

- Caves during combat operations in mountainous terrain.
- Bunkers and buildings during combat operations in urban areas.
- Soft shelter and vehicular targets.

Flame has also been used quite effectively in previous conflicts in an antitank role.

k. Nuclear Warfare. Currently, the primary nuclear warfare threat is from the Soviet Union. Open source information suggests that countries in the Middle East, Asia, and Africa may develop nuclear weapons capability within the next decade. On a European battlefield (NATO versus Warsaw Pact), likely nuclear targets include nuclear delivery systems, command, control, and communications systems, special ammunition supply points, troop concentrations, and prepared defenses. Planners can expect a minimum of 10 to 20 percent casualties within a division-sized force that has experienced a nuclear strike. This estimate may be understated as the proximity to ground zero is the critical factor in determining the effect of the weapon on the force. In addition to casualties, a nuclear weapon detonation can generate an electromagnetic pulse that will result in catastrophic failure of electronic equipment components.

1-7. The Medical Threat in High-Intensity Combat Operations

Commanders should anticipate increased casualty densities during high-intensity combat operations over those experienced in previous conflicts. The elements of medical threat of greatest potential for force degradation during high-intensity combat operations are—

- Battle injuries due to artillery, small arms, and fragmentation munitions.

- Casualties due to combat stress.
- Nuclear, biological, chemical, and combined casualties.

1-8. The Threat to Health Service Support Operations in a High-Intensity Combat Environment

a. Significant increases in casualty densities will cause local or general overload of the HSS system.

b. Premeditated attack upon medical organizations, personnel, or Class VIII stores is not anticipated, but it cannot be completely ruled out. The degree of adherence to the laws of land warfare are adversary dependent. A steady erosion of battlefield medical resources will result from the—

- Ever-increasing range of indirect fire weapons.
- Enhanced wounding capacity and destructiveness of munitions.
- Collateral effects of conventional, chemical, or nuclear weapons.
- Blindness of “smart,” nonlinear of sight munitions to the red cross.

c. Enemy combat operations in friendly rear areas will interdict lines of communication and disrupt necessary logistics activities. This will produce a serious negative effect on our ability to retrieve and evacuate wounded, sick, and injured soldiers and deliver medical care. Lack of air superiority will seriously reduce our use of aeromedical evacuation in the forward combat zone (CZ).

d. Prolonged periods of intense, continuous operations will tax combat medics to the limit of their physiological and emotional endurance. This stress and fatigue will cause a quantitative and qualitative degradation in the ability of the HSS system to deliver medical care at a sustained level.

e. Health service support organizations are not expected to be the primary target for biological or chemical strikes. However, logistics base

complexes WILL be primary targets. As elements of logistics complexes, medical organizations must anticipate collateral contamination from attacks on adjacent facilities. Divisional HSS assets have an even higher probability of being required to operate in or in proximity to areas contaminated from NBC strikes.

1-9 The Medical Threat in Mid-Intensity Combat Operations

a. The medical threat associated with mid-intensity combat closely parallels the medical threat associated with high-intensity conflict. The greatest difference between medical threat at these two levels of conflict is in the expected number of casualties. The primary reason is the reduced number of soldiers exposed to the destructive effects of enemy weapons. The second important difference is the expected increase in the impact of environmental extremes and naturally occurring infectious disease.

b. The most significant contributors to force degradation during mid-intensity combat operations are as follows:

- Battle injuries due to artillery, small arms, and fragmentation munitions.
- Casualties due to combat stress.
- Casualties from environmental extremes and endemic disease.
- Chemical and biological warfare and combined casualties.

1-10. The Threat to Health Service Support Operations in Mid-Intensity Combat Operations

The nature of the threat to HSS operations during mid- and high-intensity combat operations is very similar. However, the HSS infrastructure in a mid-intensity combat environment will be much more austere than in a high-intensity conflict. Hospitalization and evacuation resources backing up Echelon II HSS units will initially be limited in most mid-intensity combat scenarios. (The echelons of medical care are discussed in Chapter 3.) This situation will require—

- A greater reliance on and early deployment of preventive medicine assets.
- Far forward surgical and resuscitative capability.
- United States Air Force (USAF) strategic aeromedical evacuation.

Austere health service resources within the area of operations will significantly degrade the capability of the HHS commander to reconstitute or replace his depleted or destroyed units from within theater assets.

1-11. The Medical Threat in Military Operations Short of War

a. The medical threat is traditionally evaluated for its impact on US forces alone. However, when preparing for and conducting military operations short of war, the impact of these elements of medical threat on the indigenous population as a contributing factor to social, political, and economic instability must be considered. The general environment in which these types of operations are conducted can be varied. These environments range from peaceful developing countries with no apparent internal or external instabilities, to countries with limited resources and poorly-fed populations beset by disease and dependent on humanitarian assistance. Moreover, many of these countries may have active insurgent movements striving to displace the government using the general population for logistical support and cover.

b. During military operations short of war, the primary focus is on nation assistance, disaster relief, and humanitarian assistance. In this scenario, the most significant elements of the medical threat confronting US forces and mission planners are—

- Naturally occurring infectious disease.
- Environmental extremes.

c. There is a broad range of viable scenarios under which US forces could be employed in nation assistance, disaster relief, and humanitarian assistance missions involving an equally diverse list

of countries in the Third World. In general, areas where assistance teams and units may be employed will likely have very low standards of living and high levels of naturally occurring infectious disease. Many of these diseases could be considered “exotic” to most US health service personnel. United States forces entering these areas will have very little, if any, natural immunity to many of the endemic diseases. The degree of cultural and social interaction required to support the mission, as well as the sharing of food, quarters, and recreation with local nationals, will also increase the exposure of US personnel to diseases endemic to the host country. For the most part, assistance operations will last for an extended period of time (beyond 30 days), once again increasing the exposure to and raising the risk of endemic disease.

d. There is an increased potential for performance degradation and illness for unacclimatized personnel. These are caused by environmental extremes in many of the regions where US involvement in low-intensity conflict (LIC) is likely. In general, US assistance forces could be employed in regions where climate ranges from desert to tropical and lowlands to high terrestrial altitude. The US assistance forces must be acclimatized, both physiologically and psychologically. This will enable them to cope with environmental extremes associated with living and working during extended periods of high humidity, rain, or prolonged dry seasons.

e. Medical threat associated with peacetime contingency operations will, under certain combat scenarios, be the same as medical threat described for the mid-intensity conflict environment. Battle-type injuries will increase as the level of violence in the LIC environment escalates with increased

insurgent and terrorist activities against US targets and the indigenous population. The spread of technology to the Third World carries with it the potential for eventual acquisition and use of nuclear devices and chemical and biological warfare agents by terrorist and insurgent groups.

1-12. The Medical Threat to Health Service Support Operations in Military Operations Short of War

a. In an LIC environment, the protection afforded to medical treatment facilities (MTFs) and medical personnel by the Geneva Convention may be nonexistent. In fact, HSS activities may be perceived as lucrative targets by insurgent or terrorist groups. This is true especially if these facilities are seen as making a major contribution to the host-nation government. Medical facilities will also be vulnerable to theft and raids on Class VIII supplies by insurgents or terrorists for their own support or to support black-market activities.

b. In most LIC environments, the in-country components of the US logistical system in support of US assistance forces will be austere. This is also the case with the HSS structure. The US assistance forces will place increased reliance on local food and water sources and host-nation sanitation, public health, medical treatment, and health industry resources. There will also be increased reliance on USAF for strategic medical evacuation resources in LIC scenarios. These circumstances will demand solid HSS planning. This planning must be based on current, accurate medical intelligence. It must include the total involvement of the country team in the HSS planning effort prior to the execution of operations.

Section III. PROTECTION AND SUSTAINMENT

1-13. AirLand Battle Tenets

To enhance the maneuver commander’s chance of success, medical commanders must apply the ALB tenets to their mission.

a. Initiative. The tactical operation must not be affected by a lapse in HSS. The HSS units must move rapidly to provide the continuity needed

to protect and sustain the force; thereby, preserving the initiative of the force.

b. Depth. From the HSS perspective, applying depth means that HSS commanders and staffs must understand the maneuver commander’s plan. This enables them to picture the battlefield in depth and width to—

- Determine the medical threat.
- Anticipate future events and HSS requirements as operations develop.
- Ensure that HSS elements retain the flexibility to respond quickly to change.

c. Agility. Like all supporting operations, HSS must be capable of rapid adjustment to changes in the tactical situation. Success in sustaining the force depends on a well-developed, responsive HSS system. The medical commander must retain the ability to shift medical resources to provide HSS to areas of large patient concentration. Responsive HSS is important to the soldier's morale and hastens his early return to duty (RTD).

d. Synchronization. With unity of purpose throughout the force, every resource is used where and when it will make the greatest contribution to success. With synchronization, nothing is wasted or overlooked. The hallmark of HSS is improvisation. The HSS commanders must seek innovative solutions to HSS problems. Every action must flow from understanding the higher commander's concept of the operation. The HSS requirements must be integrated in operational planning to increase the capability of medical units at all echelons to provide effective support.

1-14. General Principles Applied to Health Service Support Objectives

- a.* The objectives of the AMEDD are to—
- Save lives.
 - Evacuate casualties from the battlefield. This allows the combat commander to continue his mission.
 - Reduce the incidence of disease and nonbattle injury (DNBI) through preventive medicine programs.
 - Examine, treat, and return soldiers to duty as far forward as possible.
 - Provide the utmost benefit to the maximum number of personnel by synchronizing HSS resources.

b. The six general principles that must be applied to HSS objectives are conformity, proximity, flexibility, mobility, continuity, and control.

(1) Conformity with the tactical plan is the most basic element for effectively providing HSS. By taking part in the development of the commander's plan of operation, the HSS planner can—

- Determine requirements.
- Plan the support needed to conform to tactical operations.

(2) The objective of proximity is to provide HSS to sick, injured, and wounded soldiers at the right time and to keep morbidity and mortality to the minimum. The HSS resources are employed as close to the area of combat operations as the time and distance factors and the tactical situation permit. Patients are evacuated to the MTF or the MTF is moved to the area where the patient population is the greatest. However, medical commanders and staffs, through continuous coordination, ensure that treatment elements or MTFs are not placed in areas that interfere with combat operations.

(3) The objective of flexibility is to be prepared to shift HSS resources to meet changing requirements. Changes in tactical plans or operations make flexibility in HSS essential. Since all HSS units are used somewhere within the theater and none are held in reserve, the commander makes alternate plans for redistribution of HSS resources as required.

(4) The objective of mobility is to ensure HSS assets remain close enough to support maneuvering combat forces. The mobility of medical units organic to maneuver elements should be equal to the forces being supported. Major HSS headquarters in the theater of operations continually assess and forecast unit movement and redeployment. Through the use of organic and nonorganic transportation resources, commanders can rapidly move HSS units to best support combat operations. For example, if one unit is immobilized, a similar unit may be leapfrogged past it. An immobilized unit may be given priority in

evacuating its patients as they become stabilized, and its resources may be moved forward by echelon.

(5) The objective of continuity is to—

- Implement preventive medicine programs.
- Provide optimum care and treatment to the sick, injured, and wounded in an uninterrupted manner.

Continuity in care and treatment is achieved by moving the patient through a progressive, phased HSS system, extending from the forward area of the CZ to the area as far rearward as the patient's condition requires, possibly to the continental United States (CONUS). Each type of HSS unit contributes a measured, logical increment appropriate to its location and capabilities.

(6) The objective of control is to ensure that scarce HSS resources are efficiently employed and support the tactical and strategic plan. It also

ensures that the scope and quality of medical treatment meet professional standards and policies. To ensure that the scarce HSS resources are efficiently employed and support the tactical plan, medical assets are under the control of a single medical commander.

1-15. The Focus of Health Service Support in the AirLand Battle

a. Field Manual 100-10 provides the basis for subordinate CSS doctrine, materiel, training, and organizational development. It describes the principles upon which the Army's CCS system operates and the ways in which the system is organized.

b. As a function of CSS, HSS focuses on conserving the human and animal components of the combat commander's weapons system. Far forward care describes the character that HSS must assume. Applying ALB tenets to the delivery of HSS will ensure that the objectives of the AMEDD are met and that its mission to conserve the fighting strength is fulfilled.