Chapter 12

PREVENTIVE MEDICINE CONSIDERATIONS IN PLANNING MULTISERVICE AND MULTINATIONAL OPERATIONS

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INTRODUCTION

In the US military of the 1990s, large unit operations have most often been joint operations, that is, operations composed of personnel from two or more of the services. This is not a new concept—many operations during World War II were joint, such as the amphibious invasions in the Pacific theater. Overall, military campaigns are won by occupying territory, which requires land forces of the Army or Marine Corps. But the Army and the Marine Corps cannot reach the area of operations without the Air Force, and the Navy and Marine Corps emphasis on mobility and flexibility means that they may require extensive Army logistics support once they have depleted their own combat service support. The services of the US military are interdependent for mission success.

Today's military units with significant preventive medicine (PM) assets, which generally reside at the division level and above, must interact with personnel from other services while sharing PM and other support assets. Additionally, Preventive Medicine Officers (PMOs) are placed in advisory positions to the Surgeons of joint forces, unified commands, and combined commands and so must be familiar with joint PM considerations. (Joint forces contain elements of at least two US military services; unified commands contain significant components of more than one US military service; and combined commands contain forces from more than one nation.) US military operations are conducted with such shared resources as a Joint Task Force (JTF) Surgeon, a Joint Blood Program Office, and a Joint Medical Regulating Office. In addition, increased US involvement in United Nations operations has meant that the operational force is likely to be a combined task force, which is sometimes called a multinational force. The PM planner in combined operations faces the difficult challenge of developing a comprehensive plan to keep the combined force healthy.

Major General Jonathan Letterman, Medical Director of the Army of the Potomac during the American Civil War, underscored the essential role of PM in military operations when he said:

> The leading idea, which should be constantly kept in view, is to strengthen the hands of the Commanding General by keeping his army in the most vigorous health, thus rendering it, in the highest degree, efficient for enduring fatigue and privation, and for fighting.[1(p100)]

That timeless wisdom calls on the medical leadership to employ PM to strengthen the warfighting capability of the commanding general of any task force, whether individual service, joint, combined, or unified. The essentials for planning and executing PM operations in joint, unified, and combined operations include knowledge of the policy-making process in the Office of the Assistant Secretary of Defense (Health Affairs) and the organization of PM in the Army, Navy, Marine Corps, Air Force, Coast Guard, and Reserve components. The PM mission in Civil Affairs and Special Operations is also relevant because these two organizations are often deployed as parts of joint, unified, or combined operations. Understanding the differences in structure and capabilities of these organizations is necessary to coordinate their efforts and provide effective PM services to all personnel.

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE HEALTH AFFAIRS

Preventive Medicine and Military Public Health Policy

The Assistant Secretary of Defense (Health Affairs)—the ASD (HA)—is the principal staff assistant and advisor to the Secretary of Defense and Under Secretary of Defense for Personnel and Readiness for all Department of Defense (DoD) health policies, programs, and activities. Preventive medicine is a principal component of the DoD's medical mission to maintain readiness, provide medical services and support to the armed forces during military operations, and provide continuing medical services and support to members of the armed forces, their dependents, and others entitled to DoD medical care. Current Joint Health Service Support Strategy demands delivering a healthy force and preventing and minimizing disease and nonbattle injury (DNBI).

Organizational Structure

Reporting to the ASD (HA) through the Principal Deputy Assistant Secretary are five Deputy Assistant Secretaries (DASDs); they are responsible for these functional activities: Clinical Services (CS), Health Budgets and Programs, Health Services Financing, Health Services Operations and Readiness (HSO&R), and Policy and Planning. The DASD (CS) establishes policies, procedures, and standards that

govern DoD medical programs, such as quality management programs, human immunodeficiency virus programs, women's health issues, graduate medical education, health-related research, PM and public health, and all matters involving clinical policy. While the responsibility for formulation of PM and public health policy resides primarily with the DASD (CS), policy is routinely coordinated with two other offices. The first is the office of the DASD (HSO&R), which is responsible for assuring the adequacy of medical resources to meet the needs of national emergencies and armed conflict and for dedicating resources and personnel to implement policies affecting military public health. The other office with which the DASD (CS) coordinates is that of the Joint Staff's Deputy Director for Medical Readiness (J-4 MED) in the office of the J-4 (logistics). The Joint Staff performs military staff functions, which are discussed later in this chapter, for the Joint Chiefs of Staff (JCS). The J-4 MED provides the vital mechanism to implement PM policies affecting deployed forces and to incorporate them into JCS operations plans and joint doctrine.

The J-4 MED develops the joint force medical protection policy and PM strategies for diseases of operational importance, biological warfare, and the effects of exposure to environmental hazards. The mission of the J-4 MED Office is to plan for comprehensive medical readiness to support the national military strategy, while staying synchronized with the requirements of the Commander in Chief and the capabilities of the services; it also influences resource allocation and priority. The Office must coordinate with the services and defense agencies to determine PM requirements and capabilities. The officer filling this position at the J-4 MED also represents the Joint Staff on the Joint Preventive Medicine Policy Group, the Armed Forces Epidemiological Board, and the DoD's Global Surveillance and Response Committee.

Policy Formulation

It is DoD policy to enhance mission readiness, unit performance, and the health and fitness of individual military servicemembers (including Reserve and National Guard personnel), beneficiaries, and civilian employees through comprehensive health promotion and disease prevention programs and to provide healthy environments for workers and visitors. PM policy issues may emerge from the office of the ASD (HA), from the services, from legislative mandate, or from operational requirements. The process can be complex, involving interaction among multiple agencies within the DoD, including Health Affairs, General Counsel, Legislative Affairs, Comptroller, and Public Affairs. For example, the policy determining the use of tick-borne encephalitis vaccine by US forces during Operation Joint Endeavor in Bosnia involved extensive review and coordination among the aforementioned DoD offices, the Centers for Disease Control and Prevention, and the Armed Forces Epidemiological Board.

The office of the ASD (HA) relies on internal analysts to formulate policy; however, it routinely solicits external review and consultation from the Surgeons General, the Armed Forces Epidemiological Board, the Armed Forces Medical Intelligence Center (AFMIC), and civilian public health institutions. PM expertise is provided through the Surgeons General from the Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Md; the Naval Environmental Health Center, Norfolk, Va; and the Air Force's Institute of Environmental Risk Analysis, San Antonio, Tex. On occasion, as in the situation involving the health concerns of Persian Gulf War veterans, external institutions such as the National Academy of Sciences may be commissioned to provide consultation and recommendations. As policies are formulated, they are coordinated by the Surgeons General of the various services.

Priority Programs

As the office of the ASD (HA) prepares for the challenges of the 21st century, several PM issues will likely predominate. Experiences in the aftermath of the Persian Gulf War have increased the emphasis being placed on comprehensive medical surveillance. This medical surveillance will integrate and fully coordinate the efforts of the Surgeons General, JCS, and subordinate units before, during, and after deployment. As the nature of modern warfare evolves, participation in low-intensity conflict and humanitarian assistance operations will become increasingly important. Prevention and control of DNBI will continue to be of paramount importance, but surveillance systems must also be capable of detecting chronic morbidity that might be associated with participation in deployments.

The DoD, which administers the largest managed care organization in the United States, has begun to recognize the potential benefit of PM approaches to the assessment of health services. Quality management review will become increasingly important to study the performance and outcomes of key clinical preventive services, such as screening tests, routine counseling, and immunizations, and has been incorporated into health care benefit plans for active duty and other DoD enrollees.

US ARMY FIELD PREVENTIVE MEDICINE

Army field PM is organized and staffed to provide soldiers and commanders with the same PM services in the field environment as they have in garrison. These services are critical to soldiers, whether they are engaged in training exercises or deployed in combat operations. The prevention of disease and injury reduces manpower losses, patient loads, and evacuation requirements. The timely and effective implementation of appropriate PM measures to counter the medical threat serves as a combat multiplier, enhancing unit effectiveness and reducing the individual soldier's exposure to disease and environmental threats. Command interest and commitment to the PM program are essential to its success, since the military public health program is a command program and not actually a medical program.[2]

The scope of field PM services available in a theater of operations includes providing assistance to the commander in preparing staff estimates by identifying the medical threat and recommending appropriate PM countermeasures. PM assets provide oversight for the health-related aspects of water and ice production, distribution, and consumption; entomological control measures; environmental conditions; and waste disposal practices. Another key responsibility is the training and assessment of field sanitation teams.[3]

Unit-Level Preventive Medicine Assets

PM functions are performed at the soldier and unit level across the theater, from the forward line of troops to the rear areas. Specialized PM personnel are organic to the divisions and armored cavalry regiments, as well as to medical functional units at echelons above the division level. These personnel are trained and ready to provide flexible PM assistance within their areas of concern. But PM support for both training and combat operations begins with the individual soldier and continues up through the unit and higher echelons. Individual- and unit-level PM measures are a command responsibility. The individual soldier must perform basic PM measures, such as maintaining physical and mental fitness and guarding against heat and cold injury, other physical injury, biting insects, and diarrhea. Organic medical personnel and the unit field sanitation team provide assistance.[2–4]

The field sanitation team advises the unit commander on issues essential to reducing DNBI. It also ensures that appropriate field sanitation facilities are established and maintained, effective sanitary and control measures are applied, and effective PM measures are practiced. The team instructs, supervises, assists with, inspects, and reports on field sanitation activities. Field sanitation teams are required for units that are company- or battery-sized or larger.[3,5]

The field sanitation team normally consists of company medics, trained medically as military occupational specialty designation 91As. If these specialists are not available, at least two soldiers in the unit will be picked and trained; at least one must be a noncommissioned officer (NCO). They are trained in the use, maintenance, and care of the field sanitation team equipment, such as water purification kits, food service disinfectant, personal protective equipment, tools needed for spraying insecticide, mouse and rat traps, and rodenticide. The team members provide unit training in personal protective measures for disease control. They also inspect the unit's food service operations, ensure that the unit leaders are supervising the disinfection of the unit's water supply, and instruct the troops in methods of individual water purification. The team members monitor the construction of garbage and soakage pits and inspect the arrangements for waste disposal. The field sanitation team also monitors the construction of field latrines and urinals and inspects them regularly. They use arthropod and rodent control, and sometimes this includes pesticide spraying.[5]

Divisional Preventive Medicine Assets

The PM sections of the divisions and armored cavalry regiments are responsible for assessing the medical threat and determining PM countermeasures; advising commanders and staffs of PM requirements; training, monitoring, and providing technical assistance to unit field sanitation teams; monitoring the training of all soldiers in PM measures; and conducting surveys, inspections, and control activities. Divisional PM assets include a PM physician, an environmental science officer or sanitary engineer, and PM NCOs and enlisted specialists. Division PM sections are typically located in the medical company of the main support battalion. Within the armored cavalry regiment, a single PM NCO is assigned to the medical troop of the regimental support squadron.[2]

Preventive Medicine Assets at Echelons Above the Division Level

Above the division level, direct PM support is typically provided by the PM section of the area

support medical battalion (ASMB) or by specialized PM detachments attached to the battalion. The ASMB includes a PM section identical to that found in the divisions. The staffing of this section permits it to have an extensive capability for epidemiologic (eg, infectious disease) investigations and sanitary engineering support. PM personnel conduct evaluations to identify actual and potential health hazards, recommend corrective measures, and assist in training personnel in disease prevention programs. Support is coordinated with PM detachments and other units within the ASMB. As PM detachments are normally attached to an ASMB, the PM section within the ASMB assumes technical supervision of the attached detachments to coordinate assignment of specific missions. ASMBs and PM support are normally allocated based on the anticipated medical threat and the mission.[6]

PM general support at echelons above the division level is provided by functional teams on an area basis. On occasion, these teams can be attached to specific units in a direct support role and may be used as far down the organization chain as the division level. These functional PM teams provide support within a theater of operations in the specialties of epidemiology, entomology, environmental science, and environmental engineering. Teams are allocated based on the number of troops supported and the medical threat. These teams depend on other units for logistical support. The two types of teams presently available are (1) the Medical Detachment, Preventive Medicine (Entomology) and (2) the Medical Detachment, Preventive Medicine (Sanitation). The teams are similar in structure and function but differ in their primary emphasis. They both have an entomologist, an environmental science officer or sanitary engineer, and enlisted technicians. Both types of team are capable of monitoring vector control activities, field sanitation, water treatment and storage, waste disposal, and DNBI control practices within their assigned area and of making appropriate recommendations. Other functions they perform include medical data collection, investigations, and environmental sampling. Capabilities unique to the entomology team include area and aerial spraying.[2]

PM consultative capabilities are organic to the medical command and control elements at the corps level and above. The medical group's capabilities include consultation services and technical advice in PM, environmental health, and sanitary engineering. The medical brigade provides similar consultation and technical services, plus medical entomology and radiological health. At the theater level, the medical command is also staffed to provide PM consultation and technical services. PM consultative services at all these levels include assessment of the medical threat, evaluation of the PM program, technical advice on medical aspects of nuclear, biological, chemical, and directed-energy weapons, and staff coordination of PM services.[2]

An additional theater asset currently available is the Theater Army Medical Laboratory. This Laboratory provides a broader range of laboratory functions than those normally found in theater hospitals, to include microbiological identification and characterization, biochemical and toxicological analyses, and serological testing for disease diagnosis and prevention. Other functions it provides include food contamination analyses, detection and diagnosis of zoonotic diseases, entomological laboratory support, epidemiologic analyses, and environmental health assessments (Exhibit 12-1). Army PM assets are also found in Civil Affairs and other Special Operations units and are discussed later in this chapter.

EXHIBIT 12-1
THE CAPABILITIES OF THE THEATER AREA MEDICAL LABORATORY

- Provides analytical, investigative, and consultative capabilities to identify nuclear, biological, and chemical threat agents and other samples from the area of operations
- Provides analytical, investigative, and consultative capabilities to assist in the identification of occupational health, environmental health hazards, and endemic diseases
- Provides special environmental control and containment to evaluate biomedical specimens for the presence of highly infectious or hazardous agents of operational concern
- Provides data and data analysis to support medical analyses and operational decisions
- Provides medical laboratory analysis to support the diagnosis of zoonotic and significant animal diseases that impact on military operations
- Provides tailorable force projections to support war and operations other than war

Source: Chambers WR. Command Briefing, 520th Theater Army Medical Laboratory, 1997.

Future Directions

As part of the Medical Reengineering Initiative process, several changes to this PM organization are planned. The current entomology and sanitation detachments are to be replaced with consolidated detachments that retain the capabilities of the two detachments while removing the duplication. A disease surveillance system that is effective, timely, and responsive to the line commander's needs is key to the future PM mission and is being developed. The Theater Area Medical Laboratory is to be reorganized to create a corps-level area medical laboratory, with its focus on endemic disease and environmental and occupational health threats. It is anticipated that these changes, among others, will make the PM support in the field even more effective.

NAVY AND MARINE CORPS FIELD PREVENTIVE MEDICINE

The US Navy and Marine Corps are two separate yet interdependent services within a single military department. The organization of PM services in the Navy and Marine Corps reflects this dichotomy within the Department of the Navy. Medical support is provided to both services by the Navy Medical Department in three ways: (1) direct support from Navy medical personnel assigned to Navy ships, squadrons, and units, (2) direct medical support from Navy medical personnel assigned to Marine Corps units, and (3) medical support to Navy and Marine Corps units from (BUMED) activities such as hospital, clinics, and PM units.

Preventive Medicine Services in Peacetime

Key PM support to operational units during routine operations is provided by Preventive Medicine Technicians (PMTs) assigned to medium- and larger-sized ships (ie, aircraft carriers and most amphibious ships) and by Independent Duty Corpsmen providing some PM services to smaller ships such as destroyers. Approximately 50% of ships with sailors and Marines are at sea at any one time. Programs in the prevention of foodborne and waterborne illnesses, heat injuries, communicable diseases, and occupational injuries and illnesses are active on all ships. Operational staffs may have PM personnel, such as Aerospace Medicine residency–trained flight surgeons, Environmental Health Officers, Industrial Hygiene Officers, and PMTs, filling staff positions.

PM support to Marine units consists of PMTs distributed to battalions and squadrons; a larger PM section is located within the medical battalion and consists of Environmental Health Officers, Entomologists, and PMTs. Marine staffs may have PM personnel involved with contingency and exercise planning. Examples include a physician PMO and a PMT assigned to the Marine Expeditionary Force (Command Element) staff, a residency-trained flight surgeon and PMT on the Marine Air Wing Staff, and an Environmental Health Officer and a PMT assigned to the Marine Division staff.

PM support from BUMED activities includes personnel from hospitals and clinics. They provide an entire spectrum of occupational health and PM services to Navy and Marine Corps units and commands both afloat and ashore. A major focus of PM programs has been at recruit commands, which have had recurrent communicable disease problems.[7] Navy– and Marine Corps–wide programs in all areas of PM, occupational health, and environmental programs are developed and managed by the Navy Environmental Health Center, Norfolk, Va, and its subordinate units: four Navy Environmental and Preventive Medicine Units and two Disease Vector Ecology and Control Centers, which specialize in entomological threat reduction.

At any time, PM personnel are forward deployed in Aircraft Carrier Battle Groups, in Amphibious Ready Groups, and at overseas bases throughout the world providing "routine" public health services and participating in combined and joint military exercises. PM plays a major role in complex humanitarian relief operations, such as those in Rwanda, Guantánamo Bay, and Haiti[8]; in civic action programs associated with annual military exercises, such as Operation Cobra Gold in Thailand; and in public health training operations deployed with engineering and dental units in the Caribbean region.

Preventive Medicine During Mobilization

During a major mobilization, additional PM personnel are assigned from BUMED activities and the Naval Reserve to operational units. Two major advancements occurred in field PM during the Persian Gulf War: (1) the development of methodologies to collect disease rates faster and provide commanders a real-time assessment of DNBI rates that had previously been available months to years after a conflict, and (2) the formation of Navy Forward Deployable Laboratories, through the efforts of personnel from the Navy Medical Research and Development Command, the Environmental and

Preventive Medicine Units, and the Disease Vector Ecology and Control Centers, to provide public health services beyond the capabilities of operational units.[9] These units have been so successful that those laboratories are now part of Navy medical doctrine.[10]

The Navy Forward Deployable Laboratory is an advanced infectious disease diagnostic laboratory that can aid in the recognition and treatment of clinical infectious disease cases, as well as the detection of biological warfare agents. The Laboratory is designed to function anywhere, from the cramped quarters of Navy ships to tents in remote Third World locations. Its diagnostic capabilities are extensive, including the classic bacteriological culture methods but also providing antibiotic susceptibility testing, enzyme-immunoassay, fluorescent microscopy, diagnostic DNA probes, and polymerase chain reaction. It is designed to function as a state-of-the-art, comprehensive, onsite diagnostic laboratory when large numbers of sailors and Marines are deployed to regions with a high risk of infectious disease transmission.[9]

In a major regional conflict, an entire PM unit of approximately 40 personnel, who provide environmental health, entomology, industrial hygiene, and epidemiologic specialty services, can be deployed as part of the Navy Advanced Base Functional Component system. This is a major-theater asset, but it is limited by the extensive airlift capability it requires and by the engineering, transportation, and logistical support it needs when deployed.

PM in the Fleet Marine Force reflects the task organization philosophy behind the differing sizes of Marine Air Ground Task Forces formed to meet the potential threat.[11] The smallest of the task forces is a Marine Expeditionary Unit, which is routinely deployed in both the Pacific and the Atlantic and Mediterranean regions; it consists of 2,000 Marines and sailors deployed on three to five amphibious ships. Its PM support consists of PMTs assigned to the Ground and Air Combat Elements, with a larger PM section in the Combat Service Support Element. The task forces increase in size in increments until they become a Marine Expeditionary Force (MEF) of 50,000 Marines and sailors fully equipped for 60 days of sustained combat. All the PM assets assigned to a MEF in garrison would deploy, as well as active duty and reserve billets that are only filled at mobilization. The majority of PM services reside in the medical battalion, the unit that is responsible for providing additional support (from the Combat Service Support Element) above what organic unit personnel can provide. Specific additional capabilities can be added from the Navy deployable laboratories and the Advanced Base Functional Components, if needed. Each MEF can also be tasked to perform such operations as humanitarian relief or the evacuation of US or allied nation noncombatants from a combat or disaster situation.

AIR FORCE FIELD PREVENTIVE MEDICINE

Air Force PM manpower assets differ markedly from those of the other services. General PM physicians are few in number and assigned primarily to the Force Health Protection and Surveillance Branch and the Office for Prevention and Health Services Assessment, both at Brooks Air Force Base in San Antonio, Tex. PM and public health duties at Air Force bases are performed by flight surgeons, public health officers, and bioenvironmental engineers.

Flight surgeons are physicians who complete a 7-week course in Aerospace Medicine. This training includes some public health and environmental medicine. Larger bases or bases with more complex missions or disease risks have flight surgeons assigned who are graduates of the residency in Aerospace Medicine.

Air Force public health officers may be veterinarians, nurses, or biomedical specialists. Many have a Master of Public Health degree, and all attend a 10-week course in public health and environmental health. They receive extensive training in all aspects of public health, including epidemiology, environmental sanitation, food safety, occupational health, and medical entomology. They are trained to conduct health threat assessments before deployments and disease surveillance during deployments.

Most medical facilities have several flight surgeons, two public health officers, and two bioenvironmental engineers. These officers, along with public health and environmental technicians, compose the PM team that manages all aspects of public health, occupational health, and environmental surveillance. Bioenvironmental engineers must possess a degree in engineering and attend a 3-month course at the School of Aerospace Medicine, with extensive training in water sanitation, pollution control, industrial hygiene, and occupational and environmental surveillance.

Deployed PM assets vary, depending on the size and type of the operation. Air Force squadrons on routine deployments are accompanied by a Squadron Medical Element, which provides basic medi-

cal and public health support. A typical Squadron Medical Element comprises a flight surgeon, an aeromedical technician (trained in basic medical care and administration), and a public health technician. It will be supplemented with an additional flight surgeon for prolonged deployments. These elements are not normally deployed for operations other than war. In those types of deployments (which include humanitarian crises, natural disasters, and peacekeeping operations), additional physicians, such as family practitioners, could be assigned. An Air Transportable Clinic (ATC) or an Air Transportable Hospital (ATH) are normally deployed for these operations. As training for these types of operations is limited, experienced flight surgeons and public health officers are deployed.

When wing-size organizations are deployed, an ATC is usually deployed. The ATC has basic medical care capability similar to a clinic and has PM assets. Flight surgeons, family practice physicians, and surgeons provide basic medical care, while flight surgeons and public health officers and technicians provide PM and public health expertise. Bioenvironmental engineers and technicians are responsible for water testing and sanitation, pollution control, and surveillance for and decontamination of nuclear, biological, and chemical contamination.

In organization- or theater-size deployments, an ATH is deployed. An ATH provides medical and surgical capability with minimal laboratory and radiological services. PM assets are similar to those of an ATC and include flight surgeons, public health officers, bioenvironmental engineers, and technicians. The flight surgeon is normally residency trained in Aerospace Medicine and has public health experience. Additional PM assets may be requested by the theater commander or theater surgeon.

Specialized PM assets exist at the Epidemiologic Research Division at Brooks Air Force Base. Normally these officers provide epidemiologic, public health, and travel medicine consultation to all Air Force medical treatment facilities and conduct disease surveillance for the Air Force. The Laboratory Services Branch of the Epidemiologic Research Division provides extensive reference laboratory services to Air Force facilities worldwide and extensive microbiology laboratory services to physicians during disease outbreak investigations.

The Epidemiologic Research Division can field two theater epidemiology teams to provide deployed Air Force units with health threat assessments, public health consultations, disease surveillance capability, and on-site disease outbreak investigations. Each team has one PM physician, one public health officer, and one public health technician. The team can be supplemented with an entomologist, a laboratory officer, or an infectious disease physician as needed.

PREVENTIVE MEDICINE IN THE US COAST GUARD AND OTHER FEDERAL AGENCIES

US Coast Guard

Although it is one of the five armed forces of the United States, during peacetime the US Coast Guard is an agency within the Department of Transportation. Coast Guard medical assets are limited and focus on primary care and support of operational requirements. Units deployed outside the United States during contingency operations generally rely on collocated DoD units for care beyond that which can be provided by an independent duty medical corpsman. Although PM is emphasized throughout the Coast Guard medical program, there is no formal PM structure. The Director of Health and Safety is responsible for the medical and safety programs and is the primary point of contact for any medical issues involving coordination with outside agencies.[12]

The Coast Guard endeavors to be the world's leading maritime humanitarian and safety service.[13] It is the smallest of the military services, consisting of approximately 37,000 active duty, 8,000 reserve, 6,000 civilian, and 36,000 auxiliary personnel in 1995.[14] The Coast Guard Reserve is organized into 51 groups and 311 units, which are controlled directly by the Commandant, US Coast Guard, through the headquarters operations and personnel directorates. In addition, there are nondrilling ready reservists who, as in the DoD, may be mobilized for domestic emergencies or military support operations, as well as national emergencies and war. The Coast Guard's four main missions are maritime law enforcement, maritime safety, environmental protection, and national security.

Most Coast Guard units are organized, trained, and equipped to perform more than one of those four main missions and cannot be neatly typed by function. While most units are armed, they are usually equipped with only small arms and defensive weapons and are not designed to operate independently in a high-threat environment. Because of its historic relationship with the Navy, the Coast Guard frequently trains and operates with naval units and

can be most easily integrated into the Navy's structure during contingencies.[15] Specific duties usually assigned to Coast Guard units participating in contingency operations are port safety and security, search and rescue, law enforcement (eg, interdiction of merchant vessels for contraband), and ensuring the safety and security of maritime commerce and transportation.

Forces most likely to work closely with DoD units during contingency operations include port security units (Figure 12-1) and visit and search teams, in addition to forces on cutters, patrol boats, and aircraft. Elements may be assigned individually to contingency operations or, more likely, they may be part of organized, larger joint harbor defense commands or composite naval coastal warfare units.

There are four methods under three legal authorities that may be used to place Coast Guard forces under DoD operational control: declaration of war [14 USC 3], presidential action [14 USC 3], assistance to other federal agencies [14 USC 141], and training and education [14 USC 144-145]. The President may direct by executive order that either the entire Coast Guard or part of it become a service in the Department of the Navy. The exact status of support for those forces would be negotiated at the time of the transfer. Under the statute allowing transfer for assistance to other federal agencies, the Secretary of Transportation may allow Coast Guard forces to work for the DoD when the Secretary of Defense so requests. Assignments are made for specific purposes and can be of unlimited duration. Return of forces is automatic when the purpose is ended, the DoD releases the forces, or the Department of Transportation revokes its consent.[15] Currently, there are two major field command, control, and support elements—Atlantic and Pacific Areas—each of which is subdivided into several districts. Operational units, such as cutters, small boat stations, air stations, and marine safety offices, report to their respective districts for tactical command and control.

Fig. 12-1. US Coast Guard members of a Port Security Unit are operating under the command and control of the US Navy in the Persian Gulf during the Persian Gulf War. Photograph: US Coast Guard.

The Coast Guard is extensively involved in stopping illegal immigration into the United States through alien migrant interdiction operations. During the summer of 1994, Coast Guard units involved in Operations Able Manner and Able Vigil intercepted 56,000 Haitian and Cuban boat people in the Caribbean Sea.[16] Boats containing alien migrants are often unseaworthy, overcrowded, and unsanitary (Figure 12-2). These operations may expose US personnel to foreign nationals and environments harboring communicable diseases. The Coast Guard has taken an active approach to controlling the health risks associated with alien migrant interdiction operations by such methods as education in sanitation practices, selective immunization and chemoprophylaxis, appropriate use of personal protective equipment, and operational policies.[17]

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is responsible for coordinating disaster assistance to states and territories; this assistance saves lives and protects public health, safety, and property. FEMA prepares the Federal Response Plan (FRP)[18] in compliance with the provisions of the Stafford Act.[19] The FRP is designed to address the consequences of any disaster or emergency situation in which there is a need for federal assistance. The FRP applies to natural disasters, technological emergencies (eg, hazardous material spills), and certain other incidents. During the period immediately following a disaster requiring a federal response, FEMA directs other federal agencies to identify requirements and mobilize and deploy resources to the affected area in accordance with the FRP.

The FRP outlines the organization and contains the responsibilities of the various federal agencies tasked to provide assistance in any of twelve emergency support functions: transportation, communications, public works and engineering, firefighting, information and planning, mass casualty care, resource support, health and medical services, urban search and rescue, hazardous materials, food, and energy. Under the current FRP, the DoD has primary responsibility in two areas, public works and engineering and urban search and rescue, but has supporting roles in all other areas.[20]

Fig. 12-2. This boat overcrowded with alien migrants is about to be boarded by Coast Guard personnel as part of its alien interdiction mission. Photograph: US Coast Guard.

US Public Health Service

The US Public Health Service is an agency within the Department of Health and Human Services that has the lead federal role in coordinating and ensuring public health and medical services during any federal disaster response.[21] The Public Health Service sponsors a number of Disaster Medical Assistance Teams across the country, as part of the National Disaster Medical System. Most of these are locally sponsored, community-based teams of approximately 35 civilian volunteers with skills and experience in both hospital and field emergency service. These teams can be rapidly mobilized, at which time the members temporarily become federal employees.[21] In addition to the local teams, the Public Health Service maintains a larger team (the PHS-1 DMAT), based in Washington, DC, which is mostly made up of officers of the Public Health Service Commissioned Corps. This team can rapidly deploy to disaster sites to provide both acute medical care and PM services, including basic field sanitation, water potability testing, and entomological assessments. The PHS-1 DMAT is generally the first medical disaster team to be sent to a federally declared disaster area when local resources have been overwhelmed.[22]

The Public Health Service Commissioned Corps is a uniformed, nonmilitary corps of more than 6,000 officers, including medical, dental, nursing, engineering, and sanitarian professionals. With the exception of the DoD and the Department of Veterans Affairs, federal agencies rely on the Public Health Service Commissioned Corps as a source of professional medical personnel and expertise. By law, this Commissioned Corps is a source of personnel to augment DoD health care activities in the United States and, on a limited basis, other activities during national emergencies.[23] The Corps is the only uniformed backup to the armed services that can be rapidly mobilized and ordered into areas of danger for indefinite periods of time. Since 1988, there has been a memorandum of understanding between the Public Health Service and the DoD outlining procedures for the mobilization and deployment of Public Health Service commissioned officers to the DoD, including emergency mobilization services.[24]

The Centers for Disease Control and Prevention (CDC) is another Public Health Service agency that has major responsibilities for preparing for and responding to public health emergencies, such as disasters, and for conducting investigations into the health effects and medical consequences of disasters.[25] It is also a source of epidemiologic and scientific support services and information, and it publishes numerous materials that can be useful for operational planning.[26,27]

THE RESERVE COMPONENTS

There are Reserve branches in all the military services: the Army Reserve (USAR), the Naval Reserve (USNR), the Marine Corps Reserve (USMCR), and the Air Force Reserve (USAFR). The Reserves are elements of and are directly controlled by the individual services, and their primary function is to augment and support the service in periods of war or other national emergency.

The Reserve components consist of the above elements and the two National Guards: the Army National Guard (ARNG) and the Air National Guard (ANG). Both are normally controlled by the states, with the governor of each state serving as the commander-in-chief of guardsmen in his or her state during peacetime. All 50 states, the District of Columbia, Guam, Puerto Rico, and the US Virgin Islands have National Guard units. The primary role of the Guard during peacetime, operating as a state agency, is to assist in natural or other disasters and to aid in the control of uprisings or civil disturbances. During wartime, the Guard can be federalized, becoming assets of the Army and Air Force. The National Guard can also be federalized during national emergencies and may come under the control of FEMA.

In any future military action, the medical assets, including PM units, of the various Reserve components will be mobilized and integrated into the active military forces. There are no PM units in the ARNG,

but there are two types of units in the USAR: sanitation detachments and entomology detachments, with about 10 of each currently in existence. Each detachment or team includes two officers and nine enlisted technicians and has its own transportation assets. These teams have the same primary missions as their active component counterparts.[28]

The Reserve force structure, including PM and other medical assets, is currently under review, and the structure and mission may change substantially in the future. It is anticipated that by 2001, the entomology and sanitation teams will be reconfigured as PM detachments, with one environmental science officer and one entomologist per team. Two enlisted technicians will be added, bringing team strength to 13. These new teams will have both environmental sanitation and entomology functions, as well as other general PM missions. New equipment will improve the mobility and communications capability of the detachments and will allow for real-time transmission of health and disease data. Approximately 16 teams will be assigned to the USAR.[29]

The Air Force, including its Reserve component, is also changing its PM structure. PM teams have been developed to be deployable at the wing level. These teams will likely be composed of a flight surgeon, a bioenvironmental engineer, a public health officer, and enlisted personnel (including public health, bioenvironmental, and emergency medical technicians). The role of this team will be to advise the wing commander on the health of the airmen, identify health threats and environmental and occupational hazards, evaluate general sanitation, approve food and water sources, direct the control of disease vectors, control communicable diseases, and perform disease surveillance and epidemiologic investigations of disease outbreaks. The force structure will be similar in active duty, USAFR, and ANG units, but the ANG may have additional PM and epidemiologic assets at the theater, base, and wing level.[30]

THE PREVENTIVE MEDICINE MISSION IN SPECIAL OPERATIONS

While Special Operations Forces (SOF) have played a role in US military operations throughout our nation's history, it was only during World War II that the concept and organization of SOF became more formally developed. The Office of Strategic Services was created to provide unconventional and psychological warfare capabilities at the strategic and tactical levels. The 1st Ranger Battalion, Alamo Scouts, 1st Marine Raider Regiment, Navy Combat Demolition Units and Underwater Demolition Teams, and the 885th Bomb Squadron are a few of the units in the services that provided specialized tactical support to conventional forces.

Until the 1980s, these forces were considered unconventional, outside of mainstream military operations. During the 1980s, SOF assets and capabilities became integrated into strategic and tactical planning and then established in individual service and joint doctrine. The US Special Operations Command (USSOCOM) was created on 16 April 1986, consisting of the Air Force Special Operations Command, the Naval Special Warfare Command, the US Army Special Operations Command (USASOC), and the Joint Special Operations Command[31] (Figure 12-3).

Missions

Primary SOF missions include Special Reconnaissance, Foreign Internal Defense, Direct Action, Unconventional Warfare, Combating Terrorism, Counterproliferation, Civil Affairs, Psychological Operations, and Information Warfare/Command and Control Warfare.[31] These missions frequently place the special operations servicemember under physical, mental, and environmental stresses not generally encountered by conventional forces. These stresses are compounded by isolation from conventional military support elements.

PM is involved in the success of SOF from selection and training through mission completion. Special medical fitness requirements ensure the SOF candidate is physically and mentally equipped to meet physical challenges and perform specialized duties, such as parachuting, flying, and scuba diving.[32] Environmental education and training ensures that SOF personnel understand the importance of field sanitation and hygiene and can operate in the extremes of heat, cold, and altitude. Missions frequently place SOF personnel in isolated areas in close contact with indigenous populations where diseases not seen in the United States are common. Under such conditions, susceptibility to endemic and epidemic disease is increased. SOF personnel are also often isolated from upper echelon medical care provided by conventional support units. PM issues that are critical to mission success include detailed disease and vector threat information, recommendations for special immunizations, chemoprophylaxis, special equipment (eg, individual water filters), and postmission disease surveillance.

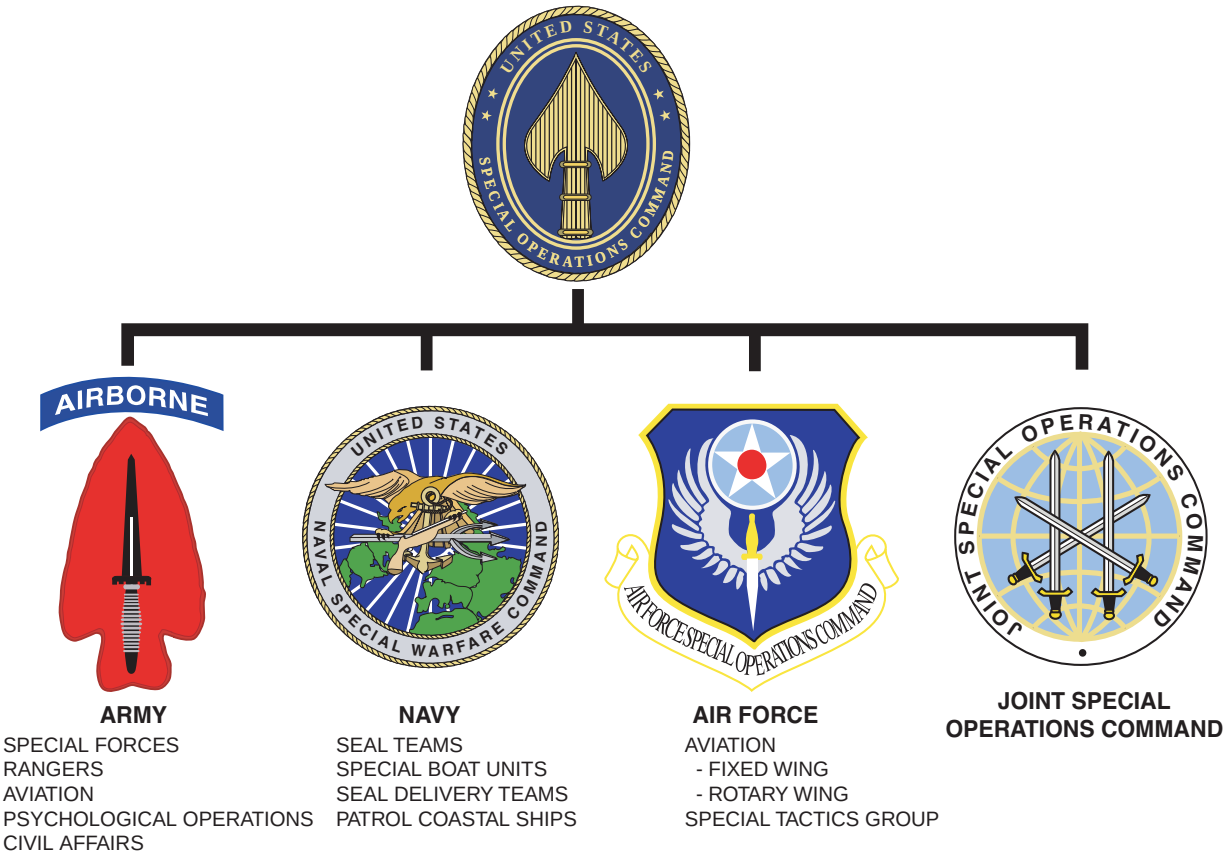


Fig. 12-3. The organization of the US Special Operations Command.
Source: US Special Operations Command. Special Operations in Peace and War. SOC: 1996.

Preventive Medicine Assets in Special Operations Forces

PM assets are found at all levels of command in SOF. At USSOCOM, a PM sciences officer coordinates PM planning and execution for the command surgeon. The Joint Special Operations Command Surgeon has a full-time PMO on staff. Due to its mission requirements for extensive operations in developing countries with tremendous disease threats, the Army's SOF command has more PM personnel than the other SOF commands. PMOs and NCOs are assigned to USASOC and the US Army Civil Affairs and Psychological Operations Command. Each Special Forces Group has an environmental science officer; Special Forces medics, highly trained in PM techniques, are organic to each group, battalion, company, and operational detachment. PM NCOs are assigned to the Special Forces battalions, the Special Operations Support Command, the Special Operations Medical Training Center, and the civil affairs units.

The Navy Special Warfare Command and the Air Force Special Operations Command have no dedicated PM specialists on staff. Navy Independent Duty Medical Technicians and Corpsmen (on duty with SEAL [Sea Air Land] teams and Special Boat Squadrons) and Air Force Pararescuemen are trained in basic PM techniques to support their missions.[33] Physicians and physician assistants serving as unit flight surgeons, diving medical officers, general medical officers, and in other similar positions provide limited PM expertise to support these NCOs.

Deployment Considerations

SOF mission planning and preparation must have a different focus than that of conventional forces. Since SOF have very limited organic medical assets, units place greater emphasis on preventing health problems and quickly addressing those that do develop. Intelligence preparation must be detailed and extensive, including the locations and capabilities of host-nation hospitals. Evacuation

routes must be coordinated, to include possible military transport from isolated countries. Unusual or investigational immunizations, along with an emphasis on personal protective measures and education, allow SOF to maintain a high posture of prevention against environmental and infectious disease threats.

Even with meticulous execution, preventive strategies can fail. SOF use post-deployment PM briefings to remind servicemembers about disease exposures, the need for continuing chemoprophylaxis, and actions to be taken should symptoms arise and to establish appropriate postdeployment surveillance systems in garrison. Illnesses can thus be diagnosed and treated in a timely fashion, with a high index of suspicion for exotic diseases.

THE PREVENTIVE MEDICINE MISSION IN CIVIL AFFAIRS

The need to deal effectively with a civilian populace in military operations has long been understood. According to US Army doctrine, the mission of Civil Affairs (CA) is to support the commander's relationship with civil authorities and the civilian populace, promote mission legitimacy, and enhance military effectiveness.[34] The first CA division was activated on March 1, 1943, in response to the anticipated demands of dealing with the civilian population of Europe during World War II. CA personnel had previously been under the purview of the Provost Marshal.[35] The end of the Cold War did not end conflict, though. CA has an important role to play during conflict and immediately after a conflict. However, CA has become actively involved in operations during peacetime to support national strategic objectives.

Mission and Role

The role of PM in CA is to alleviate human suffering among civilians in accordance with Article 56 of the Geneva Convention, prevent and control communicable disease that may impede military operations, and institute necessary health measures in the reconstruction of a country's public health program.[36] This role can be expanded based on the nature of the environment in which CA forces may be deployed. In a Foreign Internal Defense (FID) mission, the role of public health teams may be to provide individual or team advisors or provide assistance in the conduct of civic action projects. In peacetime, public health teams may be required to provide support operations and render humanitarian assistance. Public health specialists or teams in CA are often the coordinators and planners of action to accomplish the mission. CA units have a regional focus; they are often trained in languages specific to their region, and they understand the cultural complexities of their area of concern.[37]

The public health team has various responsibilities based on its mission. Generally, direct involvement in the provision of health services is not its mission except for the Foreign Internal Defense CA battalion. The team is best suited to provide guidance, assessments, and oversight. The actual rendering of recommended services or interventions requires effective coordination with medical assets from other US military units, the host nation, or donor agencies. Humanitarian assistance missions often involve other agencies outside of the DoD, such as the State Department, and they may be designated lead agent for a particular operation. CA personnel often find themselves working with personnel from the State Department and various United Nations organizations. In their delivery of public health services to a community, the CA units coordinate closely with agencies in country (eg, UN High Commissioner for Refugees, UN Development Program, US Agency for International Development, various non-governmental organizations) regarding any ongoing projects. Public health teams must ensure their activities are in support of national strategic objectives and in accordance with embassy guidance.

Capabilities and Structure

Only the Army and Marine Corps have CA units, and the vast majority (approximately 96%) are in the Reserves. Many of the personnel in the CA units perform jobs in their civilian life that directly enhance their ability to perform their CA mission. For example, a public health physician may work in their state health department as a civilian and then be the public health team leader in his or her CA unit. Although medical skills can be transferred to the civilian arena, this may not be the case in all of the 20 functional areas of CA expertise (Exhibit 12-2).[34] There are five CA commands or brigades in the Army, each of which is aligned with one of the five regionally oriented unified commands. Embedded within the CA structure are significant public health assets. The only physicians in the structure by doctrine are public health or preventive medicine specialists. In the RC, physicians trained in various specialties perform the role of a PM physician (Exhibit 12-3).

EXHIBIT 12-2

FUNCTIONAL SPECIALTIES IN CIVIL AFFAIRS

Government Section
- Civil defense
- Labor
- Legal
- Public administration
- Public education
- Public health
- Public safety
- Public welfare

Public Facilities Section
- Public communications
- Transportation
- Public works and utilities

Special Functions Section
- Arts, monuments, and archives
- Civil information
- Cultural affairs
- Dislocated civilians

Economic Section
- Civilian supply
- Economics and commerce
- Food and agriculture
- Property control

EXHIBIT 12-3

MEDICAL PERSONNEL IN CIVIL AFFAIRS (CA) UNITS

Medical Personnel at the CA Brigade Level

Government Team
- Public Health Physician (Team leader)
- Veterinarian
- Community Health Nurse
- Health Service Material Officer
- Environmental Science Officer
- Sanitary Engineer Officer

Public Health Team
- Public Health Physician (Team leader)
- Veterinarian
- Environmental Science Officer
- Sanitary Engineer Officer
- Medical NCO
- Professional Service NCO

Medical Personnel at the CA Battalion Level (Foreign Internal Defense/Unconventional Warfare)

Public Health Team
- Public Health Physician (Team leader)
- Veterinarian
- Field Medical Assistant
- Sanitary Engineer Officer
- Dental Officer
- Entomologist
- Medical Supply NCO
- Chief Dental NCO

Civic Action Team
- Veterinarian (Team leader)
- Environmental Science Officer
- Physician Assistant
- Emergency Treatment NCO
- Preventive Medicine NCO
- Animal Care NCO

Direct Support Team
- Medical NCO

Medical Personnel at the 96th CA Battalion Level (only CA unit on active duty)
- Public Health Physician (Team leader)
- Veterinarian
- Special Forces Medic (one per Tactical Support Team)

Deployment Considerations

Before deployment, PM personnel will need to perform a thorough mission analysis. CA units are expected to develop extensive country studies, which include the epidemiology of diseases in the area of operations and the health of the indigenous population. Other information of concern includes the medi-

cal capabilities of the country; the number, type, and location of non-government organizations in the area; and any unique cultural considerations in dealing with the indigenous population.

MANAGING PREVENTIVE MEDICINE ASSETS IN THE FIELD

To the casual observer, US military operations conducted in recent years may not appear to meet the common definition of *war*. In fact, each of these missions falls somewhere on the spectrum of operations between war at one end and peace at the other and are termed operations other than war. Humanitarian assistance and peacekeeping operations in Somalia and Haiti are examples, as are non-combatant evacuations, hostage rescues, raids, shows of force, and other operations short of war. The rules of engagement and the logistics required to support these operations change with the type of mission. The mission may change its focus and move from one category to another (eg, peacekeeping to raids). These types of operations tend to be multi-service or multinational, requiring coordination among supporting services and countries and thus increasing the logistical challenges. There are three core PM missions that support any of these operations: identification of all medical threats, development of countermeasures to those threats, and surveillance for diseases and injuries. To achieve success, each PMO must effectively manage the assets available, then provide the resulting PM information to the unit surgeon and elicit support from unit commanders.

Variables Influencing Management Structure

A number of factors must be considered when establishing an organizational structure for the effective utilization of PM assets. The size and geography of the area of operations will influence the distribution of PM personnel and equipment. The presence of a Theatre Army Medical Laboratory (TAML) or Forward Deployed Laboratory (FDL) and the specific PM specialties represented, such as entomology, influence the services that can be offered. These can be augmented by host-nation and contractor service agreements. The health status and demographic profile of the indigenous population, as well as that of coalition forces, may become important if the PMO is called on to use PM resources to support them. Finally, the facilities for eating, living, and sanitation for all populations supported may demand undue attention if they are not properly maintained. Often the PMO will have very limited authority over PM assets in theater but retain responsibility for the overall success of the PM mission in the eyes of the command. Consequently, negotiation skills, networking skills, and determination are invaluable. On arrival in theater, the PMO must rapidly assess the PM capabilities and materiel available and review the medical surveillance plan with personnel at each medical treatment facility.

Mission Planning Process

Regardless of the type of mission, the military follows a deliberate decision-making procedure to plan and direct the operation. Medical officers, and PM personnel in particular, must understand this system to have an impact when they address public health and general medical issues. Typically when a warning order or mission is received, the unit staff refers to the standing operational plan (OPLAN) for that particular situation and begins mission analysis, which is covered in some detail below. The staff then develops a specific mission and briefs this restated mission to the unit commander. After it is approved, the mission is used as the basis for the staff to develop several courses of action (COAs) to achieve the mission. During COA development, the staff analyzes, compares, and "wargames" each COA, finally deciding on one to recommend to the commander. When the commander approves the COA, the staff modifies the OPLAN, complete with specified, implied, and essential tasks for subordinate units to complete. This slow process is inadequate when staffs are responding to an emergency situation. Crisis action planning was developed to address this problem and is less complex and faster. Because of the imminent deadline for the OPLAN, the commander may work more closely with the staff, since they cannot afford the time to digress or consider many COAs. Consequently, the commander will probably forgo formal briefings and approve the results from the working sessions.[38]

Mission Analysis

During mission analysis, unit surgeons and PMOs must seize the opportunity to provide medical input into the OPLAN and its medical annex. To provide intelligent and cogent comments, medical personnel must assemble information from various sources, including the TAML and FDL staff sections at the unit headquarters. Copies of both the

warning order from the higher command and the commander's guidance should be kept in the Operations Section: S-3 at battalion and brigade, G-3 at division and corps, and J-3 at joint staffs. The Intelligence Section (S-2, G-2, or J-2 at the respective levels) develops the Intelligence Preparation of the Battlefield. This document analyzes the enemy's capabilities, weaknesses, and strengths, as well as the terrain, the weather, and other relevant factors, and it may include information from the Defense Intelligence Agency and the Central Intelligence Agency. The Operations Section will also develop the Concept of the Operation, based on the information from the intelligence staff and the commander's guidance. Medical personnel must be familiar with this document since it describes what the unit will do and what the medical assets will have to support. In a similar fashion, the Logistics Section (S-4, G-4, or J-4) will develop the Logistics Estimate, which describes what support, including medical, will be provided.[38,39]

To provide optimum service to the unit and commander, the PMO must work closely with the command surgeon and interact with the other staff elements. With the surgeon and the Personnel Section (S-1, G-1, or J-1), the PMO should help develop casualty estimates and reports with a DNBI emphasis, because rates of DNBI always exceed rates of combat injuries. Additionally, the PMO should review the plan for handling enemy prisoners of war and refugees from a disease control and public health perspective. The S-2, G-2, or J-2 is the source to answer questions from or research any intelligence requirements needed by medical and nonmedical planners about such issues as enemy medical care facilities and equipment, nuclear, biological, and chemical weapons types and capabilities, and weather projections to support aeromedical evacuation. Medical personnel must work very closely with unit support components to develop a good Service Support Annex to the OPLAN. The PMO in particular should review this document and can have a tremendous public health impact. The PMO can ensure the appropriate provision of field services, including such issues as food (ie, its selection, procurement, storage, preparation, and disposal), water (adequate amounts and safe), laundry, graves registration, and hazardous waste disposal.[2,39]

As a part of the Service Support Annex, the Surgeon's Office should write Annex Q, Health Service Support. This document should have several sections, including one on PM (an example of which can be seen in Chapter 13, Preventive Medicine and the Operation Plan). The PM portion should emphasize DNBI and public health by including recommended countermeasures to the threat, estimates of the impact of DNBI on combat power, information on educating servicemembers and commanders, immunization and chemoprophylaxis recommendations, outbreak investigation guidance, and occupational and environmental health requirements. The Logistics portion of Annex Q should address whether the Army will be the Class VIII (medical supply) source for the DoD, as is usually the case; the support relationships between medical units and their associated line units; the use, source, safety, and transport of blood; and whether or not coalition partners will use combined logistics, in which the US bears a disproportionately large burden of support, or national logistics, in which each country supports itself. Annex Q should also discuss veterinary services such as food supply inspection and zoonoses, which are also of interest to the PMO.

PMOs may interact with clinicians when reviewing casualty reports and conducting epidemiological investigations of disease outbreaks. Of particular interest must be the reports of nuclear, biological, or chemical weapons casualties, since the PMO may be the local "expert" for medical issues regarding weapons of mass destruction. Clinicians and PM personnel in subordinate units will need to know the level of medical support available, so the location and diagnostic capability of supporting laboratories must be included in Annex Q, as well as the locations and support relationships of combat stress control teams. Finally, subordinate PM units must know the identity and location of their next higher echelon of medical support for additional PM expertise, medical supply, and similar issues.[3]

Preventive Medicine Assets in Joint Operations

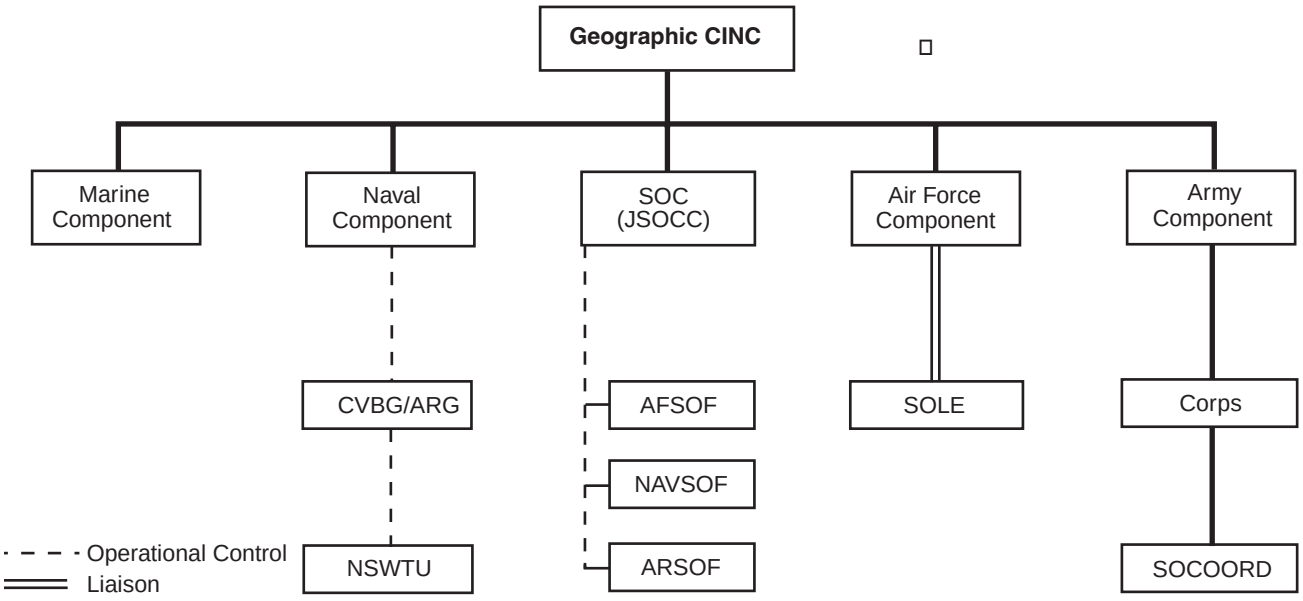
The JTF commander does not have ultimate authority over joint operations. That responsibility rests with the Commander-in-Chief (CINC) for that geographical portion of the worldwide system of unified commands, such as the Southern Command (Figure 12-4). The CINC, in turn, answers to the National Command Authority in the person of the Secretary of Defense or the President. For a specific or limited purpose, the CINC, as combatant commander, will relinquish operational control of various forces of any service under his control to the JTF commander, who is often from a different service[38] (Figure 12-5). With operational control, the JTF commander can control the events in the entire area of operations.

The PMO in the JTF functions just as he or she would in a single service force, except that requirements and resources of all services must be considered and coordinated (Figure 12-6). For example, the

Marines Corps, unlike the Army, has no dedicated medical evacuation helicopters and must request this support from other services. And Air Force involvement in an operation can make it easier to obtain a Mobile Aeromedical Staging Facility to hold and process casualties for fixed-wing evacuation.[2]

Preventive Medicine Assets in Unified Commands

The role of the PMO at the unified command is broad in scope and deep in responsibility; it is also extremely vital to the unified commander and the surgeon in both peace and war. Each geographic CINC is a combatant commander with a broad, continuing mission and significant components from two or more services. The CINC also has the responsibility for coordinating and integrating health service support within the theater of operation and exercising this responsibility directly through the unified command surgeon. The surgeon's joint staff must coordinate medical initiatives, solutions to regional medical issues, standardized approaches to national issues, and interoperability, and the health service support plans and operations of subordinate units. The surgeon's office must be able to assess the health service support requirements and capabilities of component commands and provide guidance to enhance their effectiveness. Each unified command surgeon should have a PMO on staff whose primary function is to address the medical threats in the entire theater of operations. Similar to PMOs at other levels of command, he or she then promulgates recommended policies and countermeasures to obviate or mitigate those threats, monitors the health of deployed forces through an established surveillance mechanism, and modifies and updates policies and countermeasures based on ever-changing intelligence and surveillance data. An asset that must be employed early in operations is the TAML, which is designed to operate directly for the theater surgeon. This asset provides the theater surgeon a rapid diagnostic capability to monitor the health of the force and identify biological or chemical threats early. At the unified command level, the impact of medical threats as contributing factors to social, political, and economic stability in both peace and other operational environments



SOC: Special Operations Command
JSOCC: Joint Special Operations Component Commander
CVBG/ARG: Carrier Battle Group/Amphibious Ready Group
AFSOF: Air Force Special Operations Command
NAVSOF: Navy Special Operations Command
ARSOF: Army Special Operations Command
SOCOORD: Special Operations Coordination Element
SOLE: Special Operations Liaison Element
NSWTU: Naval Special Warfare Task Unit

Fig. 12-4. The Geographic Commanders in Chief Special Operating Forces with Integrating Elements. Source: US Special Operations Command. *Special Operations in Peace and War*. SOC: 1996.

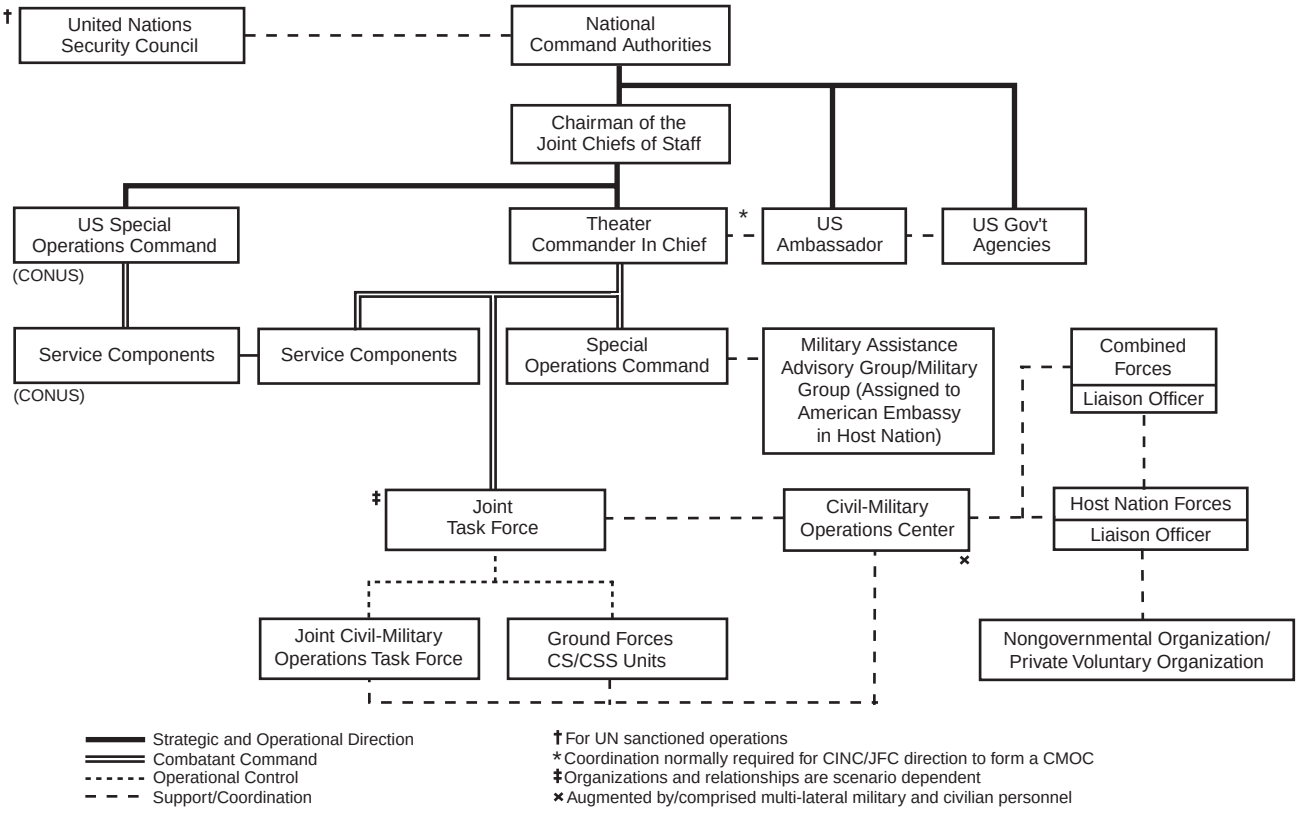


Fig. 12-5. The Organization of a Joint Task Force.
Source: US Special Operations Command. *Special Operations in Peace and War*. SOC: 1996.

must be considered. In addition to the traditional threat assessment, then, the PMO must attempt to determine the adequacy of the health infrastructure in the various countries in the theater and, in collaboration with civil affairs teams and the respective ministries of health, may be called on to make appropriate recommendations for ameliorating these deficiencies under unstable conditions.

Preventive Medicine Assets in Combined Operations

A combined task force, frequently referred to as a multinational force, consists of the forces of two or more nations acting together for the accomplishment of a single mission, and it may be organized from an alliance or coalition of nations. An alliance is the product of a longstanding, formalized agreement among political, diplomatic, and military officials. It offers the advantage of time for planners to adopt uniform warfighting (including PM) doctrine and standards among participating nations. Member nations of the North Atlantic Treaty Organization have worked for decades on developing many of the standarization agreements (known as STANAGS) now in effect. Implementing PM countermeasures and conducting medical surveillance in a combined task force derived from a coalition presents the most difficult challenge in military PM. Coalitions are less formal, ad hoc agreements among nations organized to meet short-term objectives.[38] In 1990, President Bush spearheaded a coalition that contributed to the combined force that removed the Iraqi Army from Kuwait. Before arriving in the theater of operations, contingents had no time to agree on standard procedures.

In US operations in the 1990s, including the Persian Gulf War and missions in Haiti and Bosnia, the United States participated in combined operations with forces from allies and other friendly countries. This added many layers of complexity to an already massive PM undertaking. Additional countries bring additional cultures and languages and different military training, doctrine, equipment, and objectives. Participating nations may have very limited health services support doctrine or capability, particularly

in PM issues. Attitudes about staying healthy and patient care may differ markedly among the national components of a combined force. In other cases, force elements may share doctrine and cultural attitudes but lack essential resources. Health services support planning also may be influenced by the nationality of the combined force commander or the combined force medical authority. For these and other reasons, provision of health services support typically remains a national, not a combined, responsibility.

Most military forces of the world depend on domestic civilian resources for all aspects of their health care. These forces typically are not strategic and rarely deploy beyond their borders unless assisted. Therefore, military personnel from these countries are unlikely to encounter exotic health threats with any greater frequency than the civilian population they come from. Consequently, the military organizations of most countries lack an organized PM capability. Only those countries, such as the United States, Canada, and France, that routinely deploy strategic ground forces beyond their borders are likely to have developed military PM doctrine. In combined operations, the obvious implication of this situation is that the responsibility for military PM operations falls to the country fielding the capability. If any part of the force lacks the capability to employ PM countermeasures or rejects employing them for cultural reasons, the public health threat to the entire force increases. The keys to success of combined operations are trust and teamwork.

Compared to joint operations, assessing the

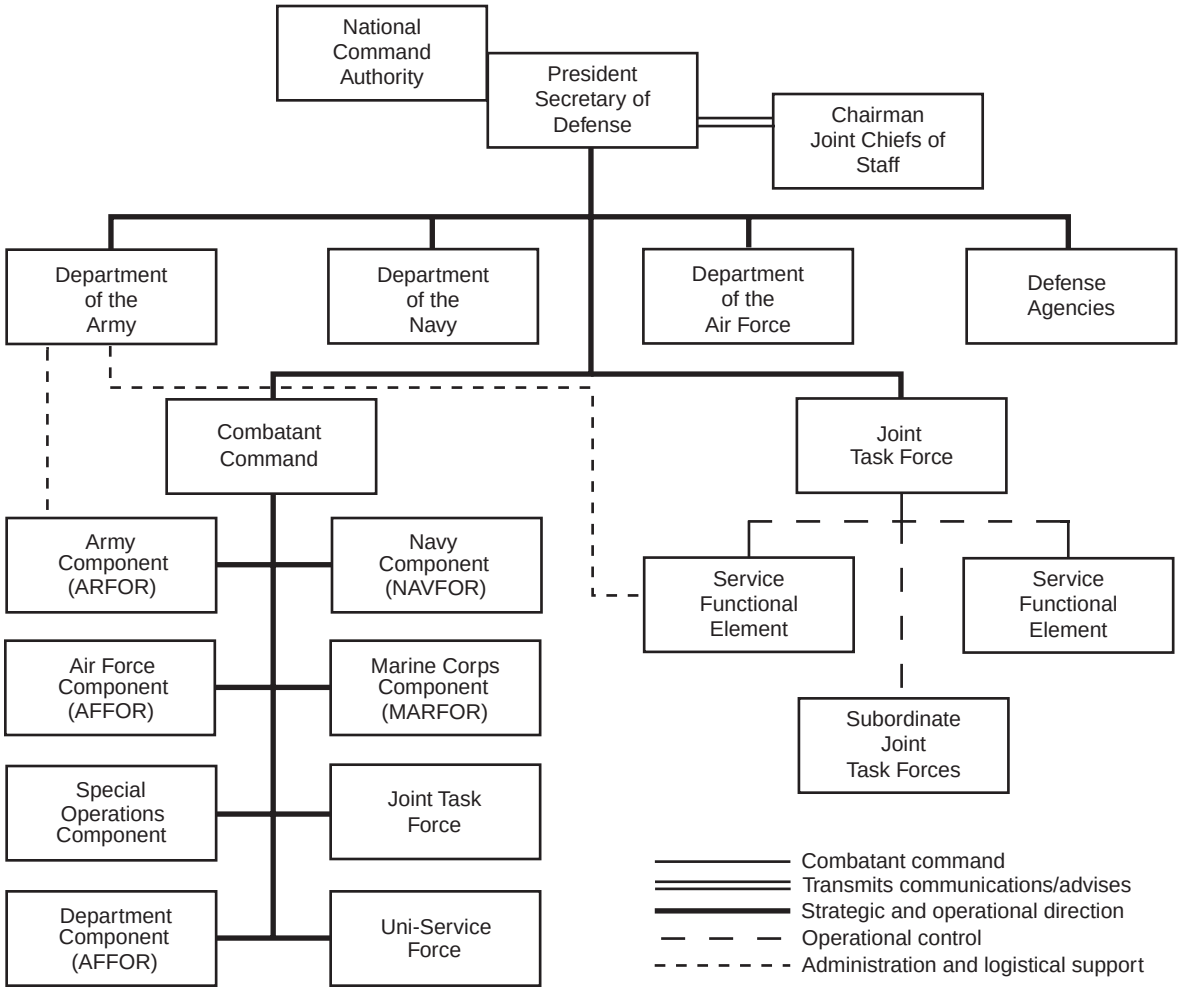


Fig. 12-6. Joint Task Force Relationships.
Source: US Department of the Army. *Operations*. Washington, DC: DA; 1993. Field Manual 100-5.

health threat in combined operations is more complicated because the health status among the combined force lacks homogeneity. However, each participating contingent joins the combined force healthy by its own set of deployability standards and shares a unique disease exposure and immunization history. Servicemembers may join a combined force harboring active infections endemic to their country of origin but exotic to other contingents of the force. For example, the exposure experience to hepatitis or Japanese encephalitis among Thai soldiers is greater than that of their US or Canadian counterparts.

In combined operations, medical surveillance techniques and procedures are limited to North Atlantic Treaty Organization alliance forces. Agreement among contingent forces on conducting medical surveillance is unlikely until the operation is weeks old. Consequently, useful medical surveillance of the combined force during the most critical early phase of an operation is unlikely. Except in those contingents with the most sophisticated PM capability, environmental survey and lab support capability will not be available.

SUMMARY

For the PMO or other health services planner to understand how to properly plan and execute PM services on deployments, it is essential to appreciate the big picture of military preventive medicine. This chapter has reviewed the process of PM policy development from the strategic JCS level to the operational JTF level to the tactical field unit. Although there are unique aspects to PM among the different US military services and these must be anticipated in the planning of any joint operation, there are additional considerations in providing PM support to government agencies or to operations with units from the Reserve Component, combined forces, Civil Affairs, or Special Operations Forces. With an understanding of these differences and an appreciation of the intricacies and complexities of military planning and operations, PM personnel can provide great benefit in conserving the fighting strength for their unit or command.

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