CHAPTER 11

PREVENTIVE MEDICINE SERVICES

Section I. THE MEDICAL THREAT

11-1. The Preventive Medicine Mission

Preventive medicine is the most effective, least expensive means of providing the combat commander with the maximum number of healthy, combat-effective soldiers.

11-2. The Medical Threat

a. Historically more soldiers have been rendered noneffective from DNB1 than from injury received as a direct result of conflict. In most US conflicts, three times as many soldiers have been lost to DNB1 than to enemy action. Although disease is no longer expected to be the major cause of death in combat areas, it still accounts for the vast majority of combat noneffectiveness.

b. In past conflicts, preventable diseases have severely tiected combat operations, Among the diseases historically impacting combat operations are diseases transmitted by arthropods (malaria, dengue, and typhus) and diseases associated with poor sanitation and personal hygiene (hepatitis, cholera, typhoid, and dysentery). Preventable nonbattle injuries (cold and heat injuries) have also adversely impacted upon past combat operations. At certain times, the occurrence of preventable diseases and nonbattle injuries has rendered major units combat noneffective.

11-3. Categories of the Medical Threat

Disease and nonbattle injuries account for the vast majority of combat noneffectiveness. The militarily significant DNBI can be reduced to the following broad categories:

a. Heat injuries caused by heat stress and insufficient water consumption.

b. Cold injuries caused by combinations of low temperatures, wind, and wetness.

c. Diseases caused by arthropod/animal bites or environmental conditions.

d. Diarrheal diseases caused by—

- Drinking contaminated water.
- Ž Eating contaminated foods.
- Not practicing good individual and unit PVNTMED measures.

e. Diseases, trauma, or injuries caused by physical or mental unfitness.

f. Occupational injuries caused by carbon monoxide, noise, blast overpressure, and solvents.

g. Disease resulting from altitude exposure at high terrestrial elevations.

11-4. The Medical Threat and the Military

Because of the mobility and dispersion of modern fighting forces, individual soldiers and small units must take action to protect themselves against the medical threat. Health service support planners must work closely with PVNTMED personnel who can provide assistance in identifying general and AOR-specific health threats and the appropriate PVNTMED measures to counter

them. In all instances, key PVNTMED assets should be deployed early in order to begin countering and monitoring the health threats. They must coordinate with logistical elements of the force to ensure that adequate supplies of materials are available to counter the medical threat. Specific examples are the provision of—

• Large amounts of water to combat the threat of heat injury and provide for personal hygiene. Joint planning factors indicate that as much as 20 gallons per man per day will be required during operations in hot weather environments. Medical units will require additional amounts of water for patient care activities.

• Adequate changes of socks and clothing to prevent cold injuries caused by wet clothing.

• Skin and clothing application insect repellents, aerosol insecticides, and bed nets for the individual; and pesticides and associated equipment for field sanitation teams and PVNTMED units to prevent arthropod-borne disease.

• Iodine tablets and calcium hypochlorite to maintain water potability.

Ž Adequate fresh air ventilation in confined vehicles and in maintenance and sleeping areas. Proper ventilation prevents carbon monoxide poisoning and possible death.

• Adequate hearing protection to ensure no immediate hearing loss by impact noise and to decrease the amount of temporary hearing threshold shift, which affects the soldier's ability to discriminate combat significant sounds.

Ž Adequate vision protection to prevent traumatic eye injury from DE weapons and sighting devices, secondary projectiles, and accidental blunt trauma.

11-5. The Individual Soldier and the Medical Threat

The individual soldier must initiate PVNTMED measures such as—

a. Protection against heat by—

• Drinking sufficient amounts of water at frequent intervals.

Ž Using the correct work.best cycle as directed by his leader.

• Eating all meals to replace salt.

Ž Recognizing the risk associated with wearing of MOPP clothing, body armor, or when operating inside armored vehicles.

• Modifying the uniform as directed/authorized by the commander.

b. Protection against cold weather by—

Ž Drinking plenty of water to replace loss of fluids during periods of strenuous exercise.

• Wearing uniform in loose layers to retain body heat.

• Washing the feet daily and keeping them dry by changing socks several times a day.

Ž Keeping the body warm by exercising the trunk and limbs. Exercising feet, hands, and face to increase circulation.

• Using care when handling fuels.

• Avoiding skin contact to cold metal in cold climates.

c. Protection against biting arthropods by—

Ž Using uniform as a barrier.

Ž Using insect repellent on exposed skin.

Ž Taking antimalarial pills or tablets or other chemoprophylaxis as prescribed.

• Using a bed net.

• Maintaining good personal hygiene.

• Keeping uniform clean.

• Using clothing application insect repellent on battle-dress uniforms.

d. Taking precautions to prevent diarrhea by—

Not buying food, drink, or ice from civilian vendors unless approved by command authority.

Using treated water. When not available, treating water by using iodine tablets, chlorine ampules, or other approved disinfectants, and as a last resort by boiling it.

• Washing hands.

• Washing food utensils.

• Burying waste.

e. Maintaining physical and mental fitness by—

• Exercising.

Ž Preventing skin infections by practicing good personal hygiene and washing the body as often as possible.

• Preventing dental disease. (See Chapter 9.)

Ž Preventing genital and urinary tract infections. (See FM 21-10.)

• Practicing sleep/rest discipline.

• Improving resistance to stress. (See Chapter 12.)

f. Preventing injury by—

Ž Ensuring adequate ventilation while in closed spaces such as when firing weapons inside a personnel carrier.

• Wearing hearing protection while associated with source of noise (that is, aircraft, tactical vehicles, and all calibers of weapons).

• Wearing eye protection when potentially exposed to sources of traumatic injury such as DE sighting devices and weapons, secondary projectiles, and accidental blunt trauma.

g. Taking precautions to prevent diseases and illnesses as deemed appropriate by the medical threat.

11-6. The Small Unit Commander and the Medical Threat

a. The small unit commander can reduce the medical threat to companies, troops, batteries, and small detachments by initiating and enforcing measures beyond the capability of the individual. As a minimum, the unit commander will—

Ž Assess the medical threat and its potential impact on the mission.

Ž Appoint, equip, and train a unit field sanitation team to provide advice on the implementation of PVNTMED measures. Organic or attached medical personnel will be used to compose the unit field sanitation team according to AR 40-5. If medical personnel are not available, appointed team members will be trained by supporting PVNTMED assets. See FM 21-10, FM 21-10-1, and the AMEDD exportable field sanitation training module.

Ž Incorporate PVNTMED measures into the unit SOP.

• Maintain adequate PVNTMED supply levels.

Ž Maintain immunizations and prophylaxes to preserve health and prevent the spread of disease.

• Motivate subordinates to practice PVNTMED measures.

• Enforce PVNTMED practices; for example—

• Bury or burn waste to prevent rodent and arthropod harborages and breeding sites.

• Obtain food from approved sources.

Ž Prevent food contamination during storage and preparation.

• Ensure the consumption of adequate quantities of food and water.

Ž Initiate control measures recommended by PVNTMED personnel to reduce disease vectors.

Ž Ensure that continuous medical surveillance for selected health threats of PVNTMED importance is accomplished and reported to higher headquarters routinely.

b. The small unit commander can motivate subordinates to practice PVNTMED measures by—

(1) Tasking the company headquarters to—

Ž Obtain potable water in adequate amounts only from approved sources.

• Obtain antimalarial pills or tablets or other required chemoprophylaxis from medical personnel and enforce consumption of these pills or tablets as prescribed.

Ž Utilize field laundry facilities to ensure clean uniforms.

Ž Identify carbon monoxide exposure areas.

Ž Provide adequate quantities of eye and hearing protection where required.

(2) Tasking the field sanitation team to—

• Perform sanitation duties as specified by the unit SOP.

Ž Check the unit's water containers for adequate amount of chlorine, and disinfect the water if necessary.

• Monitor the accomplishment of PVNTMED measures.

• Control arthropod and rodents in unit areas.

(3) Requiring subordinate leaders, field sanitation team personnel, and soldiers to report potential problems on PVNTMED concerns in a timely manner.

(4) Tasking the platoon leaders to—

- Enforce an acclimatization period before engaging in activities.

Ž Enforce water consumption and work/rest cycles.

- Provide areas for relief from the heat or cold.

- Ensure proper construction and maintenance of latrines and urinals.

- Ensure proper construction of handwashing devices and showers.

- Enforce the use of individual PVNTMED measures among their troops.

Ž Ensure proper ventilation to protect soldiers from carbon monoxide asphyxiation.

Ž Enforce use of hearing and eye protection among troops.

- Enforce sleep discipline.

(5) Tasking assigned medical personnel to conduct medical surveillance and report significant medical events through the chain of command to higher headquarters.

11-7. Echelon II Preventive Medicine Support

The Echelon II PVNTMED sections of the divisions, separate brigades, and ACRs are responsible for—

- Assessing the medical threat and determining PVNTMED measures.

- Advising commanders and staffs of PVNTMED requirements.

Ž Coordinating with logistical elements for required support of PVNTMED materials.

Ž Training, monitoring, and providing technical assistance to unit field sanitation teams.

- Monitoring the training of all individuals in personal PVNTMED measures.

- Conducting surveys, inspections, and control activities.

Ž Conducting and coordinating the medical surveillance for selected diseases of PVNTMED importance; compiling and reporting data to higher headquarters; and investigating significant medical occurrences.

Although the composition of these PVNTMED elements are specified by the TOE, they may be tailor-made to provide selected PVNTMED expertise to investigate and provide solutions to significant PVNTMED problems/issues by augmenting or changing the officer expertise available. For example, for disease outbreak investigations, community health nurses, or additional PVNTMED officers maybe added at any level to assist in the investigation. Likewise, nuclear science officers maybe added to investigate radiation problems such as nuclear contamination of food/water supplies.

11-8. Echelons III and IV Preventive Medicine Support

At Echelons III and IV, additional PVNTMED support is provided by small, mobile PVNTMED

detachments; the PVNTMED section organic to the ASMB; elements from the AML, and PVNTMED staff sections at the medical brigade/ group level. Augmentation of Echelons III and IV PVNTMED assets will be determined at the appropriate command level based on mission requirements.

a. Preventive Medicine Detachments. There are two detachments which usually provide PVNTMED support within the corps/COMMZ on an area basis; however, they can operate in divisional rear areas to supplement division PVNTMED capabilities. In addition, some detachments may be assigned to support specific needs which present potentially significant disease threats to combat forces such as EPW camps and refugee relocation centers.

(1) *Medical detachment, preventive medicine (entomology),* TOE 08-499L000. The mission of this unit is to provide PVNTMED support and consultation in the areas of entomology, DNBI prevention, field sanitation, sanitary engineering and epidemiology to minimize the effects of vectorborne diseases, enteric diseases, environmental injuries, and other health threats on deployed forces in the CZ and COMMZ.

(a) Assignment. This unit is assigned to a medical brigade or a medical group, and normally attached to an ASMB.

(b) Capabilities. This unit—

Ž Provides surveillance and control of disease vectors and reservoirs in assigned areas, to include area and aerial spraying.

• Monitors pest management, field sanitation, water treatment and storage, waste disposal, and DNBI control practices of units in assigned areas. Provides advice and training as necessary.

• Investigates and evaluates pest management, sanitation, water supply, and waste disposal practices; and other environmental health-related problems. Recommends corrective measures as necessary.

• Conducts medical surveillance activities in the AOR, to include coordinating, compiling, analyzing, and reporting medical surveillance data to assist in evaluating conditions affecting the health of the supported force.

• Conducts epidemiological investigations.

• Collects environmental samples and specimens and performs selected analyses or evaluations to assist in assessment of the medical threat.

• Coordinates NBC-related biological specimen collection and evaluation with treatment, NBC, laboratory, and intelligence personnel. (See FM 34-54.)

• Divides into three teams, as necessary, to perform assigned missions.

Ž Monitors casualties, hospital admissions, and reports of autopsy for signs of chemical or biological warfare agent use.

(c) Basis of allocations. One unit is allocated per 45,000 personnel and one per 100,000 EPW.

(d) Mobility. This unit requires 100 percent of its TOE and supplies to be transported in a single lift using its authorized organic vehicles.

(2) *Medical detachment, preventive medicine (sanitation),* TOE 08-498L000. The mission of this unit is to provide PVNTMED

support and consultation in the areas of DNBI prevention, field sanitation, entomology, sanitary engineering, and epidemiology to minimize the effects of environmental injuries, enteric diseases, vectorborne disease, and other health threats on deployed forces in the theater.

(a) Assignment. This unit is assigned to a medical brigade, TOE 08-422L000, or a medical group, TOE 08-432 L000. It is normally attached to an ASMB, TOE 08-455 L000, or other medical units.

(b) Capabilities. The capabilities of this unit are similar to those of the Medical Detachment, Preventive Medicine (Entomology) with the exception of area and aerial spraying and mass delousing.

(c) Basis of allocation. One unit is allocated per 22,500 personnel and one per 50,000 EPW.

(d) Mobility.

1. This unit is capable of transporting 12,000 pounds (882.0 cubic feet) of TOE equipment with organic vehicles.

2. This unit has 4,366 pounds (244.4 cubic feet) of TOE equipment requiring transportation.

3. This unit requires 100 percent of its TOE equipment and supplies to be transported in a single lift using its authorized organic vehicles.

b. Preventive Medicine Section, Medical Battalion, Area Support. Preventive medicine support is also provided by the PVNTMED section of the medical battalion, area support. The medical battalion, area support, includes a PVNTMED section which is capable of providing PVNTMED support and advice similar to that described above for the PVNTMED detachment (sanitation). It can be augmented by PVNTMED detachments.

(1) The staffing of this section permits it to have a more extensive capability than the PVNTMED detachments in epidemiological (infectious disease) investigations and sanitary engineering support. The PVNTMED section will ensure that continuous medical surveillance in the AO for selected health threats of PVNTMED importance is accomplished and that data is compiled, analyzed, and reported to higher headquarters on a routine basis. Support provided by this section in these areas is in coordination with PVNTMED detachments and other medical or nonmedical units within the medical battalion, area support.

(2) As PVNTMED detachments are normally attached to a medical battalion, area support, this section assumes technical supervision of the attached detachments to coordinate assignment of specific missions. Preventive medicine detachments are attached to, rather than being organic to, the ASMB.

c. Area Medical Laboratory Preventive Medicine Support. Chapter 7 provides a discussion on the AML. The emphasis of the AML is on evaluation of the total health environment in the TO. The AML provides support for PVNTMED operations primarily in the areas of epidemiological (infectious disease) investigations, entomological laboratory analysis, radiation protection/ analysis, sanitary engineering, and industrial hygiene. It has the following related capabilities:

(1) To analyze and evaluate food, drinking water, and waste water samples.

(2) To identify pests and assess the efficacy of pesticides.

(3) To receive, compile, and analyze theaterwide medical surveillance data and determine disease and other health threat trends

to minimize the effect of DNBI on mission accomplishment.

(4) To determine the frequency and distribution of infectious agents and disease.

(5) To provide related consultative services.

11-9. Command and Control

a. Command and control of PVNTMED operations is characterized by centralized command at the medical group/brigade and decentralized operations through attachment of PVNTMED assets to supported units. This provides the medical commander the flexibility to tailor PVNTMED support to meet specific mission requirements. For example, a disease-related threat may be greater in areas where there are large troop concentrations (embarkation and debarkation marshaling areas) and unit PVNTMED measures are not adequately being applied or enforced. Hence, such areas may require additional PVNTMED support although requirements for other HSS may not be very significant.

b. Typical command and control relationships for PVNTMED detachments/elements are shown in Figure 11-1.

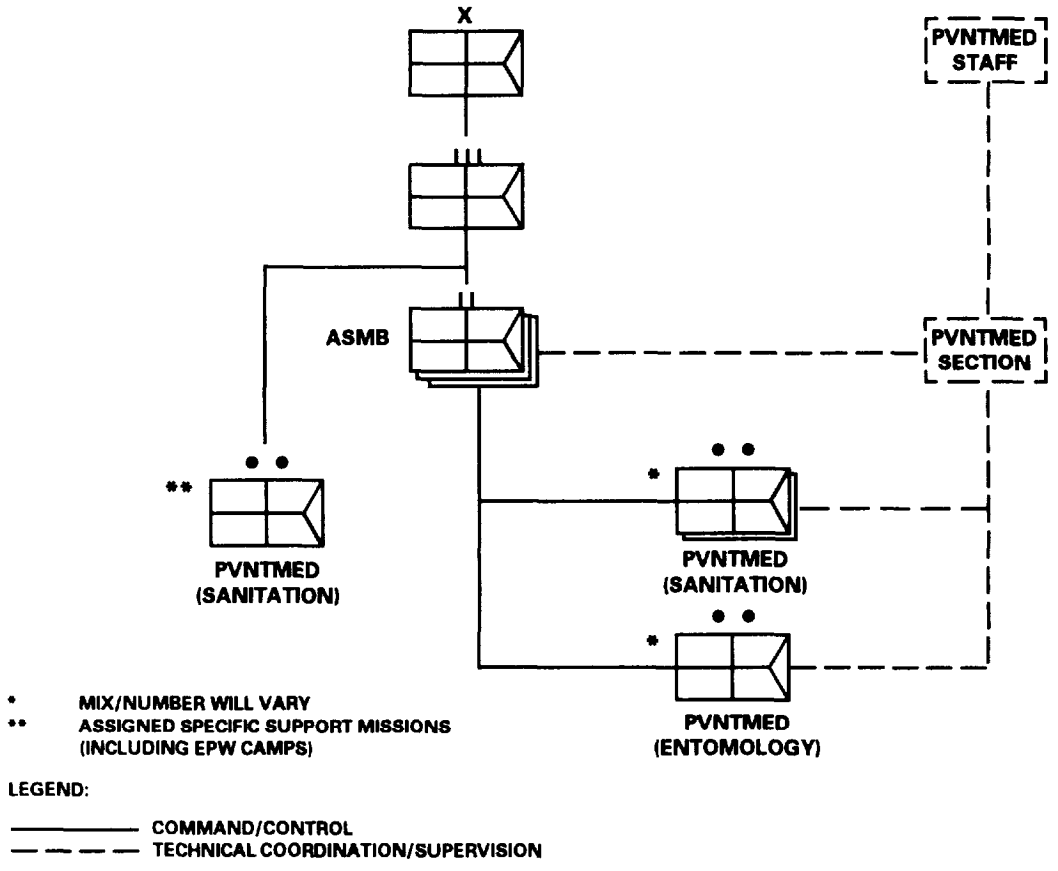

Figure 11-1. Command and control, preventive medicine.

(1) The medical group/brigade's PVNTMED staff advises the commander on the effective use of assigned PVNTMED assets and on any augmentation of these assets as deemed necessary. In addition, the staff establishes PVNTMED policies and provides technical advice to assigned units.

(2) preventive medicine detach. ments are normally attached to an ASMB to provide PVNTMED support on an area basis within the ASMB assigned in the AO. The ASMB PVNTMED staff advises the ASMB commander on the required additional PVNTMED support within the ASMB AO and allocates geographical AORS to the attached PVNTMED detachments. The staff is the technical link between the medical group/brigade and detachments for technical coordination of PVNTMED-related requirements, problems, and issues. Figure 11-2 illustrates a typical laydown of PVNTMED support in the Corps/COMMZ.

(3) preventive medicine detachments that are assigned specific support missions (EPW or refugee relocation centers) will likely remain under the direct control of the medical group and be attached to the support unit (military police or EPW unit) for administrative and logistical purposes only.

11-10. Operational Concept

Preventive medicine personnel must be prepared to follow an aggressive plan of action characterized by—

a. Preemptive Action. Preventive medicine personnel must take preemptive action. Tasks will be initiated on presumptive information to reduce or eliminate the medical threat before it can manifest itself.

Example 1: Suppress mosquitoes near troop assembly areas without waiting for laboratory confirmation that the mosquitoes are vectoring disease.

Example 2: Brief commanders on the potential for and effects of adequate sanitation in their unit area before the first case of diarrhea appears.

Example 3: Suppress arthropod vectors along routes of march in advance troop movements.

Example 4: Brief commanders on the results of inadequate protection from carbon monoxide, eye or ear injuries, and safety hazards.

b. Priority to Combat Elements. Generally, soldiers deployed for action have an increased vulnerability to the medical threat. Tactical dispersion places them largely on their own, using PVNTMED measures against the medical threat. Preventive medicine personnel will find many occasions when the tactical situation will permit them to provide support to eliminate the medical threat. Preventive medicine personnel must seek such opportunities and give priority to combat elements.

Example: When given the choice to check the water point of a mechanized infantry unit defending an area along a river or to check the dining facility sanitation at the division finance company, priority of support will be given to the mechanized infantry unit.

11-11. Coordination

Preventive medicine resources are the eyes and ears of the unit commander in identifying and evaluating the medical threats. Without the ability to coordinate with unit commanders, staff agencies, and commanders of line and support units, the medical threat will go uncorrected.

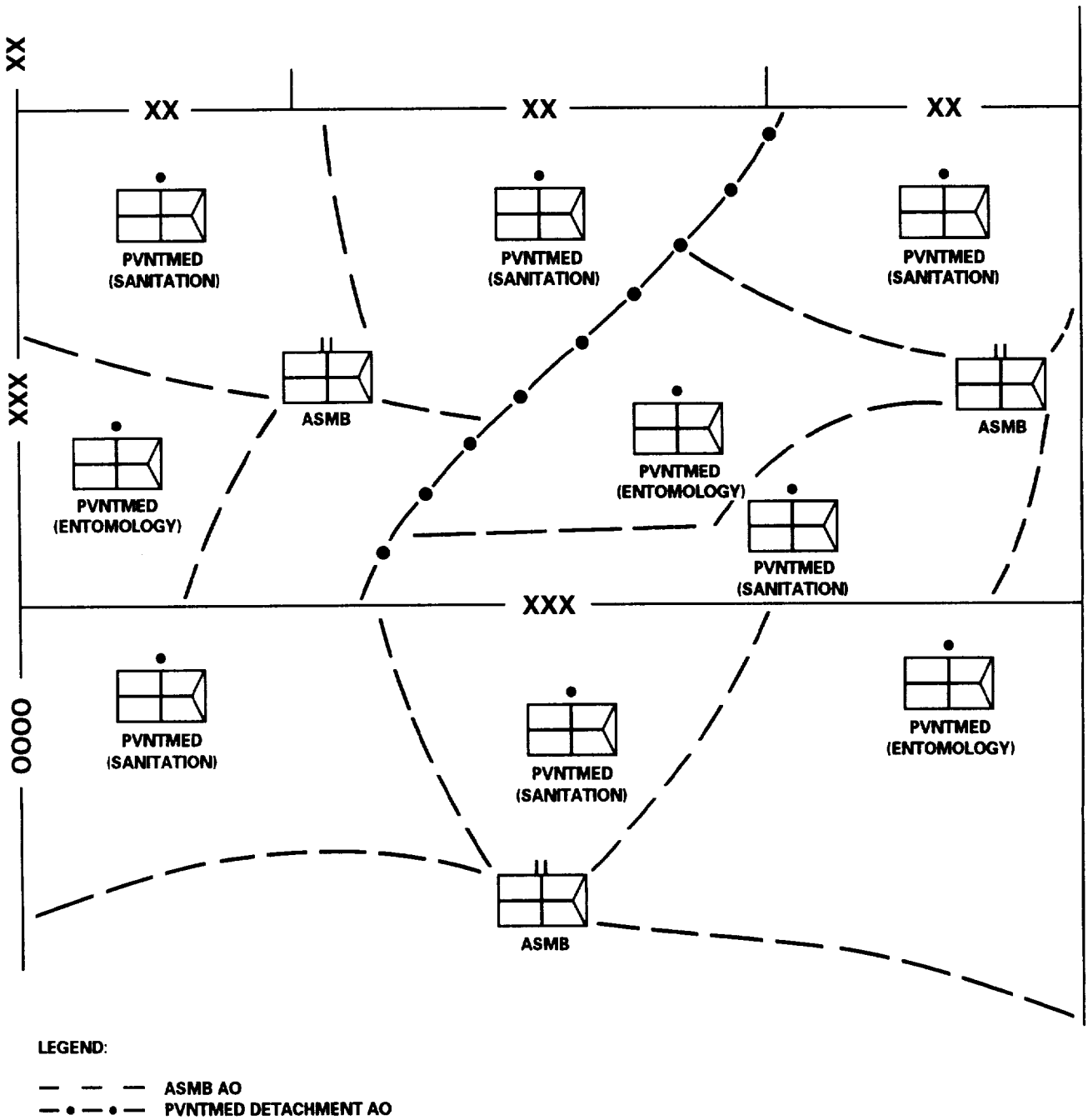

Figure 11-2. Preventive medicine area support, corps / COMMZ (typical laydown).

Some examples of the many types of units and activities of interest to PVNTMED personnel are listed in Table 11-1; this is not an all inclusive list.

Table 11-1. Units and Activities of Preventive Medicine Significance

ITEM OF INTEREST	LOCATION		PREVENTIVE MEDICINE SIGNIFICANCE
	DIVISION	CORPS	
1. MANEUVER COMPANIES	HIGHLY DISPERSED AND CONCEALED.		ITEMS OF INTEREST 1 THROUGH 3 CONTAIN—
2. MANEUVER BATTALIONS	HIGHLY DISPERSED AND CONCEALED.		• COMBAT SOLDIERS SUBJECT TO THE MEDICAL THREAT.
3. MANEUVER BRIGADES	IN THE MAIN BATTLE AREA AND IN THE RESERVE AREA.	IN RESERVE.	• FIELD KITCHENS THAT MAY BE THE SOURCE OF DISEASE. • MEDICAL COMPANIES THAT KNOW HOW MUCH PREVENTABLE DISEASE IS OCCURRING. • UNIT HEADQUARTERS THAT KNOW THE LOCATIONS OF SUBORDINATE UNITS REQUIRING PREVENTIVE MEDICINE SUPPORT.
4. MAIN SUPPLY ROUTE (MSR)	ROADS THROUGH BRIGADE SUPPORT AREA AND DIVISION SUPPORT AREA.	ROADS THROUGH THE CORPS SUPPORT AREA.	TOWNS AND VILLAGES CAN HAVE DISEASES WHICH WILL BE SPREAD ALONG ANY MSR.
5. AIRFIELDS	USUALLY NEAR DIVISION SUPPORT AREA.	STAGING AREAS ON EXISTING AIRFIELDS AND TACTICAL AIRFIELDS.	AIRFIELDS CONTAIN THE AIRCRAFT USED IN AERIAL INSECT CONTROL MISSIONS. THE SUPPLY POINTS AT AIRFIELDS CAN BE THE FOCUS OF DISEASE SPREAD. THE USAF WEATHER STATIONS CAN PROVIDE INFORMATION USEFUL FOR CONTROL OF HEAT OR COLD INJURY AND FOR AERIAL CONTROL OF INSECT DISEASE VECTORS.
6. WATER POINTS	NEAR BRIGADE SUPPORT AREA.	NEAR BASE CLUSTERS.	ADEQUATE QUANTITIES OF POTABLE WATER ARE REQUIRED TO SUSTAIN TROOPS.
7. ICE PLANTS	VILLAGES.	VILLAGES.	VILLAGE ICE PLANTS USED FOR PRODUCTION OF ICE FOR USE BY US SOLDIERS.

Table 11-1. Units and Activities of Preventive Medicine Significance (Continued)

	ITEM OF INTEREST	LOCATION		PREVENTIVE MEDICINE SIGNIFICANCE
		DIVISION	CORPS	
8.	RATION BREAKDOWN AND STORAGE FACILITIES/ POINTS	BRIGADE SUPPORT AREA. DIVISION SUPPORT AREA.	BASE CLUSTERS.	BULK STORAGE SITES, REFRIGERATION SITES, AND TRANSPORTATION UNITS ALL HANDLE POTENTIALLY HAZARDOUS PERISHABLE FOODS WHICH CAN CAUSE DISEASE.
9.	FIELD DINING FACILITIES	BATTALION TRAINS.	BASE CLUSTERS.	KITCHENS AND SERVING/DINING AREAS CAN ALL BE SOURCES OF DIARRHEAL DISEASE.
10.	ENEMY PRISONER OF WAR FACILITIES*	DIVISION REAR AND BACK. COLLECTION POINTS FORWARD.		ENEMY PRISONER OF WAR COLLECTION POINTS AND INTERNMENT FACILITIES CAN BE SOURCES OF COMMUNICABLE DISEASE.
11.	REFUGEE CAMPS*	DIVISION REAR OFF MAJOR SUPPLY ROUTE.	CORPS REAR OFF MAJOR SUPPLY ROUTE.	FORWARD TACTICAL SUPPORT COMPANY, REAR AREA SUPPORT COMPANY, AND REFUGEE CAMPS CAN BE THE SOURCE OF COMMUNICABLE DISEASE.
12.	HOSPITAL DISPENSARIES	BRIGADE SUPPORT AREA. DIVISION SUPPORT AREA.	BASE CLUSTERS.	OUTPATIENT INFORMATION ON INCIDENCE OF PREVENTABLE DISEASE SUPPLIES FOR PREVENTIVE MEDICINE PERSONNEL.
13.	MAINTENANCE FACILITIES	BRIGADE SUPPORT AREA. DIVISION SUPPORT AREA.	BASE CLUSTERS.	VEHICLE REFIT/REPAIR, EQUIPMENT REPAIR, AND RETROGRADE CARGO SITE (ALL OF THESE CAN HAVE HAZARDOUS OCCUPATIONAL EXPOSURES).
14.	LAUNDRIES	BRIGADE SUPPORT AREA. DIVISION SUPPORT AREA.	BASE CLUSTERS.	FIELD LAUNDRY REQUIRED TO PROVIDE VERMIN-FREE CLOTHING EXCHANGE.

* MAY SERVE AS FOCAL POINTS FOR RESERVOIRS OF VECTORBORNE DISEASES OF MILITARY IMPORTANCE SUCH AS MALARIA, DENGUE, OR LEISHMANIASIS. IF THESE AREAS ARE NOT TARGETED FOR PREVENTIVE MEDICINE SUPPORT OPERATIONS, INTERFACILITY TRANSMISSION OF VECTORBORNE DISEASES WILL COMPROMISE THE CAPABILITIES OF MEDICAL PERSONNEL AND OTHER PERSONNEL IN THE SURROUNDING AREA.

Section II. THE PREVENTIVE MEDICINE ESTIMATE

11-12. The Process

The PVNTMED estimate provides effective HSS to the fighting force. This estimate process is a doctrinally approved framework used to logically consider all the elements employed in combating the medical threat. *The estimate process is only a tool.* The HSS planner must use his professional judgment and common sense to omit nonapplicable portions. He must expand those areas that require more detail in subsequent phases of the operation. Figure 11-3 depicts the PVNTMED estimate process.

Example: The MEDCOM PVNTMED officer, the ASMB PVNTMED staff officer, and the divisional PVNTMED officer will have vastly different aspects to consider when making their respective estimates.

11-13. References

General staff and logistical planning guidance for support of the PVNTMED mission is best derived from current doctrine and experience. Preventive medicine reference information can be found in AR 40-5; FMs 8-10,8-10-8, 8-33, 8-42, 8-250, 10-52, 21-10, and 21-10-1; and technical bulletin medical (TB MED) series books such as TB MED 530 and TB MED 577.

11-14. The Estimate

a. Mission Analysis. The planner must use the HSS plan from higher headquarters to determine *specified tasks* which apply to PVNTMED. Next, he uses the HSS plan and the operational plans of the units supported to determine if there are any *implied tasks* which must be accomplished to combat and defeat the medical threat. Finally, the planner combines the specified and implied tasks and puts them in the form of a restated mission. This mission statement can and will change frequently in response to the changing tactical situation. The PVNTMED mission generally stated is, "To combat the medical threat to enable commanders to keep their troops well enough to fight and win. "

b. Situation and Considerations.

(1) The planner must evaluate medical intelligence information to identify the medical threat which occurs in the TO. The PVNTMED estimate, as well as the intelligence preparation of the battlefield, should include endemic disease threats. Existing intelligence information should be reviewed through coordination with the unit's supporting intelligence element. Additional medical intelligence information of interest in PVNTMED planning can be obtained from sources listed in Appendix F and in FM 8-10-8.

(2) The planner then conducts a map study to identify geographical sources of concern in the TO. He develops PVNTMED overlays for the TO showing the sources of concern and correlating the medical threat, the tactical scenario, and the PVNTMED situation.

(3) Appendix B contains an example of the PVNTMED estimate. The following items are considered:

(a) The enemy situation.

(b) The friendly situation.

(c) Characteristics of the AO.

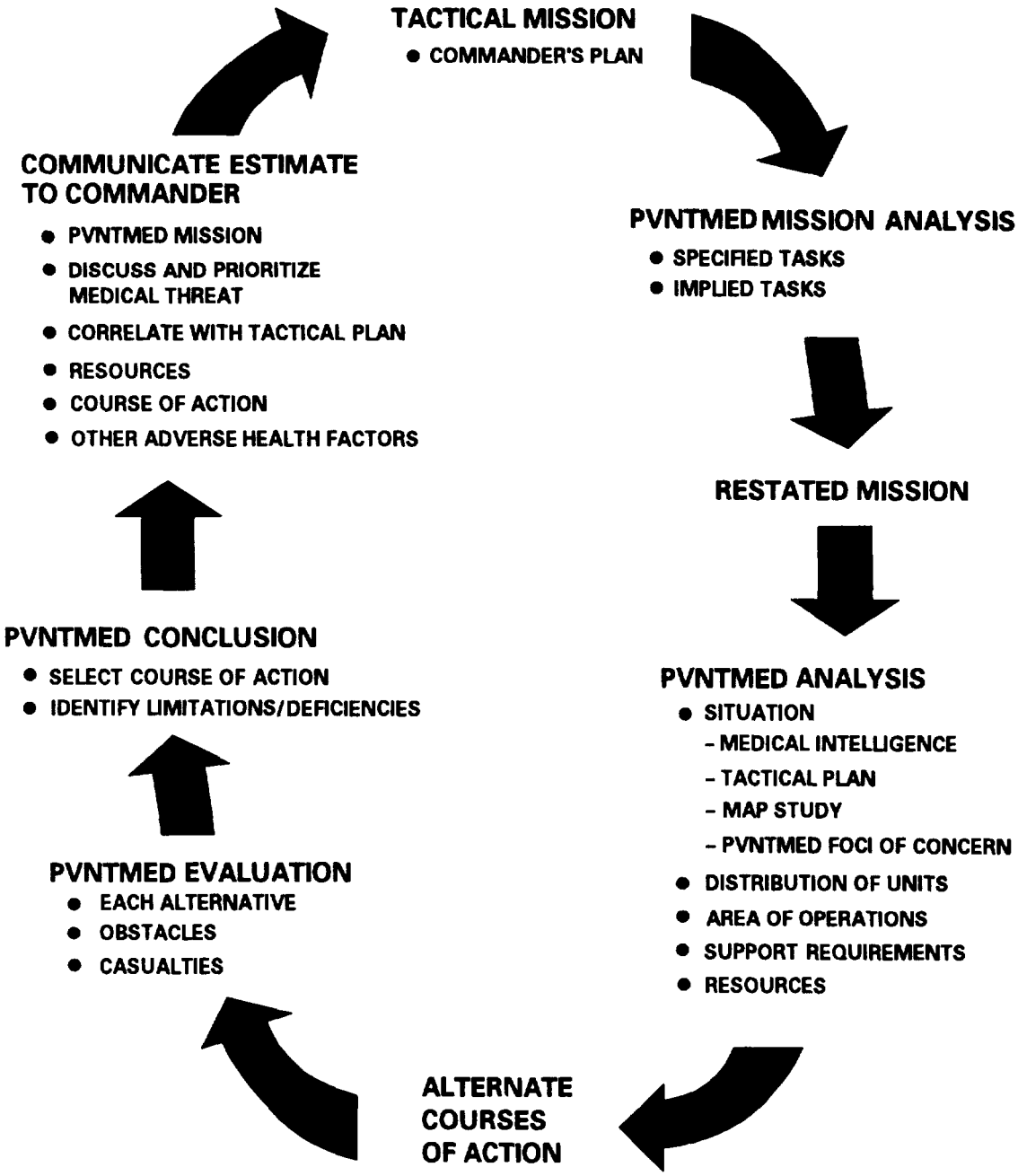

Figure 11-3. The preventive medicine estimate process.

(d) Strengths to be supported.

(e) Health of the command.

(f) Assumptions necessary to complete the estimates.

(g) Special factors of importance to the particular operation.

c. Analysis. Many of the essential tools needed to do an analysis have already been gathered. These include the mission and a general idea of the situational elements. To develop possible courses of action, the planner must integrate that data with task estimates and with the requirements and personnel resources available to support those tasks.

(1) *Task estimates.* The planner should consider the situational elements in relation to the distribution of units in the AO. Estimates are developed from the specific tasks required to combat the medical threat.

Example 1: If the units are deployed in an arid environment during hot weather, prime specific tasks would include ensuring that—

Ž Adequate amounts of potable water are supplied to the troops.

• Heat stress temperature indices are calculated.

Ž Commanders are informed about the proper work/rest ratios necessary to prevent heat injury.

• Unacclimatized troops are becoming acclimatized to the heat stress.

Example 2: If the units are deployed in a swampy area during a relatively cool period, then the specific tasks would emphasize arthropodborne disease and immersion injury preventive measures.

(2) *Support requirements.* The planner must estimate the separate requirements for PVNTMED supplies and equipment necessary to combat the medical threat to the units, EPW, and civilians in the AO. For example, if units are deployed to an arid environment where soldiers drink 16 to 24 quarts of water per day, a large increase in the number of iodine tablets for the force will be required.

(3) *Resources available.*

(a) The PVNTMED planner must make maximum use of the personnel available. He must consider the PVNTMED personnel organic to the units in the theater. In addition, he must consider PVNTMED detachments providing support throughout the theater and local civilian public health personnel available to support the local population.

(b) The planner must determine the current status of PVNTMED individual and unit supplies actually available for use.

(c) The planner must align the PVNTMED troop ceiling and supply load with the requirements of the total force.

(4) *Courses of action.* A comparison of the requirements and the means available to fulfill the requirements will enable planners to develop possible courses of action which will enable PVNTMED units to combat the medical threat.

d. Preventive Medicine Evaluation and Comparison of Courses of Action. Each course of action is compared against the obstacles that will be encountered and against the casualties that could occur if that course of action were not followed. The PVNTMED planner must now

decide which course of action he will recommend to support the operational mission and the HSS mission. The major limitations and deficiencies in the preferred course of action must be brought to the commander's attention. The disadvantages of the nonselected courses of action can be listed along with any factors that will adversely affect the health of the command. A simplified example of this situation analysis, estimate, and conclusion process is—

(1) *Medical detachment, preventive medicine (sanitation) DS mission:* Combat the medical threat in the 4th Armored Division area.

(2) *Situation:* Units are assembling in the divisional area prior to the start of an offensive tomorrow, August 15, 19xx; medical threat consists of the following in the order listed: heat injury, diarrheal disease, and malaria.

(3) Medical detachment, preventive medicine (sanitation) tasks: To survey water production points, food service areas, and troop assembly areas and to conduct pest management surveys and operations for problems that could prevent successful combat operations.

(4) *Courses of action.*

(a) Course of action 1. Use the detachment to collect water samples for vector analysis.

(b) Course of action 2. Use the detachment to survey the assembly areas prior to their commitment in the offensive of the next day-emphasis on adequate water supply to prevent heat injury.

(c) Course of action 3. Use the detachment to evaluate the status and effectiveness of handwashing devices in preventing diarrheal disease.

e. Preventive Medicine Conclusion. The planner's evaluation and comparison of the possible courses of action should lead him to choose a course of action which will eliminate or abate the greatest medical threat. Using the operational concepts of "preemptive action" and "priority to combat units," the decision was that the primary emphasis should be to combat heat injury in the assembly areas. The other courses of action could be done concurrently or as personnel, time, and material allowed. The planner would continue to make new/revised estimates, evaluations, and comparisons as the situations changed.

11-15. Communicating the Estimate

The PVNTMED planner will be required to communicate his estimate to the commander. When briefing the PVNTMED estimate, the planner should—

a. State the Mission. Keep it brief, specific, and positive.

b. Identify the Medical Threat.

(1) Keep it short and simple. If the commander cannot pronounce it, he will not remember it; if he cannot remember it, it will not get command emphasis.

(2) Correlate the medical threat to the tactical plan.

(3) Discuss the medical threat in order of priority.

(4) State the resources available: people and equipment.

(5) State the course of action selected.

(a) State the limitations and deficiencies of the preferred course of action that the commander must know about.

(b) State any factors that could adversely affect the health of the command.

Section III. THE PREVENTIVE MEDICINE PLAN

11-16. The Plan

The PVNTMED plan is a part of or is appended to the HSS plan. When it is implemented, it is a directive to all subordinate commands and enables them to determine the PVNTMED functions within the command.

11-17. Categories

Preventive medicine plans usually can be divided into two separate categories:

a. Preventive Medicine Detachment Plans. These plans provide guidance to PVNTMED detachment commanders in the form of a mission statement, location, attachments (if applicable), and coordination instructions. (See Appendix C.)

b. Preventive Medicine Assets' Input to Health Service Support Plans (Medical Section of a Unit). These plans provide guidance to subordinate commanders (line and support). Direction may become more detailed as unit size decreases. (See Appendix C.)

Section IV. THE PREVENTIVE MEDICINE TROOP PLAN

11-18. The Process

Planners determining PVNTMED troop requirements for a specific TO must consider the following:

- The mission in the theater.
- The total troop strength to be supported.
- The medical threat present in the theater.
- The composition of the force supported.
- The time phase of the operation.
- The required coordination.

11-19. The Theater Mission

The mission of the tactical force must be considered when the PVNTMED planner is making plans to adequately support that tactical force.

11-20. Troop Strength

The basis of allocation for PVNTMED units is based on the theater troop strength.

11-21. The Theater Medical Threat

Preventive medicine units and personnel have specific mission responsibilities. The selection of the types of PVNTMED resources deployed must consider the major medical threats in the theater.

11-22. Force Composition

Consider the types of combat troops to be supported. Mechanized units will require more mobility than infantry units. Will there be enough civil affairs units with PVNTMED officers to take care of refugees? Do deployed units have field sanitation teams? Are preventive medicine assets available to support the mission?

11-23. Time Phase

As soon as US forces deploy in the theater, there will be a potential for contracting an endemic disease. Preventive medicine personnel and units must be deployed as early as possible to aggressively combat the medical threat. Planners must consider using a part of the total PVNTMED requirement for each segment of the deployment.

11-24. Coordination

a. Although many areas of consideration in planning deal solely with AMEDD organizations, PVNTMED planning must involve coordination with the primary and special staffs at every level, The medical threat may be completely different if—

Ž Soldiers are served operational rations instead of Class A rations.

Ž Each soldier is issued two canteens for water in a hot environment and sufficient water transport is available.

Ž Enough insect repellent is available for issue to soldiers.

Ž Bulk chlorine is programmed for resupply before unit supplies are exhausted.

Ž Preventive medicine detachments arrive early.

Ž Plans and moves into port/staging areas include PVNTMED detachments prior to the arrival of significant number of troops.

b. Planners must examine the medical threat. They must consider issues such as supply, furel water, uniforms, personal protective clothing and equipment, and transportation and their effects on PVNTMED measures. They must also coordinate with the responsible staff, briefing them on the medical threat and obtaining their support to ensure that the PVNTMED plan will work.

11-25. Preventive Medicine Technical Support Available

a. The Division Preventive Medicine Section. The mission of this section is to—

- Identify the deterioration in PVNTMED measures.
- Inform the commanders on measures to repair the breakdowns.
- Coordinate, monitor, and provide technical assistance for training of unit field sanitation teams.
- Monitor the training of individuals in unit and individual PVNTMED measures.

Ž Perform sanitation surveys and inspections and limited pest management.

- Perform limited epidemiological surveys.

b. Nondivisional Preventive Medicine Assets.

(1) *Medical command.* Consultants in PVNTMED provide advice and technical

control of PVNTMED assets within the theater. (See Chapter 14.)

(2) *Medical brigade.* Staff in PVNTMED/veterinary section provides advice on PVNTMED aspects of brigade operations. Provides technical control of resources. (See Chapters 10 and 14.)

(3) *Medical group.* Staff in PVNTMED section provides advice on PVNTMED aspects of group operations. Staff also collects data on DNBI from MTFs under group control. (See Chapter 14.)

c. Preventive Medicine Detachments (Entomlogy and Sanitation). Paragraphs 11-8a(1) and (2), respectively, discuss the technical support provided by these detachments.

d. Preventive Medicine Section, Medical Battalion, Area Support. Paragraph 11-8b discusses the technical support provided by this section.

e. Area Medical Laboratory Preventive Medicine Support. Paragraph 11-8c discusses the support provided PVNTMED operations by the AML.

f. Other Preventive Medicine Assets.

(1) Separate brigade or armored cavalry regiment. The mission of PVNTMED assets is to provide support as in the division PVNTMED section.

(2) *Civil affairs units.* Preventive medicine personnel are assigned to the headquarters and headquarters company (HHC), civil affairs command; HHC, civil affairs brigade; civil affairs detachment (DS); civil affairs company (GS); and civil affairs action teams. Their mission is to—

- Provide support for displaced persons, refugees, and evacuees.

Ž Reestablish essential public health services.

11-26. Preventive Medicine Extenders—Field Sanitation Team

a. Mission. Supervise unit and individual PVNTMED measures as additional duties. The team receives special training in use of unit pest control equipment, the design and siting of waste disposal facilities, and the production and protection of water. Recommended team supplies and equipment are listed in AR 40-5 and FM 21-10-1.

b. Organization. The team will be comprised of two medical personnel, assigned or attached. If the unit does not have medical personnel (MOS 91B), assigned or attached, two soldiers, one of whom must be an NCO, will be appointed. (See AR 40-5 and FM 21-10-1.)