Chapter 14

MEDICAL PREPARATION FOR DEPLOYMENT

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INTRODUCTION

The concept of medical and dental preparation for deployment came from lessons learned during the two world wars, when overwhelming numbers of individuals were inducted into or volunteered for military service. In 2 months (September and October) of 1917 alone, 482,000 US men were called to serve their country. Recruits were often quickly screened, trained, and sent directly to battle. But medical personnel were not prepared to handle the mass examinations; they had themselves reported only shortly before the draft contingents arrived at base camps.[1]

Principles of personal health maintenance were established and practiced long before World War II, but the concept was first clearly validated during World War II, when "sanitary teams" were created in the Army and the Navy to control disease. Outbreaks of shigella dysentery were successfully aborted with the initiation of strict personal hygiene measures for food handlers and shipboard personnel.[2] Since World War II, the importance of preventive measures has been demonstrated repeatedly in successive conflicts, such as the Korean War and the Vietnam War, and education continues to play a central role in integrating preventive measures into military operations. More recently, the power of health education was demonstrated during Operations Desert Shield and Desert Storm by the near total absence of heat casualties in an extremely high-risk environment.[3]

Lessons learned during these conflicts led to the concept of preparing for deployment or "readiness" in the 1990s. Readiness means that military personnel are medically fit and protected from known disease threats so that they can deploy worldwide with little or no notice.

READINESS

Service-Specific Considerations

"Soldier readiness" in the Army, "operational readiness" in the Navy, and "readiness" in the Air Force all refer to service-specific programs to ensure that soldiers, sailors, Marines, and airmen are administratively ready for deployment at all times. Organizational differences between the services dictate various methods for ensuring readiness. Readiness encompasses a broad range of issues, including the relevant skill requirements specific to the particular unit, platform, or wing involved. This chapter addresses only the medical and dental aspects of predeployment preparation and education.

The medical officer assigned to the unit, platform, or wing may be the sole medical planner for a specific deployment. As a staff officer and medical planner, he or she must be familiar with occupational medicine, preventive medicine, environmental medicine, general medicine, medical planning, medical logistics, and field sanitation, among other necessary areas.[4] The medical officer plays a key role in all aspects of readiness, overseeing all medical preparation for deployment and providing appropriate preventive medicine education and advice to the commanders.[5]

In the Army, manpower staffing requirements include "checking the status of individual soldier readiness during in-processing; once annually as a unit or an individual; during out-processing; and within 30 days of an actual deployment."[6(p20)] A soldier readiness processing team from the installation accomplishes the annual checks for units and individuals and the predeployment checks under the general leadership of the chief of the Military Personnel Division (G1/AG). The team consists of representatives from such offices as personnel, medical, dental, provost marshal, finance, security, legal, logistics, and operations. One goal is to eliminate the nondeployment status of individuals with correctable medical and dental conditions.[6]

In the Navy, the Chief, BUMED (Bureau of Medicine and Surgery), is responsible for ensuring the readiness of the medical personnel assigned to various platforms (eg, Fleet Hospital, Casualty Receiving and Treatment Ships, Fleet Marine Force).[7] Operational readiness for sailors and Marines is the responsibility of the commanding officers of shore-based medical treatment facilities.[8]

For the Air Force, predeployment health assessment is routinely conducted to ensure dental and medical records are in order and immunizations are up to date. Once an airman is placed on mobility status, a mobility processing unit provides health education, immunizations, and a last check to ensure the airman is ready to deploy.[9]

Each service ensures the active duty member has received appropriate immunizations, human immunodeficiency virus (HIV) testing, DNA testing, hearing testing, eyeglasses and gas mask inserts, identification (eg, dog tags, Geneva convention status card, medical warning bracelet), and dental

screening. In addition, predeployment processing verifies that the service member has a complete medical record, a current physical exam, and a deployable physical profile.

Special Considerations

There are four programs that affect readiness and so require elaboration: the Exceptional Family Member Program (EFMP), DNA testing, physical profiling, and the HIV policy.

The EFMP is a personnel requirement that identifies service members whose family members have chronic medical problems.[10] This identification assists the personnel commands in making appropriate assignments, ensuring that the necessary medical capabilities are available to the family within 40 miles of an assignment within the United States or country-wide for an assignment outside the United States. Although EFMP referral is an aspect of readiness, it does not affect deployability status. A service member in the EFMP is fully deployable.

As of March 1994, the Assistant Secretary of Defense (Health Affairs) directed that no service member, civilian employee, or civilian contractor shall be deployed into an imminent danger zone without first leaving a specimen in the DNA Registry and Depository.[11] This policy has resulted in steps to acquire DNA specimens from all active duty service members. On November 13, 1996, the eventual adoption of the DNA Registry as the standard for positive casualty identification was approved, so the requirement to store duplicate dental panographs was rescinded.[12]

The Army physical profile system used to classify general aspects of overall health is referred to by the acronym PULHES (P—general physical stamina and strength, U—upper extremities, L—lower extremities, H—hearing, E—eyes, S—psychiatric evaluation). Each letter has four potential grades; grades 3 and 4 require a medical review board to determine medical fitness and deployability. Medical conditions that make service members of any service nondeployable require a physical evaluation board to determine whether they may remain on active duty.[13] Temporary profiles are issued for conditions that usually resolve with time. For example, a pregnant service member is considered non-deployable for up to 179 days after delivery. Although not explicitly stated in any regulation, it makes medical sense not to deploy the pregnant service member because of the relative contraindication of giving live vaccinations during pregnancy and the concern of complications arising in a developing country or during hostile actions.

Service members who have tested positive for HIV may remain on active duty but are considered nondeployable. This policy reflects the current knowledge of the natural progression of HIV infection, to include the relative contraindication of giving live vaccinations to infected individuals[14–16] and their increased susceptibility to diseases that are endemic where personnel may deploy. Most HIV-positive service members remain on active duty until their immune systems are compromised, when they are medically retired.

RESERVE COMPONENT

A major shift from a large standing force to an increasing reliance on the reserves has led to an even greater challenge in ensuring readiness. Reservists tend to be older than active duty service members and have little contact with the military other than weekend drills and 2 weeks of active duty time per year. There is little physical training conducted during reserve duty sessions. When physical training has been conducted, it was not been found to be an effective or an efficient method of improving the fitness of the National Guard.[17]

The impact of the Reserve Component on readiness was apparent during the Persian Gulf War, where reservists made up approximately 17% of the deployed force.[18] There have been reports that substantial proportions of Reserve Component service members were not medically fit for mobilization for Operation Desert Shield.[19] Of 2,723 persons from the Individual Ready Reserve called to active duty, 25% were rejected for activation. The most common reasons for rejection were being overweight (29%), being the sole parent of a minor child (25%), having orthopedic problems (12%), and having mental problems (10%).[20] In one reserve battalion, 7% were not able to deploy due to medical reasons, the two most common being psychiatric problems and back problems.[21]

The Persian Gulf War also demonstrated that Reserve Component personnel were not dentally prepared.[22] One hundred percent of those in the reserves (ie, Individual Mobilization Augmentee and Individual Ready Reserve) required a dental examination, while only 8.6% of those on active duty required one. Dental treatment was required by 17% and 27% of the reservists and National Guardsmen, respectively; only 8% of those on active duty required treatment.

DENTAL PREPAREDNESS

Oral health is a readiness issue because of the chronic disease that is endemic in American service members. A 1994 survey of the oral health status of 2,711 recruits and 13,050 active duty personnel from the Army, Navy, Marine Corps, and Air Force indicated that 99.3% of all recruits and 92.4% of active duty service members had oral conditions that required some form of treatment. Almost half (49.1%) of recruits and 14.5% of active duty service members had oral problems severe enough that they were considered to be at high risk for dental emergencies that would interfere with operational effectiveness.[23]

The chronic nature of dental diseases implies that the oral health of personnel who have deployed will deteriorate during periods of fatigue, nutritional deficiencies, and psychological stress. This will be compounded by their use of tobacco, especially when field hygiene is not practiced and if dental care is not provided. The magnitude of the potential problem for today's military can be appreciated by looking at the dental emergency rate in Vietnam: 142 per 1,000 soldiers per year and 182 per 1,000 Marines per year.[24] These numbers were considered underestimates because of the difficulty in collecting data in an operational environment.

Considering the need to minimize emergency and routine dental care in the area of operations, the preferred intervention is being prepared for deployment. All three military services use the Department of Defense Dental Classification System[25] to identify an individual's level of risk for needing an unplanned dental visit, to target higher risk personnel for care, and to profile the status of the unit's dental health for the commander. This requires that all service members be examined and classified at least annually.

All three services target Class 3 personnel (those with at least one dental condition that predisposes them to a dental emergency within a year) for treatment as a readiness issue, but dental emergencies do occur among Class 2 (minor dental needs) and Class 1 (no dental needs) individuals. In one study, the Class 3 emergency rate was 530 per 1,000 troops per year, the Class 2 rate was 145 per 1,000 per year, and the Class 1 rate was 67 per 1,000 per year.[26] The reason for the lack of sensitivity of this predeployment screening index is that some emergencies, like trauma, are unpredictable. The effect of predeployment screening has been estimated to reduce dental emergency rates by 478 per 1,000 soldiers annually.[27]

In addition to the secondary prevention described above, all three services provide or assist in providing primary preventive dental care to promote oral health and prevent oral disease and injury. These include systemic fluorides, topical application of fluorides, plaque control education, dietary counseling, oral prophylaxis, protective mouthguards, pit and fissure sealants, tobacco risk education, and preventive orthodontics.[28] Oral disease and injury are inevitable during military operations, but many oral emergencies can be prevented by predeployment preparation.[26,29] It remains clear, however, that it is the command's responsibility to ensure that service members are available for dental examinations and care.

PREDEPLOYMENT IMMUNIZATIONS AND CHEMOPROPHYLAXIS

Immunizations are a well-known and accepted means of protecting individuals and military forces against disease. Knowing which vaccinations are needed or required depends on knowing who is the controlling authority for the deployment. The Commander in Chief of a unified command, in coordination with the appropriate Surgeons General or Commandant of the Coast Guard, establishes specific immunization requirements based on special disease threat assessments for each deployment area. Current health threat assessments based on disease prevalence in specific geographic regions are maintained by each service preventive medicine authority using federal, Department of Defense, and other relevant sources of information (see chapter 11, Health Threat Assessment). Medical leadership ensure that the appropriate vaccinations for area-specific threats are given to active duty personnel.

A tri-service regulation[30] documents generally required immunizations for the uniformed departments of the Army, Navy, Marine Corps, Air Force, and Coast Guard (Active and Reserve), nonmilitary persons under military jurisdiction, selected federal employees, and family members eligible for care within the military health care system.

The services require all active duty members to receive influenza vaccination annually and tetanus vaccination every 10 years. In addition, the present tri-service regulation covers vaccines against hepatitis B, Japanese encephalitis, meningococcal meningitis, plague, rabies, yellow fever, and typhoid fever. Although there appears to be some unifor-

mity between services on immunization requirements, the interpretation of "high-risk" deployment and "high-risk" occupational group varies between services.

Immune globulin, once the mainstay of prevention against hepatitis A, was often a source of confusion because of the issue of timing its injection with that of live-virus vaccines. This is no longer a problem because immune globulin has been replaced by the more-efficacious hepatitis A vaccine. The timing of giving other vaccines may still be raised. All of the routinely given militarily relevant vaccines may be given simultaneously without reduced effectiveness or increased reactogenicity. Live-virus vaccines may be given at the same time as immune globulin without inhibiting the immune response. If live-virus vaccines are not given at the same time, 4 weeks should be allowed to elapse between sequential vaccinations. There are no current data on possible interference between the yellow fever vaccine and the vaccines for typhoid fever, plague, rabies, typhus, paratyphoid fever, or Japanese encephalitis.[31]

A major challenge in the military is ensuring all active duty personnel are up to date on their immunizations. The rapid turnover of personnel and frequent deployments, plus the mandate to vaccinate the entire force against anthrax, makes using a standardized method of tracking immunizations a priority. In a decentralized troop medical clinic setting, confusion about regulations and deployment requirements can result in individuals being over-vaccinated. According to one Army study[32] conducted in 1994 and 1995, 30% of soldiers were "inappropriately" vaccinated. Those inappropriately vaccinated included soldiers who received vaccinations for deployment when they did not deploy or received booster vaccinations 6 months or more earlier than recommended. A standardized method of tracking immunizations should reduce the percentage of inappropriately vaccinated individuals and ensure that service members do not go unvaccinated.

Any major adverse reaction resulting from vaccination should be noted in the individual's medical record. Information to be included consists of identification of the vaccine used, lot number and manufacturer, date of administration, name and location of the medical facility, and type and severity of the reaction. Health care providers are required by the National Vaccine Injury Compensation Program to report reactions via the Vaccine Adverse Events Reporting System (VAERS) of the Department of Health and Human Services using form VAERS-1.[30,33] Only reactions requiring hospitalization or lost time from duty of over 24 hours are reported. Low-grade fevers, local soreness, and redness for less than 24 hours are not reported unless contamination of the lot is suspected. Military medical authorities are required to report to both VAERS and their own service.[30]

Investigational New Drugs and Vaccines

New drugs and vaccines designed to treat or prevent diseases that threaten the fighting strength of the military have strategic importance and so are critically important to the military. These new drugs and vaccines usually have little application within the civilian community (eg, botulinum vaccine). Often the military develops these unique products and then provides the technology to civilian companies who produce the drug or vaccine and conduct the clinical trials necessary to gain Federal Drug Administration (FDA) approval. New drugs and vaccines undergo years of testing for safety and efficacy before acquiring investigational new drug (IND) status, but that is only one step in the long process of winning FDA approval. Having the ability to use effective new drugs and vaccines under IND application has been key to providing the active duty military with needed vaccinations before they have received FDA approval.

The use of investigational new drugs and vaccines in the military is evaluated and approved by a human subjects review board under the authority of the Army Surgeon General. According to regulation,[34] even vaccines that have been approved for use by foreign countries may only be used in the United States under IND protocols until FDA approval is obtained. As an example, the Japanese encephalitis vaccine had been successfully used in Japan for more than 20 years; it took more than 10 years of use in the United States under IND status before sufficient data were gathered for FDA approval. Military members must give informed consent to take drugs or biologics under IND status.

An exception was made during the Persian Gulf War when a waiver of the requirement for informed consent for use of investigational drugs and vaccines was sought by the military. The justification was military expediency due to the perceived threat of chemical and biological warfare. The FDA granted the request and issued a new general regulation, rule 23(d), that permits waivers on a case-by-case basis when consent is "not feasible in a specific military operation involving combat or the immediate threat of combat."[35] This ruling allowed the use without consent of an IND vaccine (ie, pentava-

lent botulinum-toxoid vaccine) and of an approved drug being used for an unapproved reason (ie, pyridostigmine bromide as a pretreatment for nerve-gas attacks).[36] These particular products had been extensively tested and found to be safe, yet lacked the two well-controlled studies demonstrating safety and efficacy in humans required by the FDA for approval. This criterion will never be meet as it would be unethical to expose subjects to botulinum or nerve agents.[37] As new vaccinations and drugs become available, the ability to use them under the IND protocol will remain a vital means to the goal of preventing disease and disability in deploying service members.

Chemoprophylaxis and Personal Protective Supplies

Of the diseases that are amenable to chemoprophylaxis and personal protection measures, the most commonly encountered by service members is malaria. Disease manifestations and treatment of all diseases that can be prevented by chemoprophylaxis or personal protection measures or both are dealt with in other sections of this book. The major issue for predeployment is how to start large units on effective chemoprophylaxis and how to acquire the necessary protective equipment and supplies (eg, bednets, permethrin, deet repellant).

The Commander in Chief and his or her medical staff, using the medical threat assessment will choose the medication needed and write the guidance for personal protection measures. The OPLAN (operational plan) will outline the medications to be given and protective measures. The commanders of the assigned units, platforms, and wings are expected to ensure compliance with the OPLAN. Medication is provided by the local medical treatment facility, but it is unlikely to stockpile adequate amounts for large deployments. Likewise, units may not be able to afford stockpiling supplies for routine preventive measures. Therefore, rapidly deploying units may not be able to acquire the required medications or supplies before departure. This recurring problem highlights the need for the medical officer to be involved early in the medical planning for deployment and to work closely with logistics personnel.

Distributing the medication and ensuring compliance is a commander's responsibility, but the implementation can be expected to vary. Distribution of medication at a routine unit formation is the preferred method but may not be feasible throughout the deployment. Education and good information dissemination are other key elements to a successful program; this has been learned in every operation, from World War II to Somalia, when malaria chemoprophylaxis and personal protective measures were needed.[38] The same issues are faced, whether the instruction is about malaria chemoprophylaxis, leptospirosis chemoprophylaxis, or pretreatment for potential nerve gas exposure.

HEALTH EDUCATION

Once military members have been administratively prepared, medically screened, and vaccinated against endemic medical threats, health education prepares the active duty service member and the commander for disease threats that may be encountered during the deployment. For a predeployment education program to be effective, military personnel must integrate the recommended preventive measures into operational units' deployment procedures. Preventive measures that rely solely on the activities of a small group of specialized personnel, such as in a deployed Air Force fixed base, are usually the easiest to implement.[39] Adherence to recommendations aimed at the individual is more difficult to achieve.[40] Success has been most clearly linked to support and strong emphasis by the commanding officer, expressed through the chain of command to the noncommissioned officer level. An example includes the malaria and dengue experience in Operation Restore Hope in Somalia; outbreaks of these vector-borne diseases occurred primarily in those units whose leadership did not enforce the prescribed countermeasures.[41] This emphasizes the importance of targeting the commanders and the entire chain of command, including the noncommissioned officers and company commanders, to inform them of the anticipated medical threats and convince them of the requirement to enforce appropriate countermeasures.

A lack of compliance with preventive measures, which can result in disease and nonbattle injuries and reduced combat efficiency, can signify a lack of unit discipline. This helps to explain the trend to hold the senior leadership accountable for breakdowns in preventive measures as a readiness issue. Convincing the leadership may be particularly challenging when the disease threat is unfamiliar and thus somewhat theoretical to the leadership and line personnel. The experience of Army troops in the Middle East during World War II is an example; strong recommendations to avoid skin contact with fresh water in the Middle

East were not heeded until a large number of personnel were incapacitated by schistosomiasis.[42] In contrast, preventive measures for heat injury, which are very familiar to most service members, have been successfully built into the routine logistics of training, tactical maneuvers, and handling water in both the Army and the Marine Corps.

The type of health education possible depends on the type of deployment. Deployments can be planned (scheduled in advance), crisis (a rapid response to political events), or combination (the itinerary of a planned deployment changes in response to current events). In crisis or combination deployments, the procedures and depth of predeployment education depends on the imminence of deployment and the availability of resources. In the case of planned deployments, the process and materials for predeployment education are usually incorporated into the standard preparation procedures. In the Marine Corps, for example, Navy Preventive Medicine Technicians, Environmental Health Officers, Preventive Medicine Officers (PMOs), and Aeromedical Safety Officers are intimately involved with the complete predeployment process of logistically preparing deploying battalions. Classes are given for the senior enlisted personnel, company commanders, and junior enlisted personnel. PMOs, Environmental Health Officers, or Battalion Surgeons brief the deploying commander and the senior officers and enlisted leaders. If possible, the more-senior PMOs give a final predeployment briefing to the operational leadership, emphasizing the anticipated threats and the leadership's accountability for service member compliance. Others can help in this process. For example, the Naval Environmental Preventive Medicine Units have participated, primarily through providing the deploying personnel the most up-to-date medical intelligence.

The methods used for predeployment education vary from an informal discussion to a lecture with or without visual aids (Figure 14-1). Briefing packets of printed materials are also often prepared for service members' future reference. More recently the US Army has developed pamphlets, prepared for particular areas of operations, delineating the personal protection measures required for that region. This represents a significant advance in getting key information to the individual service member. These pamphlets served as a major means of educating line personnel in such large-scale "crisis" deployments as those to the Persian Gulf and to Bosnia-Herzegovina.[43]

The topics selected for predeployment education depend on the deployment platform and the scenario—the who, what, when, how, and where of the deployment. For instance, predeployment education for shipboard personnel usually centers on port visits, with an emphasis on motor vehicle accidents and urban diseases such as dysentery and sexually transmitted diseases. Accurate, up-to-date information on the endemic disease rates in the local populations should be provided, when possible, to reinforce the importance of preventive measures (eg, the prevalence rate of HIV infection in commercial sex workers). For the Special Forces, Army, and Marine Corps infantry, the threat potential can be greater due to their more extensive contact with an uncontrolled environment and indigenous populations. The operation scenario becomes critical to planning an effective predeployment education program. Components of the operation necessary for planning an education package include information regarding the food and water supply, waste storage and disposal, climate, terrain, diseases endemic to the area, health of local populations, plant and animal threats, and vectors. Specific topics are prioritized based on the operation scenario and the amount of time allotted for predeployment briefings. General categories include environmental injury, sanitation, vector-borne diseases, foodborne and waterborne diseases, and other infectious diseases.

Sources of information for predeployment education are myriad. A recent tri-service innovation is the Armed Forces Preventive Medicine Recommendations, produced by the Armed Forces Medical Intelligence Center. Called the MEDIC, it is a short country-by-country summary (one to two pages per country) of preventive medicine recommendations appropriate for a joint land-based exercise or contingency operation and is distributed on a CD-ROM disk. Nonmilitary agencies such as the State Department and World Health Organization can also be sources of medical information. A recent addition to information resources are the internet infectious disease discussion groups, such as PROMED, and various World Wide Web sites. Any information gleaned from non–US government sources (especially Internet sources) requires confirmation before being used in briefings to commanders and service members.

There is increasing interest in evaluating the quality and efficacy of education programs with measurable outcomes, with the goal being continued improvement and refinement. This is a very difficult process to incorporate into predeployment

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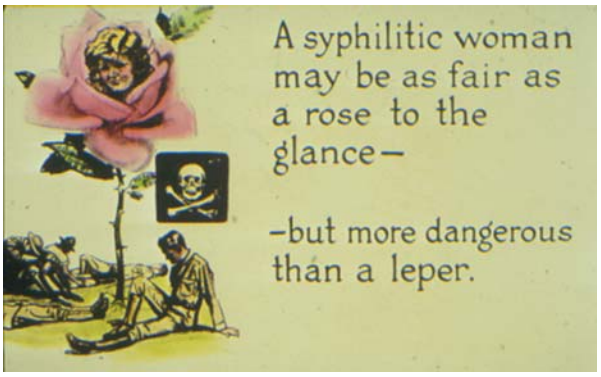

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Fig. 14-1. Efforts to educate service members about the dangers of infectious diseases have taken many forms, and the flier or poster is one of the cheapest and most easily distributed. The World War I flier shown in (**a**) decorously warns doughboys against syphilis, while posters (**b**) and (**c**), both from World War II, warn against diseases transmitted by water and airborne droplets. Calendars were also used to teach or remind personnel about preventive measures. The example in (**d**) reminds service members to wear their shirts from sundown to sunup to keep mosquito bites, and mosquito-borne disease, to a minimum. Photographs: Courtesy of National Museum of Health and Medicine, Armed Forces Institute of Pathology: Catalogue numbers: (a) WWI lantern slides, (b) REEVE 35086, (c) REEVE 35036, (d) REEVE 88266.

education programs. Certain elements of the process can more-easily be assessed. For instance, education materials can be piloted to examine such issues as readability and comprehension for the target population.[43] One of the most effective ways to evaluate the efficacy of a predeployment education program is to measure disease incidence, the ultimate outcome measure for a prevention program. Real-time disease surveillance during deployment can rapidly identify outbreaks in sentinel disease categories, which may signify a breakdown in preventive measures. Outbreak investigations expeditiously conducted can pinpoint the appropriate military units and identify areas of noncompliance.

It has been well documented that information alone is not enough to induce changes in established behaviors. One of the newer trends in education is to incorporate skill building into educational programs—a concept that is relevant to predeployment education in which military personnel are being trained in certain behaviors as countermeasures for disease threats. This methodology has been successfully applied to STD prevention. An intensive, multi-session, military-specific prevention program was designed based on research done in target groups with Marine Corps infantry personnel and Navy preventive medicine personnel, and it was associated with a decrease in risky sexual behavior in a Western Pacific deployment.[44] Central themes were port-liberty behaviors, peer influences, transmission of asymptomatic STDs, and perceived invulnerability. Skill building centered on communication, appropriate use of alcohol, and safe sexual practices. As these types of educational programs are very labor-intensive, it is likely that implementation will be best accomplished in targeted, high-risk groups.

Over the past few decades, the assets and the process of health education for deploying forces have become more formalized. Each of the armed services has its own mechanism through the chain of command to accomplish this goal. Efforts to standardize preventive medicine recommendations where possible across the three services are desirable. As joint operations among US forces are becoming more common, it is becoming crucial that each service component of a joint command both understand and support the need for a common preventive medicine strategy.

SUMMARY

Medical and dental predeployment preparation must not be perceived as a last-minute activity but be a concerted effort throughout the military training year, with close monitoring by unit commanders. Last-minute activity must only be used to identify the few who have slipped through the cracks. Immunizations remain a major component of military force protection and need to be addressed on a continual basis. Deployments to particular geographic areas may require additional vaccines, to include IND products. Health education needs to be an integral part of the deployment process and with strong command support and emphasis can result in adherence to preventive recommendations and decreased morbidity and mortality. Investment in predeployment medical and dental preparation will avoid or decrease degradation of mission effectiveness caused by medical or dental emergencies. Although medical and dental personnel are intimately involved in the process of predeployment readiness, commanders have the authority and ultimate responsibility to ensure their most valued weapon system, the soldier, sailor, Marine, or airman, is in an excellent state of readiness.

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