MILITARY PREVENTIVE MEDICINE: MOBILIZATION AND DEPLOYMENT Volume 2

Section 8: Postdeployment

The medical and psychological effects of deployment do not necessarily dissipate once the deployment is over. Service members and their families make significant, though incompletely understood, sacrifices during deployment and may need to make major readjustments after the deployment ends. This is not a new phenomenon, but it has been much better illuminated in the wake of the Persian Gulf War.

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Chapter 48

PSYCHOLOGICAL ASPECTS OF DEPLOYMENT AND REUNION

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INTRODUCTION

A deployment is a military operation in which the service member is sent from the home station, usually as a part of a military unit, to a distant location to accomplish a special mission. Routine training is not included in this definition. Families are not permitted to accompany him or her. Both deployment and reunion are often stressful for service members and their families. An increased knowledge of the stresses of predeployment, deployment, and reunion will help commanders and medical personnel develop preventive measures to counter them. In this chapter we present a brief history of deployments in the post–Cold War environment and give illustrations of the stressors in four of the most prominent recent ones: the Persian Gulf War, Somalia, Haiti, and Bosnia. We present and discuss deployment issues that affect service members and family members and the command and medical actions that might be taken to prevent or ameliorate them.

THE NATURE OF CURRENT MILITARY OPERATIONS

Military Operations from World War II to the Post–Cold War Environment

There have been substantial modifications in the nature of military operations since World War II, with a broadened spectrum of experiences for service members and their families. World War II typified the long-duration war in which there were peaks and valleys of combat intensity. Massive numbers of personnel, ships, and aircraft were engaged in battle theaters throughout the world. Soldiers, sailors, and Marines were involved for the duration of the war or until a wound or other medical or psychiatric condition required their evacuation.

The Korean and Vietnam wars were more limited in scope, even though the Korean War involved large-scale land and air campaigns, and the Vietnam War lasted longer than World War II. The overall mission, politically and militarily, in both these latter conflicts was less clearly defined than it was in World War II. Both represented combat phases of the much-longer global Cold War between the United States and its allies and the Soviet bloc of nations. The desire to limit the spread of communism was balanced by the fear of extensive involvement in a land war against the communist superpowers. Ground efforts were limited geographically and bombing missions for aircraft were tightly controlled.

Politically, the Cold War was marked primarily by postures of conventional warfare, wars of national liberation, terrorist groups of various ideological commitments, and nuclear deterrence. The world was roughly divided into a Western bloc plus Japan and other Pacific nations; a Communist block that included the Soviet Union, the Warsaw Pact nations, and the People's Republic of China; and third-world countries, many of which varied in their alliances between the Western and Communist blocs. Militarily, it was characterized by global deployment. Large numbers of US personnel were assigned to installations in Europe and Asia to preclude overt aggression by Communist forces. The US Navy and Air Force developed and deployed highly advanced weapons platforms. Deployments could generally be planned and careers scheduled around deployment cycles, particularly in the Navy. Even though separation from families and the high tempo of training took their toll, there was seldom a direct threat of loss of life and limb, as compared with war.

With the fall of the Soviet Union and the collapse of the Warsaw Pact in 1989, multiple areas of regional instability became the focus of US political leadership. The military forces of the United States have taken on new missions and roles that challenge the capabilities and ingenuity of service members and their military and civilian leaders. Much of the deployment effort is now shared by active duty and reserve units, which are often activated and deployed for several months. Differences in training, experience, and equipment between active duty and reserve units and the short-notice activation of units have proved highly disruptive to both the military and family environments.

Current US National Strategy

The National Security Strategy for the United States was outlined in a White House publication.[1] The United States must be able to respond to crises, such as threats to vital national interests. These interests are of broad, overriding importance to the survival, safety, and vitality of the nation, and they affect both national well-being and the character of the world. Among these are humanitarian crises, natural disasters, and manmade disasters or gross violations of human rights that demand action. For the foreseeable future, the United States and its allies must be able to deter and defeat large-scale

cross-border aggression in two distant theaters with overlapping time frames. This scenario includes the rapid defeat of initial enemy advances, victory against an enemy that may use unconventional approaches, and successful transitions from multiple small-scale contingencies to major wars.

The second group of threats are transnational and involve terrorism, international crime (eg, trafficking in drugs and illegal arms), environmental damage, and intrusions into information infrastructures. They have filled the vacuum left by the fall of the Soviet Union and the end of the Cold War. The third group of threats is composed of smaller-scale contingencies, operations which fall short of major-theater warfare, including humanitarian assistance, peacekeeping missions, disaster relief, maintenance of no-fly zones, reinforcement of key allies, and limited strikes and interventions.

The current period is also characterized by political disagreements between various political groups and branches of the US government concerning national strategic goals. These disagreements create distinctive problems for the military that receives its orders from the Executive Branch, but its funding from the US Congress that may or may not support the strategic goals established by the president. Such conflicts have obvious implications for the welfare of the service member, since the success of a particular mission often depends on unity of purpose to support the deployment.

Environmental, Psychological, and Moral Factors in Operational Stress

With the diversity of military missions in the modern era, a systematic method is needed to accurately predict, assess, and minimize their negative psychological aspects. One approach is to categorize the various types of risks. Environmental factors include weather, geography, terrain, ease of communication, noise, availability of adequate food and shelter, presence or threat of disease, and toxins or fear of toxins (eg, chemical and biological agents). Psychological factors encompass those individual and interpersonal aspects of situations to which individuals and units respond negatively. Moral factors relate to the individual's or unit's overall sense of the rightness or worth of the campaign. These environmental, psychological, and moral factors affect individual and unit performance. Similar concepts appear in the discussion of the environment of combat in Army Field Manual 100-5, *Operations.*[2]

Environmental Factors

Environmental risks can be assessed based on known or predictable conditions of deployment, although adequate intelligence about local conditions is often lacking. The tempo of operations will affect sleep, hygiene, nutrition, hydration, and fatigue. The degree to which military personnel are affected by the environment may depend on their sensitivity to its influences. Age, physical fitness, presence of medical or psychiatric illnesses, and response to medications (including prophylactic medications) can affect sensitivity. The effect of the environment can be modified by equipment deployed with the forces to counter such threats. Unfortunately, unanticipated negative consequences of equipment and systems failures can result in another source of environmental risk. A commander's desire to avoid any harm to personnel can result in excessive use of personal protective equipment. This may increase the negative impact of environmental factors and actually create casualties.

Psychological Factors

Psychological factors operate at individual and group levels. Each service member has a unique history of experiences that set the framework for the perception and interpretation of current experiences. Successful relationships and positive performances build confidence and resiliency, while broken trusts and failures lead to isolation and pessimism. Units have a collective character that is formed over time. Appropriate communication, respect, and mutual support build team spirit and cohesion. Active, realistic training and prior success in combat build unit confidence and initiative. Frequent reorganizations, rapid turnover of personnel, and limited communication lead to behavior that is not cohesive. Limited training and assignment to operations in which the mission is poorly defined and success difficult to measure will erode the confidence of the unit.

Moral Factors

The military services provide a means to accomplish the political goals and strategies of national leadership. Clausewitz described the trinity of the military, political leadership, and the people. He believed that there must be an alignment of the three to ensure success in war. In most instances, the leaders are attuned to the moral tone of the nation and

TABLE 48-1

ENVIRONMENTAL STRESSES AND MITIGATING FACTORS

Environmental Stress	Mitigating Factors
Weather: heat, cold, rain, mud	Shelter, proper clothing, warming tents, rotation of personnel
Toxins: biological and chemical weapons	Available MOPP*, education briefings concerning actual threat
Disease: airborne, insect vector, direct contact	Prophylaxis if available, repellents, barrier protection, education about prevention and briefing about actual threat
Weapons systems	Armor, dispersion, training to respond, briefings on actual threat

*Mission-oriented protective posture

TABLE 48-2

PSYCHOLOGICAL STRESSES AND MITIGATING FACTORS

Psychological Stress	Mitigating Factor
Personal fears and doubts	Briefings regarding actual threats, training in realistic environments, "buddying" new personnel with seasoned veterans
Lack of effective communication	Education at all levels on appropriate means of passing information, encouraging initiative within proper bounds of rank and respect
Poor unit cohesion	Leadership, limit changes in personnel and routine, train in environment and conditions likely to be encountered, foster cohesion through additional team-building events, such as organized sports
Sleep deprivation	Forced rest periods, noise attenuation, sleep hygiene education
Casualties of boredom: substance abuse, reckless behaviors, sexual promiscuity	Maintain active training schedule (even when deployed), provide clear limits to behavior and apply appropriate and uniform punishment for infractions

their use of military forces is seen as good. When this occurs, the people of the nation are supportive of the service members at many levels, from personal support of family members to positive national media coverage.

At times, military and political goals may be unclear or poorly stated. In many instances, goals may seem mutually exclusive. For example, it may seem correct to help preserve the internal security of another country and yet undesirable to use deadly force to stop civilians or paramilitary personnel whose views differ from those of the national leader. It is the nature of the US democracy to question the goals of its leadership, which may lead to questions of whether the nation is engaged in a worthwhile and morally correct endeavor. Once this occurs, the support for the military forces may diminish. Some portion of media coverage may speak out against military actions, family members may question the need for the hardship of separation and the threat of death or injury, and individual service members may begin to doubt their role in the operation. These factors have a direct effect on the psychological well-being of individuals and units. This creates the potential for shifting political support for most any strategic initiative. For example, during the Vietnam War changes in policies paralleled changes in US public opinion and support for the war between 1963 and 1973.[3]

This background provides examples of contexts for performing a situational assessment of environmental, psychological, and moral factors likely to affect individual and unit performance within the myriad of possible operational assignments. Quantification of the degree and duration of stress can be balanced against positive factors that provide for resiliency and endurance. Lists of some environmental stresses and mitigating factors are provided in Table 48-1 and some psychological stresses and mitigating factors in Table 48-2. A commander's impact on moral factors may vary with rank and with operational contingencies. Commanders must be aware of the influence of moral factors in determining their impact on the service member and the family.

STRESSORS IN MAJOR DEPLOYMENTS IN THE 1990s

Many persons involved in the diverse US military operations of the 1990s have described a variety of stressors that affected the health of individuals assigned to those operations. In the discussion that follows, elements of stress are identified as environmental, psychological, or moral. Although there are persistently similar themes in these operations, some were unique, and the surveillance systems and nomenclature used to identify and track them were as varied as the missions themselves.

The Persian Gulf War: Operations Desert Shield (Aug '90–Jan '91) and Desert Storm (Jan–Mar '91)

Environmental

Some of the commonly reported stressors of this conflict were the rapid and unexpected activation of the operation, exposure to Scud missile attacks, anticipation of possible chemical or biological attacks, austere living conditions, environmental pollution, and instantaneous media coverage of the war.[4]

Psychological

Major psychological stressors for those in the French Army were serving under the United Nations banner, imposed passivity in the face of the rules of engagement (no ripostes), not being able to distinguish allies from the enemy, difficulty of communications, discomfort, lack of security, the inability to change the complex social problems, and the threat of attack with chemical weapons.[5] The major sources of chronic psychological stress reported by US forces were long duty days, extensive time spent in chemical protective clothing, lack of sleep, crowding, lack of privacy, physical work load, boredom, and lack of contact with family.[6] Directly experienced stressors were the danger of being killed or wounded, being fired on by the enemy, and seeing dead bodies. The threat of weapons of mass destruction was more stressful than actual events. This was understandable since few service members had any actual contact with the enemy. In addition to these stressors were the need for special immunizations and prophylactic drugs to protect against chemical and biological agents. The use of such measures may create uncertainty on the part of the service member regarding their potential health effects.

Moral

The US force that deployed was well-equipped and had a good sense of mission, a low frequency of disciplinary problems, and a high degree of cohesion. Alcohol and other drugs of potential abuse were not factors in this conflict because of Islamic laws forbidding their use in Saudi Arabia, where most US personnel were located.[7] There was also a high level of support from home, and a large number of mental health personnel were available for consultation in the theater.

Somalia: Operations Restore Hope (Dec '92–May '93) and Continue Hope (May '93–Mar '94)

Environmental

Disease is rampant in Somalia. The extent of disease, however, was unknown because of the lack of a medical establishment that could collect reliable epidemiologic information. Service members faced a lack of sanitation, diverse insect populations, a hot and humid climate, and large numbers of seriously ill Somalis.[8] In such a situation, there should be cooperative efforts among command, preventive medicine, and mental health personnel to solve operational problems. For example, some Marines in Somalia perceived insect repellent use as ineffective and unpleasant because it caused dust to cake on their skin and showers were not available.[9] Limitations of the agents (in this case, insecticide) and human responses to those limitations can be a problem in such an environment. Command monitoring of such behavioral aspects of a primarily preventive medicine problem should be a priority.

Psychological

The mission lacked clear policies for redeployment or recreational leave, and people faced austere, dangerous working conditions and the challenges of working with personnel with different languages, customs, and work methods.[10] Adherence to preventive policies and programs can also be affected by the operational environment. For example, Marines did not use their bed nets (suspended on poles above their cots) because the apparatus made them bigger targets. Psychological factors and preventive medicine policies also intersected when it was noted that service members forgot to take doxycycline (an

Figure 48-1. "On Watch, Somalia" by Jeffrey Manuszak. Security operations in a deployed environment may require service members to interact with, work with, and challenge people of different cultures, who may speak a different language and have unfamiliar customs. This may be particularly difficult, as in Somalia, when hostile actions had been taken toward US military personnel. Art: Courtesy of Army Art Collection, US Army Center of Military History, Washington, DC.

antimalarial drug) because of too little sleep and irregular schedules.[9]

Moral

Toward the end of the mission, public support for the US military's role in Somalia had eroded.[10] Personnel were confined to compounds, sorrowful over the deaths of 26 of their comrades in an ambush in downtown Mogadishu, resentful of an ill-defined mission, angry at some Somalis, homesick, and bored (Figure 48-1). Additional stressors were the lack of a return date and poor communication with home.[10,11]

Haiti: Operation Uphold Democracy (Sep '94–Apr '95)

Environmental

In Haiti, many US military personnel had to live in tents and cope with heat, insects, rodents, and tarantulas. Commanders tried to increase the supply of hot food, showers and latrines, laundry and recreational facilities, and air conditioning. There were significant risks to personnel of sexually transmitted and diarrheal diseases. There was also the need to use insecticides because malaria and dengue fever were considered health risks for the US personnel assigned to Haiti[12] (Figure 48-2).

Psychological

The passive posture forced on US personnel after they had been prepared for a combat invasion may have played a role in the number of early psychiatric presentations. There were 233 psychiatric visits and 15 air evacuations among 20,000 US personnel during the first 4 months in Haiti.[13]

Moral

It was difficult to gauge the public tolerance for this mission. There was relief that a combat invasion was avoided, but there was not any apparent enthusiasm for the mission, either. It seems that public interest in a deployment rapidly fades as the media discontinues its coverage.

Bosnia: Operation Joint Endeavor (Dec '95–Present)

As of 2000, the US deployment to Bosnia has taken on additional missions, such as the return of refugees displaced by the civil war. There is no end in sight to this deployment, so additional characteristics are bound to appear in the future.

Figure 48-2. US military operations often take place in the midst of local cultural activities. A Haitian man leads a donkey past US Army soldiers providing security for US Navy Seabee Engineers as they build a road and bridge in the outskirts of Port-au-Prince, Haiti. US Army photograph.

Figure 48-3. Deployed service members often must face dangerous tasks for which they might have had little or no training. Because conflict in the town of Zitinje in Kosovo had been high, US Army soldiers were required to search every home, animal pens not excluded, and confiscate any automatic weapons found.
US Army photograph by SPC Daniel Ernst.

Figure 48-4. US Army soldiers in Bosnia may be asked to perform civil affairs missions and other missions for which they may not have been trained. US Army soldiers patrol through a village of Donje Dubrave near Tuzla, Bosnia, to assess the attitude of the local people and to gather information.
US Army photograph.

Environmental

In Bosnia, the 20,000 troops of the United Nations Implementation Force faced environmental risks from severe cold and wet weather, poor roads, and undetected land mines.[14] They also faced health threats from poisonous snakes and spiders, environmentally related diseases, and foodborne, waterborne, and insect-borne disorders[15] (Figure 48-3).

Psychological

Some personnel specifically referred to the monotony of their existence.[16] The most frequently cited stressor was the unclear length of the deployment.[17] The initial reports from Bosnia detailed many personal difficulties, such as loneliness, and the stress of dealing with environmental factors. These included mud, cold, rain, snow, fog, unheated latrines and showers, prefabricated quarters heated by kerosene heaters (which require an all-night fire guard), and wearing protective clothing and battle gear weighing approximately 45 pounds in some duty areas (Figure 48-4).

Moral

US forces, as a part of a North Atlantic Treaty Organization mission, were sent to Bosnia on 20 December 1995 to enforce the Dayton Peace Accords and to help return refugees to their homes. It was announced that the mission would last 1 year.[18] As of 2000, US personnel are still deployed there. Only time will tell the effect of public opinion on the mission and personnel stationed there.

PSYCHOLOGICAL EFFECTS OF PREDEPLOYMENT, DEPLOYMENT, AND REUNION ON THE SERVICE MEMBER

It is hard to separate the factors that affect service members and those that affect the family. While there some factors that affect only the service member and some only the family, distinctions are somewhat arbitrary and most of what affects the service member will also affect the family.

Predeployment

When notified of a deployment, the individual must be prepared to move rapidly from a normal work, training, and home environment to a distant theater of operations. Commanders are usually not

well informed about the time parameters of deployments. Often, criticism and suspicion of commanders begins early when the soon-to-be-deployed do not know how long they will be away. Commanders are sometimes suspected of holding back information or lying. Departures are often delayed again and again; multiple good-byes are stressful and a bad way to leave home. Frequently, the national leadership is not helpful. Leaders may state that the deployment will begin and end on a certain date only to change the mission and its time frame as political and policy factors change. Such changes have important implications for the morale and stress level experienced by personnel and their families.

Specific policies and treatment procedures should be in place before deployment. As the reality of the deployment evolves, medical and psychiatric recommendations will need to be modified to deal with special situations and difficulties that will emerge. The need to institute preventive measures can meet resistance from command, individual service members, and caregivers. This is particularly true when psychiatric and behavioral issues are involved. Medical staff officers advising the highest levels of military leadership must be of appropriate rank, experienced in both the military and medicine, and trusted by the leadership.

Unit readiness should be known before deployment. Elements of unit readiness include determining if units have (*a*) been assigned appropriate personnel for their assigned authorizations, (*b*) trained well and regularly together, (*c*) reduced the number of individuals with significant medical profiles, and (*d*) have on file current family support plans. Each of these topics can be measured with existing data using personnel and unit readiness evaluation systems.

Depending on Department of Defense, service-specific, and mission-specific policies and needs, some individuals may be excluded from the deployment. All profiles that limit individuals from full duty should be reviewed. The potential need for mental health consultation and services should be anticipated, and the location and capability of mental health assets known.

Unfortunately, the outcome of deployments depends on tactical and political factors unknown at the time of deployment. Even if all the factors cited above are optimal, success is not assured. Commanders must face multiple demands at times of deployment. The requirement to act rapidly with limited logistical resources may require the commander to accept greater risk than special staff officers consider desirable.

The state of predeployment readiness will affect how a unit adapts to the new environment. Many education and training programs are available and should be used before notification of a deployment. From a psychological perspective, stress-relief plans should be considered by commanders for service members since almost all deployments have had long periods of waiting. Waiting and boredom go together and create unnecessary stress. Each deployed service member should have a plan to prevent boredom. Unit leadership responsible for assuring regular work schedules should also allocate resources and plan time for rest and recreation. This includes supplying reading and military-specific course material, organizing recreational excursions, encouraging sporting events, regular unit training schedules (eg, establishing rifle and pistol ranges), and physical fitness training.

All personnel (including medical staff) should be fully trained in as realistic an operational environment as possible. People should expect to work in austere and sometimes rugged environments. Such conditions will require equipment, technology, and treatment approaches appropriate to the conditions. The capacity to develop work-arounds and to use field-expedient solutions is critical to achieving success. Because the medical doctrines and terminology of the services often differ, an essential component of predeployment training is addressing differences in doctrine and equipment of the US services and those of its allies and the host country. Operational failures that result from inadequate or unrealistic training can raise anxiety and uncertainty to the level of major stressors. By taking the steps noted above, this can be prevented.

Deployment

Commonly Identified Stressors

There are a number of stressors that are common in almost any deployment. Many of the stressors that were identified by Menninger[19] during World War II are still present: uncertainty, separation, privations, bombing in noncombat areas, isolation, climate, danger, fatigue, and differences in status and privilege among ranks and services. Other stressors are the length of the deployment, the degree of security (which may not allow adequate communication with family members or friends), boredom, and interruption of future plans (Figure 48-5).

Figure 48-5. A soldier returns from a deployment to see his newborn son for the first time. Deployed service members often complain of missing births, deaths, and other important events in the lives of their family members. US Army photograph.

Phases of Deployment

Deployment may be thought of as occurring in three phases: an arrival period lasting days to weeks, a middle period that goes on for most of the deployment, and a terminal period that starts when service members are notified of their return date. Each period creates stresses on the service member that may affect the service member and last for a variable length of time. In addition, concerns about service and personal matters (eg, finances, unit procedures, career advancement, the future of one's life) do not disappear on deployment.

Passage of Time During Deployment

Time is a prominent issue in the prevention as well as the development of psychiatric disability in deployment and war. During World War II, personnel served for the duration of the war. During the Vietnam War, each tour was limited to 1 year (actually 13 months within the draft period of 2 years of active duty) and, because of this rotation policy, each individual experienced his or her own early, middle, and late portion of deployment. Within the year in Vietnam, characteristic patterns of stress were interpreted based on the time in country. For example, Morris[20] described the phases of time for 225 noncombatant psychiatric patients in Vietnam, referred for treatment at Cam Ranh Bay, an Air Force field hospital in a secured area. Referrals were most frequent during the initial adjustment period, around the end of the first month. Separation from families was the most important precipitating factor (Figure 48-6). A second wave of referrals was seen between the fourth and sixth months, and this was called the "over the hump" phenomenon because these psychiatric problems tended to disap-

Figure 48-6. "Two Minutes at Home" by SSG Brian Fairchild. In spite of modern communication media, such as e-mail and cell phones, a letter from home is still the most valued form of support to deployed service members. Art: Courtesy of Army Art Collection, US Army Center of Military History, Washington, DC.

pear once personnel reached the midpoint of their tours. The service members participated in a kind of social ritual involving the parceling of time. Each parcel was a landmark; the person could aim for it and so reduce tension and renew the sense of hope. This served as an apparently effective way to cope with everyday stress.

Pincus and Benedek[17] observed that once soldiers were alerted for deployment to Bosnia they were already "psychologically deployed." Their sense of being "truly" deployed changed once they were on the ground in Europe and again when they crossed the Sava River and saw the destruction that had been caused by the war.

People pay attention to and use time differently in ways that may or may not be helpful. Time boundaries are often unclear in operational circumstances, and stages of deployment are but rough indicators of psychological processes that may or may not occur in service members and family members.

Deployment Stresses for Women

Chapter 18, Health Care for Women in Mobilization and Deployment, provides an extensive discussion of health issues for military women who may deploy. This chapter will detail only issues of women exposed to combat and other trauma. A discussion of military women as single parents is covered under the section on children in this chapter.

During fiscal year 1991, active duty female soldiers made up 9.1% of the US Army. It was reported that 49,950 women were deployed to the Persian Gulf during Operations Desert Shield and Desert Storm.[21] The large numbers of active duty and Reserve component women that are likely to be deployed will require the military services to consider new policies for social and operational interactions of men and women and provide additional health care resources for women. For example, elements of privacy for housing may impact on unit cohesion.

The exposure of women to combat trauma is by no means new (Figure 48-7). Women are also exposed to high levels of trauma, particularly in modern warfare where battle lines not clearly defined. Of the traumatic experiences of women in the Persian Gulf War, among the most prominent are Major Cornum's experiences as a prisoner of war[22] and the Scud missile attack that produced female casualties.[23] There were five reported deaths of women from hostile causes in the Persian Gulf War.[24]

Among troops returning from the Persian Gulf War, Army females were more symptomatic than males in response to certain war zone stressors, at least during the immediate postdeployment phase[25] (Figure 48-8). Because certain variables were not

Figure 48-7. US Army women are assigned to some aviation units. Aviation missions are an important part of peacekeeping duties. In this photo, a female US Army officer prepares to fly a route reconnaissance mission over the city of Brcko, Bosnia.
US Army photograph by SPC Ricardo Gordon.

Figure 48-8. Military women must often carry weapons and perform the same duties as men. This soldier is on perimeter security duty with her M249 Squad Assault Weapon during a cordon and search mission in the village of Ugljare, Kosovo.
US Army photograph by SSG Milton H. Robinson.

controlled, such as prior sexual and criminal victimization experiences and sexual harassment during the deployment, these results should be interpreted cautiously. Some war zone stressors are likely to affect men and women differently as the nature of deployment missions continues to evolve. As women have more medical complaints and seek medical care more in civilian life than men, it should not be surprising that they would do so in military life.

In addition to the trauma of exposure to combat is the risk of interpersonal violence and sexual harassment.[26] Deployed military women were found to have higher rates of sexual and physical assault and sexual and verbal harassment than were typically found in civilian or peacetime military populations.[27] Sexual assault had a larger impact on post-traumatic stress disorder (PTSD) than combat exposure, and frequency of physical sexual harassment predicted PTSD symptomatology. However, the level of combat exposure was particularly low compared with Vietnam and the effects of combat and other stressors may differ across contexts.

The effect of deployment on spousal abuse has also been a matter of concern for the military. In a study of active duty Army personnel, a small increase was found in the probability of severe self-reported aggression for men and women who had deployed in the past year compared with those who had not deployed, and the increase was positively related to the length of deployment. The rate of severe aggression was from 3.7% to 4.1% for no deployment and increased to 5% for a deployment of 6 to 12 months. Thus, it was not solely the deployment that accounted for the severe aggression, but the longer the deployment the more likely the severe aggression becomes.[28]

During the Persian Gulf War, a significant number of mothers were deployed for the first time in American history, although there is no accurate count of these women.[29] A study[30] of deploying Navy mothers found higher levels of anxiety and parenting stress in women anticipating deployment than those who had recently returned. Single mothers reported more separation anxiety, less family cohesiveness, and less family organization than did married mothers. Maternal adjustment to a husband's deployment can vary with the type of deployment. For a routine deployment, maternal depression was highest at predeployment and progressively decreased at middeployment and postdeployment. For mothers whose husbands were deployed to the Persian Gulf War, significantly more depression was reported at predeployment and middeployment than at postdeployment, and more dysphoria was reported at predeployment than at middeployment or postdeployment. There has been very little recent research on the deploying single fathers and their children, although one study[31] found that single Air Force fathers adapted well to separation.

Prior War Zone Experience

Prior deployment experience, particularly to a combat zone, can have significant effects on an individual. In some cases, an individual may be "inoculated" or "sensitized." Inoculation occurs when an experience provides an individual the opportunity to become more resistant to stress, such as by learning new skills and overcoming personal fears, an attitude of "I can take it." Sensitization is the opposite. The individual has suffered because of a prior experience. It is not wise to assume that just because an individual has had deployment or combat experience that the person will do well or will assist others. Experienced individuals can provide useful positive leadership, but in some cases, they may become liabilities by providing a negative message to the inexperienced that their lives will be ruined by their deployment experience or that they will never return home. These messages can have an effect on the morale of others, particularly younger, inexperienced personnel.

In some cases, earlier trauma can influence the reaction to the current conflict, or symptoms might actually be a result of that prior conflict and not the current one at all. A review of the records of medical discharges for PTSD given by the Army to soldiers who served in the Persian Gulf War found that 35% of these soldiers had also served in Vietnam.[32] About one-half of this group developed PTSD in anticipation of deployment to the Persian Gulf and, presumably, exposure to a combat environment. Also, soldiers with prior Vietnam service had odds ratios for PTSD that were between 5 and 24 when compared with soldiers without Vietnam service. These results indicated that for some service members with prior war experience, the threat of another exposure is sufficient to exacerbate existing symptoms or provide a new episode of PTSD. However, it should be noted that some literature indicates that risk of later PTSD is not increased by trauma but is increased by having had symptoms of PTSD. Victims of a motor vehicle accident with a history of PTSD were 8.02 times more likely at 1 month and 6.81 times more likely at 3 months to have PTSD than those without a history of PTSD.[33]

Coping With Deployment: A Navy Example

On war ships, the tempo of maintenance, drills, and standing watch keep the crew busy. On hospital ships, in contrast, there are extensive periods when the medical staff has little or nothing to do. Yerkes[34] described the stressors and coping strategies of the personnel unexpectedly assigned to the naval hospital ship USNS *Comfort* during its deployment to the Persian Gulf in August 1990 (Figure 48-9). The deployment of large numbers of medical personnel to sea duty was unusual at that time. Thus, most of the personnel were not used to working as a team and new rules had to be worked out. Multiple ship failures contributed to a lack of confidence in the ship and to feelings of helplessness and defenselessness. Information and mail were both slow and sporadic. The ship traveled alone for most of its trip. The prevalent feeling of abandonment led to personal interpretations of events. Feelings of grief were also seen due to personal losses such as loss of loved ones, coworkers, well-habituated shore positions, and physical security. The duration of the deployment was unknown, and there was no established rotation date.

Figure 48-9. The hospital ship USNS Comfort (T-AH-20) is a large ship, about the size of a supertanker, with 12 operating rooms and a 1,000-bed capacity. The ship can be activated and crewed within 5 days, often by personnel who do not know each other. A vessel this large can present the command with problems of lack of cohesion among the crew as well as feelings of vulnerability when she travels unaccompanied by combat navy vessels. Unlike warships, on which the crew is constantly training and conducting maintenance, the medical crews of the hospital ships have long periods of boredom when the ship is not actually receiving casualties from ashore. US Army photograph.

Coping strategies included a variety of psychological defenses: humor (including pranks, songs, and stories), overeating, overexercising, and overworking. Group identification, after it formed, helped people feel that they were not alone. Space, time, and symbols such as different uniforms created boundaries. Some individual creativity was discouraged in favor of group norms. Some specific strategies recommended to help the crew adapt in future deployments included immediate assignment to a berthing and work center to create a sense of belonging, a visible administrative command, a flexible chain of command, training to foster an individual's sense of competency, and support for individuality and creativity as long as it does not interfere with group norms.

Stresses Encountered Before the Return Home

Some soldiers were frustrated at the perceived unfairness of their failure to return home following the end of the ground phase of the Persian Gulf War.[35] Some feared that they had been forgotten and were being left in Saudi Arabia. Among the presenting complaints were lethargy, suicidal and homicidal ideation, irritability, and nostalgia. In some cases, the symptoms became worse as a return date became more firm. This was described as "finish line fever," which may be a variation on or another name for short-timer's syndrome.

Substance Abuse

Drug and alcohol abuse must be considered as potential problems in any deployment. In the Vietnam War, drug abuse developed as a significant military and societal problem. It had not been anticipated and was, for a period, treated as a psychiatric problem. From 1960 until the Tet offensive of 1968, there was an extremely low rate of psychiatric casualties. As American involvement in combat intensified from 1966 through 1968, this rate relatively remained low but began to rise in late 1969.[36] Much of this rise in psychiatric casualties was based on drug abuse. Drug abusers were sometimes placed in the psychiatric category of character and behavior disorders. By 1971, a full-scale heroin epidemic had been recognized in Vietnam as well as in the United States.[37–39] The availability of relatively pure, cheap heroin made it the drug of choice. There was a difference of opinion about whether the increase in drug abuse was due to military duty in

Vietnam or was a minor problem and unrelated to the US presence there.[40] Studies demonstrated that combat units were no more likely to have a high percentage of drug abuse (measured by positive urinalyses on leaving Vietnam) than support units. However, by about August 1970, senior commanders recognized that heroin use by their personnel was a serious problem.[41] One of the major responses to the drug epidemic in Vietnam was to institute a urinalysis screening program for service members leaving Vietnam, and drug treatment programs were initiated throughout the service worldwide to handle increasing problems of drug and alcohol abuse.[38]

These factors demonstrate the influences of the overseas context but also indicate that trends in behavior found their most basic roots in American cultural behavior. Control of the illegal drug use in Vietnam required the combined efforts of many branches of the military services, including commanders, law enforcement and treatment agencies, and personnel to plan, administer, and evaluate the urinalysis program, perform epidemiological surveys, and conduct drug abuse education programs. It also encompassed major research efforts in Vietnam and the United States.[41] Prudence requires that military medical personnel be prepared for future drug and alcohol abuse problems that will create their own unique challenges in a deployed environment. Various programs to provide alternative behaviors should be provided (eg, hobby shops, USO [United Service Organizations] entertainment and tours, sports competitions, and physical fitness facilities).

Surveillance During Deployment

A mental health surveillance system is needed to enhance the capability of current surveillance methods so that an assessment of psychosocial factors is possible. A targeted psychosocial assessment can produce recommendations to counter effects of stressors. These countermeasures can later be assessed for effectiveness. Results can be compared with the lessons of other deployments and a classification of stressors and countermeasures developed. Such a model should involve both preventive medicine and behavioral science personnel, blending the traditionally medical with the psychological. Such a model should be more effective in preserving the health of service personnel than either approach alone.

A surveillance procedure to monitor injuries, diseases, and accidents, as well as psychosocial problems (eg, substance abuse, low unit cohesion), may help highlight specific commands or units that are under greater stress and would benefit from psychiatric consultation (Figure 48-10). During the arrival period, personnel are likely to be affected by the loss of the familiar home and work environment, cultural change, jet lag, and sleep disturbances. During the middle phase of the deployment, surveillance should include outcome review of medically evacuated patients to determine if there are particular types of complaints or behaviors that are likely to result in an individual being evacuated. It is then critical to establish whether patients wishing to return home consciously or unconsciously developed a particular symptom pattern (sometime called an "evacuation syndrome") to achieve an acceptable escape from the stressors of deployment. If such a situation develops, it will be necessary to determine the appropriateness of medical evacuation policy guidelines. In the terminal phase of the deployment, once service members know they are going home, vigilance on the part of service members, command, and the medical staff becomes especially important. It has been anecdotally noted that this is a time when some service members become careless and may be more prone to injuries and preventable disease.

An example of a clinical mental health monitoring effort was undertaken in Somalia by an Army combat stress control unit, a corps-level asset that

Figure 48-10. These soldiers are performing a "spur ride." The event is a tradition throughout cavalry units in the US Army. Spur candidates run around the camp to different events at Camp Demi in Bosnia. The purpose of the event is to build teamwork and confidence in the officers. Such activities are often important elements in building and maintaining unit cohesion.
US Army photograph.

supplements the division mental health section.[42] During predeployment, the stress control unit attempted to forecast the types of cases they would see and the types of medications they would need. They had expected to find service members traumatized by seeing starving children or dead bodies. Instead, they found stresses similar to those of low-intensity guerrilla warfare: changing rules of engagement, shooting incidents in which US personnel fired on Somalis, threats of violence, crowd control, and removing weapons from Somalis. They worked with preventive medicine personnel to visit the battalion aid stations, offered to see patients, and provided classes and consultations. This system provided an informal method of mental health surveillance. Classes focused on delineating the stresses on the soldiers, their reactions, and coping methods. Differences were found in the morale of the troops as the mission progressed and different stressors operated at different times. Among those encountered were environmental (eg, heat, sun, wind, noise), operational (eg, restricted travel, restricted missions), and personal stresses (eg, separation from home, boredom, ethical questions, lack of communication with home). Importantly, they also described the differences between psychiatric evacuations and attempted administrative actions that would have used the medical system, if possible, to remove unwanted service members from Somalia.

Reunion

There has been less research on the reunion phase of deployment than on the predeployment phase and the deployment itself. Many have written about the problems that service members have on their return, and the psychological and somatic symptoms that some suffer. There has been little focus on the less-symptomatic aspects of deployment and reunion, such as how individuals integrate their experiences (particularly of war and combat) into their own development in a positive way. Returnees should be advised to keep an open mind and not be committed to the outcome they have anticipated. Soldiers returning from Vietnam were advised to anticipate difficulties they might have in coping to help them reintegrate with families and integrate into new military units.[43]

With the ready availability of airlift from distant locations to home, reunion can now occur very quickly. Even after the end of World War II, though, it appeared that military personnel were also quickly being returned home. Menninger noted that after the end of World War II, men were "catapulted"[19p365] back into civilian life. Even weeks on a ship returning home were short when compared with years in a war zone. Many had readjustment problems and needed to dissipate hatred, envy, and resentment.[44] During a combat deployment, fighting men endured the hell they were in by idealizing people and situations at home. The reality of their home situation was obscured by long separation. Both loved ones and veterans needed extra patience and understanding to weather the period of "factual refocusing."[19p367]

Postwar Physical and Psychological Symptoms

Somatic and stress symptoms may occur following deployment. A small percentage of war veterans have experienced somatic syndromes.[45] These have been associated with a variety of descriptive names depending on the conflict and most prevalent symptom. After the US Civil War, Da Costa's syndrome was noted; in World War I, effort syndrome; in World War II, battle fatigue, combat exhaustion, or operational fatigue; following the Vietnam War, post-Vietnam syndrome; and following the Persian Gulf War, as yet unexplained illnesses. These syndromes have been described as characterized by fatigue, shortness of breath, headache, disturbed sleep, and impaired concentration. Regardless of the name of the syndrome or pattern of symptoms, their lists look more alike than different, and they suggest a common core of symptoms associated with war-related medical and psychological stress.[45]

Depressive disorders were a significant problem for enlisted personnel returning from Vietnam. One quarter had some depressive symptoms, with 7% meeting criteria for an affective disorder. One third of those who had a psychiatric diagnosis had received psychiatric care since their return.[46] A 3-year follow-up study[47] of a randomly selected sample of 571 Vietnam veterans and 284 matched civilian controls provided some evidence that the depression found 1 year after combat was transient and that the effect of combat as a predictor of depression diminished over time. It should be noted that almost all studies of Vietnam veterans suffer from limitations imposed by the course of the war itself. During the last phase of the war, combat exposure was limited and morale was deteriorating, both in Vietnam and in the United States. Hence, studies of veterans who served in Vietnam at different times are difficult to interpret in terms of the impact of their experience in Vietnam and are difficult to

compare with studies of combat veterans of other operations such as the invasion of Panama in 1989 or the Persian Gulf War. This is particularly true since the formal psychiatric diagnostic classification system was in the process of radical change during the 1970s. In 1980, the diagnosis of PTSD was introduced into the 3rd edition of the *American Psychiatric Associations' Diagnostic and Statistical Manual, (DSM-III)* as a result of a complex interaction between clinical experience, and political pressure.[48]

Postwar Readjustment

Bey[49] wrote of the psychological adjustment of the service member to Vietnam as well as the return home. He is one of the few authors who noted the difficulty personnel had in returning home, breaking bonds with fellow service personnel in Vietnam, missing friends, and feeling estranged at home. He attributed cases of adjustment depression to these types of losses, suggested that this reaction be treated as normal, and encouraged talking about and working through the relinquishing of ties with wartime friends. The camaraderie that helps to maintain closeness within a unit can sometimes be a later source of grief.[50] Extraordinary bonds that have been made have to be broken. Following the Persian Gulf War, readjustment was seen as easy because of three factors: (1) the low number of casualties, which resulted in less strain than if there had been mass casualties, (2) the support of the American people, and (3) the lack of drugs of abuse and alcohol in the theater.[50]

Reunion Briefings

Some Navy ships have a reunion briefing, generally conducted by the chaplain. The chaplain is likely to emphasize possible changes in family dynamics. This may include how a spouse has changed, the management of finances, and the disciplining of children. The sailor can then focus on the impact of newly gained family independence and changes in children's rewards and punishment.[51]

Readjustment of Female Veterans

The readjustment of female veterans has received little attention. Structured interviews were conducted between 1983 and 1985 with 50 female nurses who served in Vietnam from 1965 to 1973.[52] In the year immediately after the war, 12% reported minimal reactions, 8% had major emotional reactions including alcoholism and severe depression, while 80% had mixed reactions. Forty percent had high levels of involuntary intrusive thoughts, and 32% had avoidant behaviors. In subsequent years, including the time of the interviews, the group with an initially high level of intrusive thoughts (40%) had declined to 22%, and the level of avoidance declined from 32% to 14%. Those nurses who continued to have the highest levels of PTSD reported that they experienced an intense personal and professional year in Vietnam and faced poorly effective social networks at home. This study indicated that while nurses did not undergo the battlefield trauma experienced by men in the field, their experiences of witnessing trauma produced the same need to talk about the war as other veterans had and that the "toughness" that they developed to have been a veneer to cope with the stresses of the situation.

Shared Experiences and Memories

Memories of deployments or wars are often portrayed as a source of negative memories. The memories that are cited are often related to the development of PTSD or other forms of distress. Certainly, traumatic experiences that occur during war can result in PTSD; however, most who serve do not develop PTSD. Many memories of these experiences are positive. There were many descriptions of positive experiences in the Persian Gulf War and later US military operations.[29,53–56] Humor has kept up many spirits during difficult times in the military.[57] Informal "group therapy" sessions held by military physicians that allowed people to vent their frustrations and anxieties were important, as was group support from peers and from home.[58]

PSYCHOLOGICAL EFFECTS OF PREDEPLOYMENT, DEPLOYMENT, AND REUNION ON FAMILY MEMBERS

Spouses

There are many factors that determine family responses to deployment.[59] Among these are the deployment itself, as well as family, spouse, and child factors. Deployment factors include its length and frequency and whether it is a wartime or peacetime deployment. Family factors include the age and sex of children, parental attitudes, availability of social supports, history of coping skills and adaptability,

and past experiences with separation.

Predeployment preparations can often isolate the family from the service member quickly. Many operational deployments occur on short notice. Unscheduled deployments are considered more stressful than scheduled ones.[60] Unscheduled (and sometime scheduled) deployments often require an intense period of unit preparation, which gives the service member less time for personal and family preparation for the impending absence. There are often additional training requirements that can keep the service member in the field for long periods of time and some that require the unit to temporarily relocate to another installation for special training. Most spouses adapt well to the stress of deployment.[59] Stresses in families, however, can lead to clinical problems that must be addressed by the health care system. A spouse's role becomes that of a single parent and decisions are made by that person rather than by the departed spouse or the couple. New skills must be learned and new responsibilities shouldered by the spouse and the family left behind. The relationships with children can change when children challenge discipline and have to fulfill some parental roles.

During the Persian Gulf War, both younger and older spouses of Army soldiers experienced high levels of emotional discomfort, albeit for different reasons.[61] There was a perception that available family support services favored younger spouses and ignored the problems of older spouses. Spouses rated their expectation of what the Army should provide them while their spouses were deployed and their use of and satisfaction with 15 different types of community services before and during the deployment. Groups with the highest level of distress also had the highest ratings of expectations of the Army and the highest unsatisfactory ratings of the use of support services.

After the war, spouses of junior enlisted soldiers who remained on active duty were less likely to have had unrealistic expectations of the Army than the spouses of those soldiers who left active duty. For mid-level noncommissioned officers, the main predictor of retention was the spouse's wish that the soldier stay in the Army.[62] In some cases, these expectations of spouses may be impossible to correct, but it does underscore the importance of commanders providing accurate information to families before, during, and after a deployment. It is important to avoid statements that will lead to unrealistic expectations.

A survey was conducted of 378 wives of enlisted Army soldiers deployed to Somalia for 2 to 5 months.[63] Changes in marital satisfaction and four stressors that could have affected the wives during the deployment were investigated: pregnancy, death of a friend or relative, loneliness, and difficulty communicating with the husband. The effects of the various difficulties were less stressful in terms of their impact on marital satisfaction than is often assumed, even for marriages that might be considered relatively unstable. The investigators concluded that being stressed during a husband's deployment was not necessarily enough of a problem to detract from marital satisfaction.

Family support groups have become a regular feature of the military services.[59] When a service member deploys, the spouse (usually a wife) is encouraged to participate in a spouses' support group, which is often affiliated with the rear detachment of the unit. This rear detachment can facilitate contact between members of the deployed unit and the families and perform valuable advocacy services for the spouses. We do not know of any research or reports on support groups that have included husbands of deployed service members.

Bey and Lange[64] interviewed 40 spouses whose husbands had deployed to Vietnam and described the stresses of these women. A wide variety of different stressors were described during the time before deployment, the deployment phase, and following the husband's return. When the husband received orders to deploy, they described feelings of numbness, shock, and disbelief even though they knew logically that the husband would receive orders. They noted increasing distance between themselves and their husbands as the time for departure neared. During the separation, wives complained of their awkward social situation. Friendship and even contact with men was often viewed negatively and as infidelity by some. They described themselves as estranged from others who had little empathy for their plight. Those who were in a "waiting wives" group were an exception. Most said that these groups helped to alleviate stress but at other times increased it. The social situation of the civilian milieu also increased their stress in that the commonly held view was that the war was stupid and futile. Those who expressed their discomfort through somatic complaints were sometimes rebuffed by the medical staff who saw them as demanding but physically well. Failure of the medical professional to appreciate the problems created by deployments for these spouses can needlessly serve as an additional stressor.

Reunion can eliminate some stressors, but it often creates additional ones.[59] Adjustments required

during separation are often undone after reunion, sometimes not to everyone's satisfaction. New skills and independence manifested by spouses and children may not be appreciated by and may actually be seen as threatening to the returning service member. The discipline of children can be a particularly difficult adjustment area for families. Children may also find it difficult to include the returning parent into relationships formed with the remaining parent.

Children

Parental deployment puts additional stresses on children that often are not recognized by the parent.[59] Constancy of the relationship with the departed parent is broken, children can blame themselves for the parent's absence, and they can be angry at the military for taking the parent away. Symptoms in children may depend on their stage of development, but some of the most frequent complaints are abdominal, followed by sleep disturbance, headaches, decreased motor activity, withdrawal, moodiness, and school phobia.

Internalizing (distress that is directed inward) and externalizing (distress that is directed outward) behaviors of children were compared for children of fathers on routine deployment and the deployment to the Persian Gulf War. For children whose fathers were deployed during peacetime, both internalizing and externalizing behaviors declined from predeployment to postdeployment but stayed high throughout for children whose fathers were deployed to the Persian Gulf War.[65] In a study of 1,601 children of soldiers deployed to the Persian Gulf War, questionnaires were completed by the parent who stayed at home with the child.[66] Sadness was commonly reported, but few parents considered their children had problems severe enough to warrant counseling. In a review of the literature on the military family, brief father absences (less than 1 to 2 years) were associated with temporary emotional and behavioral symptoms in family members, primarily wives and sons.[67]

SURVEILLANCE RESEARCH DURING DEPLOYMENT

Surveillance Research in the Baltic States

When psychiatric illness or disturbance is infrequent, a surveillance system that uses only case counts will not be satisfactory for determining the psychological status of those deployed. Another mental health and behavior surveillance system, one in which behavioral scientists interview, give paper-and-pencil surveys, and observe individuals, was used on the Bosnia deployment.[68] Data were collected on approximately 300 soldiers on a 6-month deployment to Croatia in November 1992, a second group of approximately 200 soldiers deployed to Croatia in March 1993, and an Army infantry unit in Macedonia in July 1993 on a border patrol mission. Topics covered in the surveys included sources of stress, physical and mental health outcomes (including morale), and individual and organizational factors that might influence responses to stress. Extensive studies of a subgroup provided examples of the stressors service members faced at each stage of the deployment.

The major stress factor in the predeployment phase was uncertainty about who was going and when and getting to know peers and leaders. During the middeployment phase, one critical stress factor was boredom due to lack of meaningful work in the hospital. Other stressors included restrictions by command about outreach programs and a perceived lack of support from rear echelon support elements. The key stressors of the late-deployment period were concerns about the future location of the unit after they returned (some units were moved and some de-activated after the conflict) and whether the service members would have to move their families. Analysis of the stress factors produced a set of stressors and countermeasures (Table 48-3). The major stressors identified were isolation, ambiguity, powerlessness, boredom, and threat. Countermeasures included steps recommended for leaders to reduce these stressors. This report provides one model for the development of hypotheses and analyses in deployment research.

Post-Bosnia Medical and Psychological Surveillance

The national leadership would like to have better knowledge of the medical status of service personnel before and during deployments. With the support of the Congress, the Department of Defense is attempting to implement a screening program in which service members departing from Bosnia receive a medical fact sheet and a physical examination, including a personalized review of any findings (see Chapter 49, Medical Issues in Redeployment).

Changes in health status are documented in a service member's medical record. The follow-up should be scheduled within 30 days of returning to the United States, and within 90 days personnel should receive a Mantoux tuberculin test and undergo psychological testing.[69] As a part of the Bosnian rotation, extensive screening programs for medical and mental health conditions are being put in place. Screening takes place before new personnel join the implementation force, during the deployment, and as they pull out to return to their home base. This should provide the Department of Defense with information on the health status of its personnel that could be used to investigate postdeployment health problems. This is an attempt to avoid the lack of data for investigations in the past as happened with Agent Orange in the Vietnam War and the controversial Persian Gulf War illnesses.[70] It is essential that a surveillance system should also track illegal drug and alcohol abuse.

Psychometric Tests and Epidemiology

Part of the difficulty in understanding the relationships between stress and either distress or illness in psychiatric epidemiology is that of defining what is a case.[71,72] Symptom measures on questionnaires do not constitute a diagnosis and may be misleading. While symptoms of depression do not necessarily constitute a case of depression, many questionnaires attempt to measure symptoms of depression, anxiety, and PTSD because ignorance of the etiology of many psychiatric illnesses makes symptoms the defining criteria.[73] This situation results in problems relating to sensitivity and specificity, problems quite familiar to those who have used urinalysis to identify drug abusers.[74] Since psychiatric diagnosis carries stigma, false positives are particularly undesirable. Thus the development of truly effective psychiatric surveillance programs continues to be a considerable technical challenge.

TABLE 48-3

PSYCHOLOGICAL ISSUES IN PEACEKEEPING OPERATIONS

	Stressors	Countermeasures
ISOLATION	Physically remote locations	Give accurate and useful information—what to expect
	Communication problems	Provide briefings by those who have been there
	Multiple units in task force	Encourage use of e-mail, phone, fax
	Individuals cross-attached	Conduct team-building exercises
AMBIGUITY	Mission not clear	Give clear definition of mission
	Command structure confusion	Hold frequent meetings, "commander calls" to provide information and answer questions
POWERLESSNESS	Rules of engagement restrictions	Explain and justify rules of engagement
	Limited activity/productivity	Provide education and self-development options
	Foreign culture and language	Provide classes on host culture, language
	Relative deprivation: "double standards"	Assure fair access to goods and services, explain discrepancies honestly
BOREDOM	Repetitive, monotonous routine	Use creative training programs
	Shortage of professional work	Establish personnel exchange programs with other forces
	Lack of meaningful work	Self-development and education programs
THREAT OR DANGER	Threat to life or limb	Provide sound training, equipment, policies
	Mines, snipers, disease	Keep soldiers informed about physical threat
		Offer regular debriefings

Adapted from: Bartone PT, Adler AB. A model for soldier psychological adaptation in peacekeeping operations. *Proceedings of the 36th Annual Conference of the International Military Testing Association.* Rotterdam, The Netherlands; 1994: 33-40. As cited in: US Army Medical Research Unit-Europe, Walter Reed Army Institute of Research. A Model of Psychological Issues in Peacekeeping Operations. WRAIR; 18 March 1996. Research Report #23.

COMMAND AND MEDICAL CONSULTATION

One of the primary duties of a special staff officer is to educate the commander in the area of the staff officer's expertise. Among the major tasks of medical staff officers throughout predeployment, deployment, and reunion are assessment and consultation. Consultation in a military environment is the process of providing advice to commanders and members of the commander's staff on issues that affect the health and performance of military personnel in their organization.[75] Thus, the unit of consultation is the group and not the individual.

Consultation is a two-way street, one that involves interchange between the consultant and the commander, staff, service members, and families. Without such interchange, the consultant is likely to have little understanding of the unit and its problems, and the likelihood of the consultant's advice being followed will depend in some degree on the confidence the command has in the consultant. Such confidence is based on the development of a mutually satisfactory relationship. To be deserving of command support, the medical officer must have a deep understanding of the relevant biomedical and behavioral risk factors associated with the deployment being planned and the overall military mission. The primary mission of the medical officer and other special staff officers is to build this understanding with the line officers.

The appropriate outcome of the consultation process is the incorporation of the medical and psychiatric recommendations in a form that can be supported by the commander as elements within operation plans. Such plans involve complex systems that will require those medical and psychiatric recommendations to interact with other technical requirements.

Infectious Diseases

Infectious diseases that are endemic in the deployment area but rare in the United States are a significant threat to military forces. Deployments will almost always require the medical staff to recommend procedures to prevent or lessen the effects of problems with infectious disease and biological and chemical agents. Sometimes this advice will entail that the service members take prophylactic medications. There are significant psychological factors that will inhibit adherence with medical recommendations and policies. To achieve better acceptance of medical advice and compliance to its requirements, those providing the advice must understand the psychological factors underlying the resistance or acceptance of medical recommendations. Frequently, this is based on a lack of understanding of the technical basis of the medical recommendations. Failure to appreciate limitations of preventive programs may result in angry and disappointed commanders and will promote resistance to further medical recommendations.

The use of negative reinforcements or punishment to assure compliance may produce complicated aggressive behaviors and destructive actions. To support a program that is geared to available resources and assure compliance, is it critical that the intervention being recommended be well understood in terms of both intended effects and side effects. Such programs require careful scientific monitoring to assure they are effective and cost-efficient.

Chemical and Biological Agents

The medical and military responses to chemical and biological warfare are complex. Physicians must be responsible for the diagnosis and treatment of the psychiatric and organic consequences associated with biological weapons. They and other medical professionals must provide reassurance and care required to maintain morale in the presence of such a threat. One of the most important roles of physicians is to assist the leadership, whether military or civilian, in considering the psychological and social impact of terrorist or military attacks on US military personnel or populations. Primary prevention efforts by all concerned are critical in preventing panic, counterproductive responses, and demoralization in the attacked community.[76] Examples of counterproductive actions would be the inappropriate use of unproven drugs, inappropriate vaccination that results in acute side effects but provides minimal protection, and inappropriate evacuation and quarantine. Risk communications plans (see next section) must be developed so that the population threatened may be accurately and effectively informed concerning the nature of the risk and appropriate responses.

Prophylactic Medications

If they have the expertise, mental health and preventive medicine consultants must advise commanders how to effectively communicate the risks and benefits associated with using vaccines and prophylactic agents.[77] This information must be provided to service members before and during

the deployment phase of an operation, as well as at the homecoming and long afterward. If the mental health and preventive medicine consultants do not have specific training in risk communication, it would be appropriate for them to advise the commander on how to find such expertise. Risk communication requires great care in the use of language that is accurate and can be understood by the service member.[78]

Risk communication must be interactive. Those instituting programs must understand what information the subject population requires and how they understand the information. It is sometimes difficult for those who have knowledge of risks to communicate those risks to service members in such a way that the risks and benefits are understood and supported. Risk communication should help to explain to service members that they are not being used for experimental purposes or otherwise being put at more risk from the drug than they would be from the enemy or the environment. One of the goals of risk communication should be to create confidence in service members that the command has a true concern about their health and well-being. It is likely that risk communication will occur in an environment in which the media may report material incorrectly or in a way that would undermine such confidence. Service members who lack confidence in the intervention may later attribute a variety of later problems to having received a medication or vaccine, regardless of the safety profile of that medication or procedure.

PREVENTION AND TREATMENT OPTIONS

Preventive Interventions

The Institute of Medicine proposed a prevention model for mental health disorders in 1994 that encompasses three echelons of prevention interventions: universal, selective, and indicated.[79] Universal interventions can be performed by many individuals and are considered appropriate for everyone. Interventions can include education programs that provide information about the environment, principles of leadership, or the purpose of specific deployments.

As deploying units are identified, members may be assumed to be at higher risk for developing a mental health problem. Selective interventions may be aimed at the groups at highest risk for potential adverse outcomes. A variety of mental health and general health care providers may become engaged in this effort. Interventions may include creation of family support groups, stress management lectures, suicide prevention lectures, and routine informational debriefings after missions. When such programs are designed, however, measures of need and effectiveness should be developed at the same time. Studies documenting the positive and adverse effects of programs would also be welcome.

Indicated interventions are appropriate for individuals who have been specifically identified as being at high risk of developing a new or recurrent mental disorder but are without a clinically active illness. These may include individuals with diagnosed-but-stable disorders or with significant family, occupational, or drinking problems. These problems may predispose the individual toward developing a diagnosable disorder or experiencing a recurrence of a mental disorder, and early intervention may avert the occurrence or worsening of the disorder. Early intervention is a key concept behind the traditional treatment intervention of military psychiatry. There is a need for additional research concerning the effectiveness and cost of such early interventions.

The best possible working group of available personnel should assess risk and design interventions that will minimize distress and disability. Such a group might consist of preventive medicine officers, flight surgeons, psychiatrists and other physicians, psychologists, social workers, chaplains, staff planners, enlisted leadership, and commanders. The programs should encourage cohesion, social support, and information about the mission; it should generally deal with needs reported by ordinary service members and their immediate supervisors. Once an individual's problem reaches the threshold of a diagnosable psychiatric condition, physicians and mental health personnel should become involved in the direct care of that patient.

Training of Medical Professionals

It is likely that inexperienced personnel will be in positions of responsibility in future deployments, as they have been in the past. Inexperienced medical personnel may be in regions in which they will have little familiarity with endemic diseases. These physicians may not have been exposed to extreme violence or its consequences. All staff personnel will be called on to develop some understanding of the effect of the local culture on deployed service members. They would also be required to understand how service members affect the local culture. Reservists called to active duty may have little opportunity to

become familiar with these issues. Regardless of service members' level of experience, each new deployment brings its own problems. Part of the primary prevention function among the medical community involves educating each other and the development of flexible doctrine and policy that can be applied to other situations. This is particularly true of joint operations where there are significant differences in the professional jargon and nomenclature of equipment between the services, which can sometimes make even basic communication difficult.[75] Increasing the amount of training in joint operations will make this less of a risk. Currently, the US military medical departments have joint medical training for medical students at the Uniformed Services University of the Health Sciences and for residents, hospital staff, and field units. In addition, the medical evacuation chain has always been a joint service operation. It will be important, however, for Reservists to be included in joint training or to make special efforts to teach them in such procedures as soon as they are involved in preparation for deployment or in deployment itself.

Booklets, Pamphlets, Training Manuals, and Models

During recent deployments, the Headquarters, Department of the Army has prepared a number of information-transmitting media for soldiers and their families. Some of them are only a few pages and are made to fit in the pocket of field gear (for example, titles include *Stress Dimensions in Military Operations Other Than War*, *When the Mission Requires Recovering Human Dead Bodies*, and *Critical Event Debriefing* and others). Other examples of material created for such training are the Army's relocation and deployment books, a course for organizing family support groups during the soldier's absence. The US Army Community and Family Support Center, a headquarters element of the Army staff, in 1995 prepared a series of books for families called Operation READY (Resources for Educating About Deployment and You) to prepare soldiers and families for deployment. There are six binders entitled Pre-deployment Ongoing Readiness, Family Assistance Center, Family Support Group Advanced Training, Post-deployment Homecoming Reunion, Army Readiness Handbook, and Children's Workbook. They were distributed Army-wide with five training videos. In addition to these Army publications, commercial firms have published a wide variety of self-help pamphlets for children and spouses.

Peebles-Kleiger and Peebles[60] described a model of peacetime deployment used by the Navy for family education and intervention before, during, and after the Persian Gulf War. This model was based on an "emotional cycle" of adjustment to the various phases of deployment. They cautioned against using a peacetime model for wartime deployments because wartime deployment is unexpected, disruptive, and hazardous and involves the anticipation of trauma, which increases the level of stress.

The development of educational materials is often based on specific models or theoretical constructs. While models can be useful for conceptualizing knowledge about stresses, vulnerabilities, and interventions, they can be limiting in that they do not take account of the diversity of individual differences and situations. Some models overemphasize the risk factors for negative outcomes of individuals and pay less attention to possibilities of personal gains that come from coping with stress. Rutter has provided thoughtful discussion of the interplay of adversity, risk, and resilience in individuals at various stages of life.[80] In his view, risk factors operate in a variety of different ways, and people respond to adversity based on their own personal history, their own stage of development, and the external circumstances. Resilience may thus reside in the social context as well as in the individual. While he notes that there is some knowledge of what the risk and protective factors are, we have little understanding of the processes they reflect or how to use them to increase resilience. The processes by which interventions work are largely untested.

It is Department of Defense policy to implement combat stress control (CSC) policies.[81] CSC is seen largely as a preventive activity and attempts to foster cooperation between preventive medicine and the mental health disciplines (see Chapter 16, Combat Stress Control and Force Health Protection). Army field manuals address issues of combat stress and provide the Army doctrine for mental health operations in the field at the unit level, for separate combat stress control detachments, and for leaders.[82,83] The US Marine Corps combat stress doctrine is published in US Marine Corps Fleet Marine Force Manual 4-55 (13 April 1992).

Debriefing as a Preventive Mental Health Strategy

The group interview technique that is commonly known as a debriefing has become popular in a variety of military situations, particularly following exposures to traumatic events. It is hoped that de-

briefing after a traumatic event will help to prevent future psychiatric disorders, such as PTSD and other forms of distress. As the Department of Defense directive states, CSC unit personnel "will evaluate units after exceptionally stressful events and conduct Critical Event Debriefings, as indicated."[81]

There are now numerous references in the military medical literature to situations in which some form of debriefing has been used.[13,84–91] Debriefings seem to be uncritically accepted in today's military as necessary and beneficial. Toward the end of the Persian Gulf War, debriefings were extensively provided as a preventive measure.[35] It is important to note, though, that documentation of the efficacy of debriefing and other recommendations and interventions is generally lacking. The inference is sometimes drawn that PTSD is the most common outcome of stress, which also has not been proven. Other outcomes, such as acute stress disorder, dissociative disorders, adjustment disorder, depression, anxiety, and substance abuse disorders, are often not even considered.

There is a limited theoretical basis for debriefing in the prevention of psychiatric disorders. Application of debriefing around events described as "critical" can be misleading in a number of ways to the practitioner, the subject, and the commander. First, although there are many events that are called critical, there are always other issues that are also important and deserve attention, such as an event or policy that has affected unit morale. Second, the implication for some will be that once the preventive debriefing has been held, there is no further need to worry about the longer-term effects of the critical event. Such beliefs could lead the subject or the practitioner to overlook symptoms that develop later. Third, there is no standard evaluation technique by which to judge the effectiveness of the procedure.

There is a growing body of literature on this subject that includes controversy about the efficacy of the procedure. Psychological debriefing following a traumatic event does not, in itself, guarantee that its recipients will suffer no future psychological disturbances. Studies of group debriefing after extreme events have failed to show a significant long-term effect of this technique, but the heterogeneity of the interventions studied and the length of time between debriefing and its assessment may make a proper evaluation of findings difficult.[92] Israeli soldiers were provided a historical group debriefing within 72 hours after having been exposed to combat. Anxiety, self-efficacy, and combat evaluation were measured before and immediately after the sessions. Debriefing was followed by a reduction in anxiety, an improvement in self-efficacy, and an increase in homogeneity of the group. The investigators concluded that the effects of the debriefing might have been attributable to enhanced group cohesion or to the beneficial effects of the debriefing.

A study of 62 British soldiers who served in the Persian Gulf War, found evidence suggestive of PTSD in 50% of them following debriefing.[93] British body handlers reported subjective benefit from debriefings but had no fewer symptoms compared with those who were not debriefed. In addition, critical incident stress debriefing and management teams could be a hindrance to first responders in biological and other disasters.[94]

Among the values of the debriefing, as practiced by Shalev[95] and Koshes and colleagues[96] are the opportunity of the debriefer to hear the perspective and experiences of those participating in the group interview and the opportunity of the participants to hear the thoughts, feelings, and descriptions of events provided by others in the group. Shalev provides a good discussion of the goals of psychological debriefing and Koshes and colleagues provide examples. Debriefing limited numbers of key personnel may serve as an assessment tool in determining possible problem areas regarding unit morale, cohesion, and function. Instructing commanders to perform debriefing in a fact-finding, lessons-learned format will also foster unit cohesion and a sense of mission. Whenever possible, unit self-reliance should be encouraged rather than unit reliance on external mental health resources.

There are many other activities that are appropriate for victims instead of or in addition to a debriefing. McDuff illustrated the value of a recovery environment for victims in several different hostage-release scenarios.[97] The postcaptivity environment should attempt to promote cohesiveness within the victim group, isolate the victims from external groups, promote abreaction, and provide an opportunity for rest. Interventions may help by restoring the sense of power to the victim and reducing feelings of isolation, of helplessness, and of being dominated. These procedures provide a structured termination process for the group, which may help in the individual's long-term recovery.

Use of Psychotropic Medications

Use of psychiatric medications in a deployment setting is controversial among military psychiatrists, and there are differences in medication policies among the services. With few exceptions, Navy

and Marine Corps personnel will not be deployed when taking psychiatric medications. Frequently, these units are widely dispersed and psychiatric follow-up is not routinely available. Army personnel are more frequently deployed while taking these medications. The Army routinely deploys in greater mass and with more substantial medical support, to include psychiatric services. Mental health services at the division level are frequently augmented by combat stress detachments, which may provide some capability for monitoring service members taking psychotropic medications.

The need for antipsychotic or mood stabilizing medications is an indication of severe or chronic psychiatric illness, which generally should not be managed in a deployment setting. On a case-by-case basis, a service member who chronically uses anxiolytic or stimulant agents should be evaluated by a psychiatrist before deployment. Short-term use of benzodiazepines or other soporific agents may be indicated in restoring normal sleep patterns disrupted by irregular schedules and sleep deprivation,[98] but they can interfere with prophylactic medication schedules.[9] Training personnel in how to manage other disruptions to work-rest cycles and other operational problems on an individual and a unit basis without medications is an important consideration for future operations. Clinicians have frequently been tempted to use psychotropic medications to aid individuals distressed by combat. The use of antipsychotic agents such as chloropromazine was common in Vietnam. We do not know the consequence of this usage, but given our knowledge of the effect of these drugs on performance, it is unlikely that anyone would recommend their use in a combat setting today. At present, there is little data that would justify the use of these agents in the combat context. There is a need for research on the impact of psychotropic drugs on military and combat performance.

THE NEED FOR RESEARCH ON REUNION ISSUES

Research on the stresses of homecoming following deployment is needed. This topic covers a variety of issues. First among these is the need to determine the expectations of service members or their families before reunion. Reunion briefings and other materials prepared to assist people in this phase have been developed, based on a general theory of stress that includes a myriad of possible symptoms. It would be helpful to know what stresses service members, spouses, and children expect to face, the stresses that they actually face, and how they cope.

The number of studies in this area on women, whether single or married, mothers or childless, is very limited. Research should investigate the different deployment and homecoming experiences of men and women, as well as women's adjustment, coping strategies, health care utilization, morbidity, and mortality.[99] The long-term adjustment of the deployed female veteran has been little researched except in nurses.

The material referenced for this chapter has been almost exclusively based on active duty military personnel. In the future, it will be important to develop a better understanding of the stressors that confront Reservists who deploy. Finally, long-term follow-up of deployed service members and their families has not been carefully studied.

SUMMARY

The preventive medicine officer should work with the military mental health community to prepare for and successfully accomplish the deployment mission in the post–Cold War environment. The medical mission includes the preparation of the service member, the family of the service member, and the military unit for the three phases of deployment.

Deployments today tend to be unexpected, rapid, and of uncertain duration and have a mission that shifts as the deployment unfolds. The deployment environment in the 1990s developed during an era of shrinking military resources and increasing demands on service members and their families. The services are truly doing more with less. Military medical resources have not escaped the overall cuts. The result is a thinly spread, largely inexperienced force that is not always deployed as a unit but often as individuals or in small groups. The result is a unit in which cohesion must be constructed during an operation only to be lost when the mission is completed or individuals are rotated out. Finally, the battlefield has changed to include the high likelihood of the use of chemical and biological agents and information technology and new classes of weapons, such as lasers and smart munitions, that can deliver increased firepower more accurately. This means that smaller and smaller military units may be fighting on a very fluid and very deadly

battlefield.

Military deployments have the potential to be widely dispersed over the earth's surface. This means service members face unfamiliar, severe environmental challenges and exotic diseases on a scale for which the US civilian medical community may be unprepared. The stress on all military medical practitioners is high as they contend with preventing and treating illness and injury.

Much of the published literature consists of case reports or case series that have not been developed on solid epidemiologic, sociological, or anthropological principles. Most articles convey the medical reporter's snapshot of a specific deployment or tour of duty. As cases are described diagnostically, there is a tendency to rely on psychological scales or tests for which predictive values are erroneously considered equal to test sensitivity or specificity.

The effects of deployments on the family of the service member continue to be studied, and the services have developed a wealth of preventive and support practices to help spouses and children. A lingering problem, however, is the hesitance, particularly of younger spouses, to use the supports available. Family structures are constantly changing, and families who live off the installation are particularly difficult to find and attract to on-installation services.

Studies of how leadership interacts with preventive medicine practices are essential to a good operational outcome. Commanders face challenges such as working in a multinational environment, serving as ambassadors to the local population, using vaccines and pharmaceuticals to prevent morbidity and mortality, being involved in political decisions, and having their decisions reviewed by politicians. These requirements are very demanding of a commander's time and energy, but coordination of national political goals with military goals is essential in many deployments. That such requirements exist at all is controversial, but a commander should expect to spend considerable time and energy on such issues, particularly as they may affect the morale of the command.

The importance of support of service members and their families will continue to be of the greatest importance to the leadership of the military services. The spirit of pride and accomplishment demonstrated by military personnel in the post–Cold War environment has been exemplary. Continued support by the national leadership, the media, the US public, commanders, and families have also been crucial to the military forces. All these elements support unit cohesion, a cornerstone of deployment readiness and mission accomplishment.

This chapter has been designed to illustrate the depth of information that is published while attempting to link psychological and social issues to the traditional practice of preventive medicine. The integrated disciplines have the potential to develop a solid bio-psycho-social picture of the behavioral and social risks that confront service members and families. In this way, the affect education, training, and deployment have on health status can be tracked and environmental, psychological, and moral factors considered. At some later point, these factors may be embedded in a medical record system that directly feeds surveillance systems, such that researchers can understand the exposures and measure outcomes. Such a system does not exist today but should be considered critical to the military mission.

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