Chapter 7

U.S. ARMY COMBAT PSYCHIATRY

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Samuel E.Alexander *American Doctor II—Field Force Doctor Examines Vietnamese Child* 1968

Samuel E. Alexander was a member of the U.S. Army Artist Program and was in Vietnam in 1967. His painting depicts the other functions of U.S. Army Psychiatry in the theater of operations. When not evaluating and treating combat stress casualties, or providing consultation services to commanders, psychiatrists and other physicians routinely provide medical care to the local civilian population under the MILPHAP (Military Public Health Action Program) which was unofficially known as the MEDCAP (Medical Civilian Action Program).

Art: Courtesy of US Center of Military History, Washington, DC.

INTRODUCTION

The Mission of the U.S. Army

The mission of the U.S. Army is to deter potential enemies from using force against the interests and security of the United States and its allies. If deterrence fails, the U.S. Army's mission is to fight and win the nation's land wars, whether they be waged with conventional weapons or weapons of mass destruction. Throughout its history, and increasingly since the end of the Cold War, the U.S. Army has also been tasked with numerous military operations other than war (MOOTW). These include humanitarian and civil assistance, infrastructure building, and disaster relief. Such missions can be within the United States (classified as "domestic support operations") or in foreign lands; they do not involve combat; and often involve medical personnel and medical units in lead roles.

Other military operations other than war are: peacekeeping; noncombatant evacuation operations; search and rescue; intelligence gathering; training missions to assist foreign countries with internal and external defense; demonstrations or shows of force; and the restoration of public order. In these missions, it is hoped that U.S. forces can avoid or deter combat, but must be prepared to defend themselves. Missions to restore order, training missions in countries that are resisting armed insurgencies, and the ambiguous category of "peace enforcement" can degenerate into sporadic low-intensity conflicts. The U.S. Army must wage and "win" these armed conflicts short of war, although in these the political objectives far outweigh the purely military ones. Conflicts short of war include counterterrorism, some counternarcotics operations, strikes and raids, support for insurgencies, and counterinsurgency (guerrilla) operations. Whatever the immediate mission, all U.S. Army personnel of all branches must be ready to perform their duties and defend themselves in the extreme stress of combat.

The Mission of the U.S. Army Medical Department

The mission of the U.S. Army Medical Department (AMEDD) is to "conserve the fighting strength" and to care for the sick and wounded. Patient care responsibility is primarily to the active duty service members, although the U.S. Army and the nation recognize the importance of assuring quality medical care to retirees and to U.S. Army family members as part of sustaining a combat-ready force. U.S. Army doctors, researchers, medical administrators, and workers of many specialties have led the way in preventive medicine. Contributions include sanitation and hygiene practices, the prevention and treatment of infectious diseases (from malaria and yellow fever to hepatitis and acquired immunodeficiency syndrome [AIDS]), and the identification of the hostility (anger) factor as the chief contributor to the risk of coronary artery disease in persons with "Type A" personalities.

U.S. Army experience has stimulated dramatic improvements in the acute stabilization, evacuation, and definitive treatment of severe physical trauma. Recently, the combat support mission of the U.S. Army Medical Department has been distilled into six battlefield roles. From the front-line medic to the continental United States {CONUS) hospital staff, all AMEDD personnel must be prepared for the personal stress of being in combat and for the stress of caring for wounded combat casualties.

The U.S. Army Mental Health/Combat Stress Control Mission

The primary mission of U.S. Army psychiatry and the mental health team is to conserve the fighting strength by assuring a sane, stress-tolerant, mission-effective force. This must be accomplished in considerable part by assisting the chain of command (officer commanders), the chain of support (noncommissioned officers), and the chain of concern (chaplains, other special staff, unit medical personnel, rear detachments, and family support groups) with professional advice, education, and assistance. It also involves screening out the mentally unsuitable and psychiatrically disabled. Direct care involves treating or counseling soldiers with temporarily distracting problems or disabling mental disorders to quickly restore them to effective duty. It also involves initiating the longer-term treatment of those who must be separated from the military.

The U.S. Army Mental Health/Combat Stress Control team in combat fulfills the AMEDD's six battlefield rules as delineated in Exhibit 7-1. In 1984, Combat Stress Control (CSC) was finally recognized as an autonomous AMEDD (and U.S. Army) battlefield functional area. This was the delayed culmination of an honorable history in which U.S.

EXHIBIT 7-1

HOW COMBAT STRESS CONTROL FULFILLS THE ARMY MEDICAL DEPARTMENT'S IMPERATIVE ROLES

Maintain presence with the soldier

The combat stress control concept places behavioral science experts forward on the battlefield and throughout the theater, where they provide immediate, on-site training, mentoring and assistance to leaders (especially at company grade), medical personnel and unit ministry teams, and the soldiers.

Maintain the health of the command

The actions of the combat stress control team prevent stress casualties, and enhance unit cohesion, soldier performance, and organizational capability under stress. They enhance mental health effectiveness of the command's Family Support Groups, through regular advice and liaison. By contributing directly to mission accomplishment, combat stress control also reduces other types of casualties.

Save lives

The combat stress control personnel save lives directly by identifying and stabilizing those neuropsychiatric or stress cases whose disturbed behavior endangers themselves or others. In a world of lethal weapons, suicidal, homicidal, or psychotic behavior can create mass casualties. Correctly diagnosing surgical and medical emergencies which have been mislabeled as psychiatric behavior also directly saves lives. The combat stress control personnel save lives indirectly by enhancing decision-making and mission execution through command consultation.

Clear the disabled from the battlefield

The combat stress control team contributes to clearing the battlefield by identifying and stabilizing for transportation those psychiatric cases who need rapid evacuation, while screening out and treating the much larger number of stress cases who can quickly return to duty far forward. Without combat stress control, these cases overload the limited evacuation assets or interfere with operations.

Provide quality care

Combat stress control personnel assure appropriate quality of care at each echelon for battle fatigue and psychiatric cases. For battle fatigue cases, premature evacuation can cause permanent disability, and constitutes malpractice unless it is unavoidable under the tactical situation. Also, the American people clearly expect the Army to take all feasible measures to prevent misconduct stress behaviors and post-traumatic stress disorders in our soldiers. Through their top priority consultation-liaison mission, the multidisciplinary combat stress control team personnel train, mentor, and provide technical supervision throughout the Army medical, combat service support, and combat arms systems to assure quality stress and mental health care to all soldiers. Through their advice and liaison mission to unit leaders, family support groups, and the supporting medical systems in garrison and Reserve Component units, they extend this quality assurance to the Total Army family.

Return soldiers to duty

The combat stress control organization returns many soldiers to duty quickly. This reduces the burden on the evacuation system and returns trained, seasoned soldiers to their own units, instead of unknown, combat-inexperienced replacements who have to be flown into theater. It also benefits the casualties' future mental health.

Adapted from the Draft Concept Statement of the Combat Stress Control Panel, Medical Re-Engineering Initiative, AMEDD Center and School, Fort Sam Houston, Texas, April 1994.

Army neuropsychiatry and its allied mental health professions established doctrine, organization, and an operational concept that was truly distinct from the rest of U.S. Army medicine.

The American soldier of today is highly technically trained and not easily replaced in a short time. The prevention of stress casualties and the early return to duty of stress-disabled soldiers requires

more focus in peacetime on neuropsychiatry and mental health programs in preparation for mobilization. The transition of mental health professionals from a civilian practice to military can take 6 months and may be too late to be effective at a time of national emergency. The mental health personnel must master military-specific clinical and organizational skills which have no civilian counterparts. Direct application of civilian mental health experience to combat stress cases or functioning military units can cause harm. Military stress control expertise must be acquired by military providers working in the military unit context, not in a garrison version of civilian direct-patient care. The operational planning and coordination of stress control in war and operations other than war requires that experienced mental health staff officers and noncommissioned officers (NCOs) be integral members of medical, U.S. Army, and joint services command headquarters.

History of U.S. Army Neuropsychiatry in Combat

The history of U.S. Army neuropsychiatry is covered in considerable detail in *Neuropsychiatry*,[1] the history of neuropsychiatry in World War I, and in *Neuropsychiatry in World War II*,[2,3] the two volume series. Chapter 1 of this volume, Psychiatric Lessons of War, also discusses the history of military psychiatry, especially in terms of the evolution of concepts. The following discussion highlights the important conceptual and historical developments in military psychiatry while emphasizing the structural components of the delivery of patient care. The materials presented draw heavily from those found in the official histories.[1-3]

The U.S. Army began as the Continental Army under the leadership of General George Washington. There was no subspecialty of psychiatry or other mental health professions at that time, although chaplains supported the spiritual and moral health of the troops. Dr. Benjamin Rush served as the prototype Surgeon General from 1776 to 1778. Rush advocated abstinence from alcohol. Later, as a civilian physician at the Pennsylvania Hospital, Rush preceded and paralleled the more famous French physician, Philippe Pinel, in championing the "moral treatment of the insane." He advocated asylums in the quiet countryside for the mentally ill—clean buildings with bathing facilities, where violent patients were kept separate from passive ones and all were treated with kindness, work, and diversion (occupational therapy). He wrote "We assume that insanity has its seat in the mind. And nevertheless we attempt with remarkable inconsistency to cure it by physical methods. The disease affects the body and mind alike and can be cured only by methods which reach both."[4(p28)]

In the Continental Army and the U.S. Army which it became, the importance of morale or "esprit de corps" was recognized. It was needed to keep soldiers steady in the line of battle and to prevent desertion in the long periods of inactivity under deprived conditions far from home, such as the winter at Valley Forge during the American Revolutionary War. Also recognized were many of the same mental health disorders seen today, although without the current more elaborated diagnostic understanding: alcohol abuse and alcoholism ("drunkenness"), homesickness and chronic situational depression ("nostalgia"), and more overt psychotic disorders ("insanity" and "melancholia"). Joseph Lovell, the Surgeon General from 1817 to 1828 and an advocate of temperance who eventually succeeded in abolishing the daily rum ration, attributed more than one half of the deaths in the U.S. Army over that period to alcohol.[5(p29)]

In 1852, Dorothea Dix persuaded Congress to fund the U.S. Government Hospital for the Insane (now St. Elizabeths Hospital). The Government Hospital was to receive the insane of the U.S. Army and U.S. Navy. However, during the Civil War, so many insane Union soldiers were discharged locally to find their own way home that complaints led to an 1864 War Department order requiring transfer to the Government Hospital until the soldiers' families could come for them.

Nostalgia cases in the Civil War numbered 5,547 (with 74 deaths). It is likely that the differentiation between nostalgia ("a species of melancholy or mild type of insanity caused by disappointment and longing for home") and physical diseases such as tuberculosis was not always made. Little treatment was attempted, and most cases were discharged home.[6]

"Functional heart disease" was described by DaCosta in 1862, who also termed it "the irritable heart of the soldier."[7] The condition usually originated in combat as a prompt and persistent tachycardia (120–130 bpm) on slight exertion. DaCosta reported that most cases improved with hospitalization and tincture of digitalis three times a day. On one occasion when 4,900 soldiers were discharged from the Union Army, 2,300 were diagnosed as heart disease, of which 1,200 were "functional." Today, a patient presenting with a psychophysiological manifestation of hyperarousal

and conditioned anxiety might well be considered an "evacuation syndrome."[8]

The first formal training in psychiatry to Regular Army Medical Officers began at the U.S. Army Medical School, consisting of four clinical sessions at the Government Hospital. There were also lectures in military law and malingering. By 1915, the total training in mental illness had increased to 24 hours.

Perhaps the first organized military mental health unit was with the Russians in the Russo-Japanese War (1904–1906).[9] During this war the Russian Red Cross established mental health programs and recording of neuropsychiatric cases. In addition physicians, functioning as neuropsychiatrists, were put as close to the front as possible to perform special evaluations of nervous and mental cases. Eventually other countries developed such programs during World War I.

As World War I was waged in 1914 and 1915, newspaper and journal reports of "shell shock" ("le syndrome commotionnel") aroused interest among U.S. psychiatrists. Prominent American psychiatrists during World War I advocated to the U.S. Army Surgeon General (Major General Gorgas) the formation of a psychiatric organization. The plan included developing psychiatric units in general hospitals staffed by psychiatrists throughout the United States.

Dr. Thomas Salmon,[10] medical director of the National Committee for Mental Hygiene, offered the committee's services to the U.S. Army. He and others visited U.S. Army medical facilities supporting the operations against Pancho Villa in Mexico and Canadian hospitals with psychiatric evacuees from France. In 1917, Dr. Salmon visited England for several months. By then, the psychological nature of "war neurosis" and the value of forward, brief treatment had been well documented by the French and confirmed by the British. Dr. Salmon recommended to the U.S. Army Surgeon General that a similar echeloned system of prevention and treatment be adopted. When the United States entered the war, Salmon was commissioned a major. He was appointed Director of Psychiatry to the American Expeditionary Forces (AEF) in December 1917, and immediately implemented his plan.[1]

> The experience of the French and British medical services showed, within a very few months after the beginning of the war, that patients with war neuroses improved more rapidly when treated in permanent hospitals near the front than at the base, better at casualty clearing stations and postes de chirurgie d'urgence than even at advanced base hospitals, and better still when encouragement, rest, persuasion, and suggestion could be given at a combat organization itself. It was for the purpose of applying this well-established fact that plans were made to station a medical officer with special training in psychiatry and neurology in each combat division, since the division was to be the great combat unit of the American Army in France. It was deemed impractical to consider detailing a consultant in neuropsychiatry to a combat unit smaller than the division.[1(p303)]

By order of the chief surgeon of the AEF, the division psychiatrists were under the direction of the chief surgeons of the division, but were not members of the division headquarters staffs. Rather, they were attached to the "sanitary trains" (the equivalent of the current medical units that are organic to the division). Later, Salmon concluded that putting the psychiatrists in the headquarters under the chief surgeons worked better. The psychiatrist's specified duties included examining all cases of mental or nervous diseases (including malingering and self-inflicted wounds) and advising on their diagnosis, management, and disposition; forensic testimony when requested; giving "informal clinical talks" to medical officers and others on the nature, diagnosis, and management of the disorders; keeping careful records of all cases; and submitting regular reports to and advising the chief surgeon.

> The division psychiatrist was stationed at the advanced field hospital, or triage, and his range of activity extended forward to the ambulance dressing stations and beyond as far as he cared to go and backward as far as the rear field hospital, which was the unit treatment center [ie, still within the division]. The triage, or sorting station, was apt to be anywhere from 2 to 9 miles, or more, from the front line, and the treatment field hospital 4 to 7 miles further removed. The former was usually an abandoned strong barn; and the latter, generally under canvas, capable of caring for about 150 patients in five or six large tents. At the treatment field hospital the division psychiatrist was generally able to count on one enlisted man...to care for each 15 patients…. An assistant divisional specialist would have proven a valuable adjunct. It is true that even with an active combat division there were times when there was scarcely enough [patient care] work to keep the division psychiatrist occupied; yet these periods were succeeded by days or weeks of stress and strain...when the services of a trained assistant would have been invaluable. The small "pool" of neuropsychiatrists under the

> control of the corps or army [neuropsychiatry] consultant proved a useful means of meeting this need.[1(pp309–310)]

At the forward triage, the division psychiatrist sorted all nervous cases, returning directly to their combat units those who should not be permitted to go to the rear and resting, warming, feeding, and treating others, particularly exhaustion cases, if there was opportunity to do so.[1]

Salmon had learned from British experience the importance of not using dramatic or diagnostic labels for stress casualties, and adopted the British policy of using "N.Y.D.N." for "not yet diagnosed (nervous)." This avoided the suggestion of physical brain injury implied in the dramatic name "shell shock" or the implication of mysterious psychiatric illness implied by the official diagnosis, "war neurosis." Under optimal conditions, over 70% of the casualties held for treatment at the 150-cot field hospitals in the division rear returned to duty within 5 days. However, when the tactical situation forced the emptying of the field hospitals after only two days of treatment, the return-to-duty percentage dropped to 40%.[1(p333)]

The second echelon, only a few miles behind the divisions, was the three neurological hospitals. These were located in old French barracks buildings, staffed by general medical personnel and commanded and supervised by psychiatrists. The sole function of these 150-bed units was to provide additional brief rest and intensive rehabilitation for those NYDN cases who had had to be evacuated from the divisions. About 55% of these cases returned to duty after an average of two weeks.

The third echelon, further to the rear, was Base Hospital No. 117, whose sole purpose was to provide several weeks of even more intensive reconditioning treatment to the soldiers who had not returned to duty from the neurological hospitals or who had somehow slipped through the first two echelons and been evacuated to regular hospitals. Another base hospital, No. 116, was the neuropsychiatric specialty hospital dedicated to the "true" neuropsychiatric cases who were judged not suitable for return to duty. Base Hospital No. 117 also had a high rate of return to duty, although many were to noncombat jobs in the rear. The staff of Base Hospital No. 117 included psychiatrists, U.S. Army psychiatric nurses, on-the-job-trained enlisted medics, and civilian volunteer occupational therapists. The official history describes in detail the importance of the nursing staff in establishing and maintaining a positive, return-to-duty ward morale. The occupational therapists provided both shop work and outdoor work details; the official history emphasizes the importance of these tasks in restoring confidence. In the last weeks of the war, occupational therapists were sent forward to the neurological hospitals where they enabled some soldiers to return to duty who otherwise would have been evacuated to Base Hospital No. 117.

In the continental United States, the American Red Cross established a psychiatric social worker program to aid military patients. Clinical psychology programs were not recorded at that time.

It should be apparent from this brief history that the forbears of military psychiatry during World War I knew much of what is known today about combat stress casualties, and practiced prevention and treatment very well. It was recorded in the official history, but then forgotten.

From World War I to World War II hospital psychiatry functions continued, but unlike the assignment of medical and surgical consultants, there was no representation of the mental health specialties on The Surgeon General's staff. At the beginning of World War II Harry Stack Sullivan, psychiatric consultant to the Selective Service Commission, promoted policies that resulted in the rejection of young men being conscripted if they showed any taint of anxiety or neurotic tendencies, including so-called "neuropathic traits" such as nail biting, enuresis, or running away from home. These policies were also applied to soldiers after induction, resulting in what Ginsberg et al[11] labeled "lost divisions" of about 2.5 million men. Of 18 million screened, nearly 2 million were rejected because of an emotional or mental defect and another three quarters of a million were prematurely separated for the same reasons. The total ineffective group included approximately one out of every seven men called for service.[11]

Besides the absence of representation at the War Department or even the Department of the Army (DA) staff, the division psychiatric positions were abolished in 1939 as unnecessary. In August 1940, Lieutenant Colonel (later General) Patrick Madigan was assigned to the Professional Services Division, Surgeon General's Office, but his duties were purely routine and administrative. Not until February 1942, after the attack on Pearl Harbor, was he able to upgrade his position to a Neuropsychiatry Branch under the Professional Services Division. However, in 1941 troop clinics were established outside of the hospitals and psychiatrists were assigned. A training center at Fort Monmouth, New Jersey, developed a community clinic in early 1942 and had

an enlisted social worker and later an enlisted psychologist to assist the psychiatrist. This program led to the establishment of the Mental Hygiene Consultation Service (MHCS) at all replacement training centers. Its purpose was to help the maladjusted trainee. This concept of MHCS continues to the present in the Community Mental Health Services in the Medical Activity of each post.[12]

World War I style forward treatment was relearned during two battles of the Tunisian Campaign in March and April 1943.[3] Captain Fred Hanson, who served with Canadian forces prior to U.S. entry into the war, was assigned with American forces in North Africa. Hanson may have been familiar with Salmon's principles because the British were using *The Medical Department of the United States Army in the World War, Volume 10, Neuropsychiatry* in their planning.[1] He avoided evacuation and returned more than 70% of 494 neuropsychiatric patients to combat after 48 hours of treatment, which basically consisted of resting the soldier and indicating to him that he would soon rejoin his unit. On April 26, 1943, in response to the recommendations of his surgeon, Colonel Perrin Long, and psychiatrists, Captain Hanson and Major Tureen, General Omar Bradley issued a directive that established a holding period of 7 days for psychiatric patients and further prescribed the term "exhaustion" as the initial diagnosis for all combat psychiatric cases. The word exhaustion was chosen because it conveyed the least implication of mental disturbance and came closest to describing how the patients really felt. Division psychiatrists were hastily reassigned. This move proved its worth in the Italian campaign.

The ineffective psychiatric criteria for screening at initial entry were also tightened to disqualify only the overtly psychotic or seriously mentally retarded. A later study demonstrated that the "neurotics" who would have been screened out by the earlier criteria were not significantly more likely to become stress casualties or less likely to be decorated for valor than the men who had passed that screening.

Colonel (later Brigadier General) William C. Menninger became The Surgeon General's Chief of the Neuropsychiatry Branch in December 1943, and the branch became a division, on an equal level with medicine and surgery, in January 1944. A School of Military Psychiatry, plus some civilian schools, addressed the serious shortage of psychiatrists. Initially, a 4-week course trained physicians who already had more than a year of psychiatric training. Later, a 12-week course was conducted to prepare physicians with no psychiatric training to function in psychiatric positions.

By late in the war, the Mediterranean and European theaters had psychiatrists assigned to each division, although some divisions received only inexperienced general medical officers. Many maneuver battalions had "rest centers" in their "kitchen trains," where exhausted soldiers were monitored by the nearby battalion surgeon. There were "exhaustion centers" in many regimental or combat command "trains" (equivalent to today's brigade support areas), run by the adjutant but monitored by the regimental surgeons. Combat exhaustion cases were rested here for several days. In some divisions, company commanders were even required to select some number of individual soldiers for rotation back to these centers for brief "R and R" (rest and recreation). It was the primary duty of the division psychiatrist to train the battalion and regimental surgeons in the principles and practice of combat psychiatry. Toward the end of the war a distinguished group of civilian psychiatrists were commissioned to evaluate U.S. military psychiatric treatment in Europe. They found that about half of the stress casualties were never recorded because of the success of forward treatment at the battalion and regimental aid stations and rest centers.[13]

During combat late in World War II, the division psychiatrists in Europe triaged and treated more severe combat exhaustion cases at the division clearing company in the division rear, holding them for 1 to 2 days. They then supervised their further rehabilitation for 3 to 5 days at the division's Training and Rehabilitation (T&R) Center. The T&R Center was controlled by the Adjutant, and staffed with combat veteran officers and NCOs, often ones who were on profile with minor wounds or injuries (including combat exhaustion!). The soldiers shared pup tents and were led through a program of calisthenics and realistic combat drills, often conducted in the ruins of nearby towns that had been recent battlefields. Return-to-duty rates from the T&R Centers ranged between 50% and 70%.[14]

Behind the divisions, there were U.S. Army-level Neuropsychiatry Centers. These were 250-bed holding companies with supervisory psychiatric staff. Like the World War I Neurological Hospitals, these received the cases that the division psychiatrist judged too disruptive for the division clearing company and T&R Center, plus those who failed to respond sufficiently to the 5- to 7-day treatment, and the overflow caused by tactical demands.

The Neuropsychiatry Centers continued the highly structured program of physical reconditioning, hot showers, good food and comfortable cots, and recreational and work activities. Some of these soldiers returned to their original units. Others were sent to nearby combat service support units for further useful "occupational therapy" and reclassification into support roles. The few who failed to respond were sent to base hospitals with psychiatric wards. Approximately 90% of the stress casualties who received specialized psychiatric care were returned to useful duty in the theater.

In addition to rediscovering the principles of treatment applied so effectively in World War I, and the ineffectiveness of large-scale screening, World War II psychiatrists learned about the epidemiology of combat stress casualties. They documented the direct relationship to intensity of combat, modified by physical and morale factors, and the importance of unit cohesion both in preventing breakdown and in enhancing combat effectiveness. During the war, prospective studies conducted by Stouffer et al[15] conclusively showed that units with good morale and leadership had fewer combat stress casualties than those without these attributes when variables such as combat intensity were comparable. Regarding combat intensity it was found that there was a direct relationship between combat intensity as measured by rates of wounded and killed in action and psychiatric casualties.[16]

Another finding during World War II was the chronology of breakdown in combat. It had long been recognized that "new" and "old" men in combat units were more prone to breakdown. "New" or inexperienced troops were more likely to become stress casualties, and have usually accounted for over three fourths of stress casualties; however, with increasing exposure to combat after 1 or 2 combat months, an increasing rate of casualty generation also occurs.[17] Beebe and Appel[18] analyzed the World War II combat attrition of a cohort of 1,000 soldiers from the European Theater of Operations (ETO) and found that the breaking point of the average rifleman in the Mediterranean Theater of Operations (MTO) was 88 days of company combat, that is, days in which the company sustained at least one casualty. A company combat day averaged 7.8 calendar days in the MTO and 3.6 calendar days in the ETO. They found that due to varying causes of attrition including death, wounding, and transfers, by company combat day 50 in both theaters 9 out of 10 "original" soldiers had departed. In their projections Beebe and Appel found that if only psychiatric casualties occurred, there would be a 95% depletion by company combat day 260; however, due to other causes of attrition (transfer, death, wounding, illness), the unit would be virtually depleted by company combat day 80 or 90, approximately the breaking point of the median man.[18]

From studies of cumulative stress such as these as well as observations of the efficacy of a "point system" (so many points of credit toward rotation from combat per unit of time in combat or so many combat missions of aircrews) used during World War II, the value of periodic rest from combat and of rotation came to be understood and applied in the Korean and Vietnam conflicts with fixed combat tours. The fixed tours did, however, result in the "short-timer's syndrome," an anxious, tense state not uncommon in combat participants during the final weeks of the stipulated tour of combat duty.[19,20]

The final and perhaps most important lesson of World War II was the importance of group cohesion not only in preventing breakdown, but also in producing effectiveness in combat.[19] Cohesion is so important in both prevention and treatment of psychiatric casualties that Matthew D. Parrish, an eminent psychiatrist who served in combat aircrews during World War II and as U.S. Army Neuropsychiatry Consultant in Vietnam, has suggested it as another principle of forward treatment that might be termed "membership."[21]

After World War II key commands kept neuropsychiatric consultants, particularly in Europe and at the Department of the Army. The specialty of social work officer was established along with the conversion of the enlisted psychologist from the Sanitation Corps to an officer in the Medical Service Corps.

The experience of World War II was documented in the two-volume official history, *Neuropsychiatry in World War II*.[2,3] This included the plan for the way that special neuropsychiatric teams would support the division mental health capabilities and provide backup and mobile consultative support in the corps. However, the U.S. Army was substantially deactivated in the late 1940s, and the invasion of South Korea by North Korea caught the United States unprepared. Task Force Smith, hastily mobilized from garrison troops in the Pacific area and reinforced by reactivated World War II veterans from the United States, suffered heavy losses in killed, wounded, and captured during the retreat to the Pusan perimeter. Although the veterans remembered that combat exhaustion cases ought to be treated in the combat zone close behind their units,

most were unavoidably evacuated to Japan. There, proper treatment at the hospitals salvaged many for combat service support duties, but very few returned to combat duty.

After the first months of the Korean conflict, Colonel Donald Peterson, the Neuropsychiatry Consultant, assigned Lieutenant Colonel Albert Glass as the Neuropsychiatry Theater Consultant for the forces in Korea. Glass[22] immediately established a comprehensive mental health program. He had served in World War II and was able, based on his experiences, to quickly organize an effective, forward program that has remained the basis for current military mental health programs. The division mental health sections were trained to provide active training to the regimental and battalion surgeons. In addition, the Table of Organization and Equipment (TO&E) was developed for a mobile psychiatric detachment. This new unit was designated a "KO Team." "KO" was not an acronym. Rather, it was only one in a series of "K" teams, with "K" arbitrarily indicating that these were hospital augmentation detachments. The first KO teams were deployed to Korea, where they reinforced the division mental health sections at times of heavy fighting, and could enhance the use of a divisional clearing company as a temporary exhaustion center. They also provided mobile consultation throughout the corps and U.S. Army areas, like the fictitious psychiatrist, Major Sidney Greenfield, did on the television series "MASH."

In April 1952, a third-echelon treatment facility (equivalent to Base Hospital No. 117 in World War I) was established near Seoul by adding a psychiatric detachment to a 300-cot medical holding company. This facility had an average census of 45 soldiers with an average duration of stay of 7.4 days. It returned 76% to duty.[23]

A comparison of treatment efficacy data near the end of World War II and the 1953 Korean conflict reveals the following: World War II—60% of psychiatric casualties were returned to duty within their own division, while in Korea it was 88%; World War II—90% were returned to duty somewhere in the combat theater compared to 97% in Korea.[23] In 1957, the first version of Army Regulation 40-216, *Neuropsychiatry and Mental Health*, codified the roles and responsibilities of division psychiatry in wartime and peacetime.

The first U.S. Army psychiatrist to be assigned in Vietnam, Major Estes G. Copen[24] provided support to approximately 8,000 American advisors. He noted the prevalence of misconduct and psychosomatic complaints among the service support troops, in contrast to those in combat units, that was to become the hallmark and curse of the Vietnam conflict. With the buildup beginning in July 1965, divisions deployed to Vietnam, each with their one division psychiatrist, and social work officer, plus two enlisted specialists with their medical company supporting each brigade. The enlisted specialists were often college or graduate level draftees with behavioral science training. They staffed mental health consultation services at the division base area and went forward when appropriate to the brigade and battalion fire bases. The theater neuropsychiatrist consultant established his office at Headquarters, U.S. Army Vietnam in November 1965.

The first KO team to deploy was activated at Valley Forge General Hospital in Pennsylvania in October 1965, deployed by ship 29 November 1965, and was operational by January 1966. It consisted of three psychiatrists, one neurologist, two social workers, one clinical psychologist, one psychiatric nurse, and 12 to 15 enlisted social work, psychology, and neuropsychiatric specialists. Its mission was to establish a "Psychiatry and Neurology Treatment and Evacuation Center" in Vietnam. (The adoption of this title at that time is interesting in that it emphasizes the two functions that current doctrine, as practiced in the Persian Gulf War, would deemphasize. The more "doctrinally correct" translation might be the "Psychiatry and Neurology Evaluation and Return to Duty Center.") The center provided psychiatric and neurological evaluation and treatment for up to 30 days as inpatients, if necessary, prior to evacuation to the continental United States or return to duty. The detachment was assigned to an evacuation hospital 20 miles northeast of Saigon, where it occupied its own Quonset buildings. It quickly also established an active MHCS for the many units in the vicinity that lacked organic mental health services.

Despite its title, the Psychiatry and Neurology Treatment and Evacuation Center aggressively applied the time-proven principles of combat psychiatry and returned about 90% of its inpatients to duty. It maintained a military-, not patient-, care milieu with strong expectation of return to duty. Although distant from most of the tactical units, the center maintained a psychological proximity and unit identity by requesting the parent unit to make regular visits to its soldier, bring his mail, and give him his pay on the ward. The ubiquitous helicopters made this possible, and most line commanders cooperated fully with the visitation program.

Less than 5% of the caseload presented with well-defined psychiatric illnesses. The majority of soldiers referred to the KO team had behavioral difficulties or somatic complaints. The latter were either physiologic manifestations of stress (headache, back pain, gastrointestinal symptoms, syncope and vertigo conversion-type symptoms affecting vision, hearing, speech, pseudoseizures, "narcolepsy" or somnambulism, and amnesias. The KO team also provided extensive consultation to medicine and surgery regarding stress and somatic symptoms in soldiers recovering from physical wounds.

As the buildup in Vietnam continued, eventually two KO teams were assigned in Vietnam. The incidence of traditional "combat exhaustion" remained very low (below 2%). This was attributed to the rotation policy (365-day tours), scheduled R and R, the sporadic nature of combat in most of the heavy artillery, armor, and air weapons support of U.S. forces, the effectiveness of helicopter evacuation of the wounded, and the prevention (by division mental health and the KO teams) of a "psychiatric" evacuation syndrome. Another factor in the low utilization of the "combat exhaustion" label was the criterion that the soldier had to show "fatigue, whether produced by physical causes such as exertion, heat, dehydration diarrhea and loss of sleep…[or] anxiety and insomnia." This effectively excluded most of the anxious, depressed, conversion and dissociative subtypes who would now be counted under the umbrella of "battle fatigue," as they would have in World War II.

As noted elsewhere in this volume, the division mental health teams and KO teams were less successful in recognizing the contributing causes of misconduct stress behaviors and in helping the chain of command to prevent them. Measures such as the individual 365-day tour, while protecting against battle fatigue or combat exhaustion, fragmented unit cohesion. Liberal availability of alcohol, with frequent excess use, did not set a good example for the prevention of marijuana, heroin, and other illegal drug abuse, which became epidemic by 1970. Those factors, plus an unwise short rotation policy for junior officers and the unpopularity of the war, led to epidemic indiscipline, including the threatening and "fragging" of leaders. Failure to instill understanding and respect for the Vietnamese (both South and North, friend, neutral, and foe), the frustrating and ambiguous rules of engagement, and the nature of terrorist guerrilla war, led to numerous small and some major acts of brutality and outright atrocity. The turmoil in the U.S. Army only reflected that of the nation, where violent political dissension, substance abuse, and racial animosity and overt antimilitary demonstrations were rampant.[25]

Following the withdrawal of all U.S. combat forces from Vietnam after the cease-fire signed by the United States, North Vietnam, and South Vietnam in Paris (1973), the U.S. Army entered the period of the "hollow army." While undergoing a major reduction in force and maintaining supposedly "fully manned" units to deter Soviet aggression in Europe, the U.S. Army continued to be plagued by drug abuse, indiscipline, low morale, and reduced readiness. The division mental health sections (now also including clinical psychologists) were too preoccupied with the daily referrals of disturbed, problem soldiers for most to train with their units much in the field. While the mental health team was valued for their ability to process problem soldiers for administrative or "chapter" discharges, they were also to some extent sullied by association with their workload clients.

The KO team TO&E was redesigned about 1973 into the "OM Team." ("OM" is also not an acronym. The "O" signifies that it is one of a series of medical teams that provide area support.) This designation more properly defined the units' mission than had the "K" (hospital augmentation detachments). However, the issue was confounded by taking inpatient services out of all the combat zone deployable hospitals and adding it to the OM team. The OM team had a small headquarters with a psychiatrist commander, clinical psychologist, field medical assistant (officer) and several enlisted. It had three mobile consultation teams, each with a psychiatrist, social worker, six behavioral science specialists (91G), and two vehicles. The treatment section had a psychiatrist, two psychiatric nurses, eleven psychiatric specialists (91F), and a 91G. Apparently, the plan was for OM detachments to augment one or two evacuation hospitals in a theater (reinforcing the evacuation hospital's one psychiatrist, one psychiatric nurse, and two psychiatric specialists) to provide 25-cot psychiatric wards. Other OM detachments might reinforce a general hospital or two in the communications zone. In fact, only one active component OM detachment was authorized, and it had no personnel assigned. Six OM detachments were established in the U.S. Army Reserves, but no doctrine was written regarding their expected employment. Not until 1984 did the OM teams begin to take part in realistic annual field training exercises.

Belated recognition of the Soviet offensive NBC (nuclear, biological, and chemical) threat to the North Atlantic Treaty Organization (NATO), made vivid by the intense fighting in the 1973 Yom Kippur War and the Israeli experience of stress casualties, led to renewed awareness of combat stress by the senior U.S. Army leadership. Army Regulation 40-216, *Neuropsychiatry and Mental Health*,[26] was updated in 1984, its first revision in 30 years. Staff studies at the Academy of Health Sciences at Fort Sam Houston, Texas, in the late 1970s and early 1980s, led to recognition of combat stress control as an autonomous AMEDD functions area in 1984. This finally put the combat mental health doctrine organization and employment on a par with preventive medicine, combat dentistry and veterinary medicine, if still less prestigious than hospitalization and evacuation.

In an intensive revision of all U.S. Army field medical support to meet the Soviet threat and support AirLand Battle (later called Medical Force 2000 or MF2K), the AMEDD was held to a strict personnel ceiling. However, within this ceiling, the newly proposed combat stress control (CSC) "companies" and "detachments" were authorized a 400% increase in active duty slots and a 280% increase in U.S. Army Reserve slots over those already available for modification from the old OM teams.

The TO&Es for the 85-person medical company CSC, and the 23-person medical detachment CSC were developed between 1986 and June 1989 and forwarded for Department of Army approval. These units have a modular design that packages a psychiatrist, social worker, and two enlisted, with vehicle, into a CSC preventive team that can reinforce a division mental health NCO and officer at the maneuver brigade level. A clinical psychologist, a psychiatric nurse (clinical nurse specialist) and an occupational therapist, with two each of their enlisted assistant and two more enlisted, are combined into an 11-person CSC restoration team. This team can staff a program of 1- to 3-day restoration treatment in the division rear, as well as sending two to three person teams to provide consultation in the vicinity or to reinforce the CSC preventive teams forward on short notice.

The CSC preventive and restoration teams' personnel can also be task organized in any combination to provide reconstitution support to units that have been pulled back after suffering heavy attrition. The task-organized elements can also conduct 1- to 2-week reconditioning programs in the corps area for slow-improving stress casualties. For more description of CSC doctrine and units, see Chapter 10, Joint Operations.

In the area of CSC doctrine, paragraphs and chapters were added to other medical field manuals starting in 1991.[27,28] Field manuals specific to the combat stress control functional area were written and staffed through multiple revisions starting in 1989, finally to be printed in September 1994.[29,30]

Meanwhile, however, events were calling for CSC support to U.S. Army combat operations. In December 1989 through January 1990, Operation Just Cause, the U.S. invasion of Panama, involved a night air assault by U.S. Army Ranger battalions; followed by an 82d Airborne Division brigade; the air-landing of 7th Light Infantry Division forces; reinforcing elements of those divisions; the 5th Mechanized Infantry Division; a separate brigade; and many other units already in Panama. There were several days of intense, but brief and local fighting, that included a number of psychologically traumatic incidents.

No division mental health assets were deployed to theater, although both the 82d and 7th sections were ready to go. The garrison and hospital psychiatric/mental health assets already in Panama were not readily adaptable or sufficient to the task of postcombat preventive activities. Subsequent problems with post-traumatic stress disorder (PTSD) and less obvious attrition or misconduct in a number of units confirmed the importance of such activities, preferably in the theater of operations, even after brief, successful contingency operations in which American and local civilian losses are sustained.

When Iraq invaded Kuwait in August 1990, the new CSC TO&Es were still in queue awaiting their Department of the Army staffing. The new field manuals were circulating in preliminary draft form. The mobilization for Operation Desert Shield (the multinational show of force to deter further Iraqi aggression and encourage withdrawal from Kuwait) first deployed the division mental health sections with their units, although some personnel had had little or no prior field training. Each of the Psychiatry Consultants was given copies of the drafts of the first five chapters of this volume for distribution. Fortunately they had some time in theater to prepare themselves.

In September, the one active component OM team was mobilized at Fort Benning, bringing together its Professional Officer Filler System (PROFIS) officers, levied enlisted complement and second-hand equipment for the first time. Anticipating the new CSC detachment TO&E,

it incorporated an occupational therapist officer and NCO in the place of other, unfilled specialties. The unit deployed in late October, set up a restoration program at the one combat support hospital then in Saudi Arabia, and immediately began sending out mobile consultation teams. Within days it had reversed the tendency to evacuate all "psychiatric cases" out of theater. As the one preventive psychiatric unit for 18th Airborne Corps, it quickly established a high degree of credibility.

Two of the six U.S. Army Reserve OM Detachments were activated just after Thanksgiving and deployed to Saudi Arabia the first week in December. One became the CSC asset for 7th Corps, that was then arriving from Germany. The second was assigned to the echelon above corps at Riyadh, and collocated with a general hospital. The neuropsychiatry consultant for U.S. Army Central Command (ARCENT) also reached Saudi Arabia in December. As planning for the expulsion of Iraqi forces from Kuwait proceeded, the ARCENT psychiatrist and command surgeon concluded that the OM team assets needed to be divided into their mobile teams and sent forward as close behind the combat maneuver brigades as the tactical situation allowed. Projected estimates for U.S. wounded and chemical injuries were high, if the veteran Iraqi soldiers were able to put up a stubborn defense and use their chemical arsenal and long-range artillery despite the planned U.S.-led air campaign. Stress casualties in such a scenario could equal one per three or even two wounded, and one or two per chemical injury.

Accordingly, ARCENT directed the two OM detachments, which were allocated one to each corps, to send their teams to join the "medical task forces" that would go forward into Iraq behind each division. It was judged that they did not yet have the logistical capability and field experience to try to accompany the maneuver brigades medical companies, as the draft field manuals advocated. As the air campaign progressed, the third OM detachment at Riyadh split into four teams. One team remained in Riyadh, two were sent to reinforce the OM teams supporting the corps, and the fourth team established a second-echelon restoration/reconditioning center at one of the major hospital complexes.[31]

During the short, fast-moving ground campaign, the stress control teams from the OM detachments moved forward with the surgical teams, holding cots, and preventive medicine teams that collectively comprised the medical task forces. Most of these were directly behind the maneuver brigades, leaving the main support medical companies of the division support commands far to the rear. Some stress control teams in 18th Corps reached the Euphrates valley. Few stress casualties were seen during the successful offensive, as prior experience predicts.

In the conferences that the AMEDD assembled to formalize lessons learned, the ARCENT surgeon stated that combat stress control had been one of the success stories of the Persian Gulf campaign in preventing unnecessary evacuations and returning soldiers to duty. However, it was recognized that there had been too few assets to simultaneously support the combat divisions and the rear areas that were subject to Scud missile attacks, as well as stressful environmental conditions. The medical leaders of 18th Corps, in particular, strongly encouraged the rapid fielding of the new CSC units, doctrine, and training. This advocacy assisted the expeditious fielding of these new CSC units, despite the downsizing of the U.S. Army following the breakup of the Soviet threat.

Equally important was that the active duty detachments were authorized most of their officers and all of their enlisted personnel full time (not as PROFIS fillers with full-time duties in the hospitals). This enables them to train with the units they support, to provide preventive stress control services to those units in garrison, and to deploy rapidly in war or operations other than war. In fact, the first CSC detachment activated on schedule on 16 December 1991 and one half of its personnel deployed to Somalia for Operation Restore Hope on 5 January 1993. It maintained teams in Somalia until February 1994.

Combat stress control detachment teams deployed to Haiti in September 1994, early in Operation Restore Democracy, and continued to rotate there after the mission was turned over to the United Nations. Another team deployed to Saudi Arabia in October 1994, supporting a show of force and training exercise in Kuwait in response to threatening Iraqi troop movements. In December 1994, part of a CSC company, most of a CSC detachment, and the neuropsychiatric ward of a combat support hospital deployed to Guantanamo, Cuba, to provide inpatient and outpatient treatment to Cuban refugees, as well as stress control support to the U.S. troops running the camps. These missions demonstrated the versatility and value of CSC units in military situations other than war, as well as war.

U.S. ARMY COMBAT ENVIRONMENTS

To be effective combat stress control consultants and treaters, the psychiatrist and other mental health officers and NCOs must have an exceptional degree of military credibility and knowledge of the supported units. They must understand and be conversant in the unit's missions, equipment, internal organization, special language and acronyms, and typical stressors and stress profiles. In this regard, CSC personnel are analogous to flight surgeons (see Chapter 8, U.S. Air Force Combat Psychiatry). They can only achieve the necessary expertise and credibility by "flying" some hours and days with similar units in realistic field training and operations. This textbook can only provide a brief overview and introduction to a few of the major branches of the U.S. Army.

Within each branch, specific types of units (and specific officer areas of concentration and enlisted military operational specialties) have their own mission profiles and typical physical and psychological stressors. To advise a commander on how to sustain and enhance his unit's performance, or to assure him that one of his soldiers is again ready for duty, requires more than a second-hand knowledge of what that performance and duty involves.

Combat Troops

Infantry

Infantrymen (there are as yet no infantrywomen) are men who engage the enemy in close combat, sometimes hand-to-hand, standing on their feet, lying on the ground, or dispersed in holes which they have found or dug in the dirt. In battle, and sometimes between battles, they must carry everything they need to fight and survive on their persons. Infantry can be categorized by how much they must rely on their own physical strength and endurance, separated from mechanical support. Special Operations Forces (the "Green Berets") and Rangers are all airborne (parachute) qualified, but may undertake prolonged and grueling missions, with only rare, air-dropped supplies. Airborne infantry are delivered by parachute or airlanding, but are reinforced by heavier units within a few days and continue to fight as light infantry. Light infantry and air assault infantry also must travel very light on the ground, but usually have helicopters and a few light trucks for rapid redeployment and resupply.

The mechanized infantry normally work as integral members of the "combined arms team" with armor. They travel in infantry fighting vehicles (IFVs) or armored personnel carriers (APCs) that enable them to keep up with the tanks. IFVs provide some ability to fire while on the move, but most of the squad dismounts to fight on the ground when assaulting or defending a position or clearing an area. Mechanized infantry therefore share many of the stressors discussed below for armor while having more logistical support (and logistical requirements) than other infantry.

Infantry make up the most numerous component of most combat forces. Because of their relative numbers and the degree of unprotected exposure to enemy weapons and the elements, they usually suffer the highest number of casualties and make up a large percentage of the battle fatigue cases. However, the percentage of battle fatigue casualties to killed and wounded among well-trained infantry units is typically lower than in armor, artillery, or combat services support units. An average rate for conventional combat is one battle fatigue casualty per five wounded, with at least an equal number treated and returned immediately to duty. Rates of 1:3 to 1:2 are seen in very prolonged and especially static combat.

In the elite special forces, ranger, and airborne units, the ratio has been strikingly low (less than 1:10 or 1:20) even in mass casualty battles. This is attributed to the benefits of tough training, close contact with trusted leaders and comrades ("vertical and horizontal unit cohesion"), and a sense (most of the time) of having some personal control over one's fate. The ground is the infantryman's protection, allowing dispersion and shelter if wisely used. To quote a Bill Maudlin World War II cartoon, Joe is looking at a tank and says to Willie, "I'd rather dig. A moving foxhole attrac's the eye." Mines, booby traps, and chemical contamination of the ground (requiring wearing of the protective ensemble) make the ground no longer a reliable friend, and are therefore especially stressful.

Infantry soldiers are especially prone to combat exhaustion as they are deployed rapidly and are subject to extreme physical work, sleep loss, and limits on available food, water, and hygiene. They can often feel unprotected or unsupported in the field of operations. Communication can get very difficult, especially at night or in restrictive terrain when visual contact with the rest of the unit may be

nearly impossible. Often moving quickly through difficult terrain or behind enemy lines, the special operations forces (SOF), light infantry, or mechanized infantry soldiers can become separated and anxious about being wounded and left on the battlefield. While this may heighten the soldiers' sense of unit cohesion, the effect of a lost or wounded member on the whole unit can be devastating.

It is in the field of battle that unit bonds are often tested and an entire unit can be immobilized or destroyed because of the one weak link in communication or trust. Prior to mobilization the unit members must get to know each other and especially to be confident in each of their abilities to fight together as a team. No unit should be deployed without the commander's having the opportunity to portray himself as a thoughtful and knowledgeable leader; a unit without confidence in its leader can fail, generating a large percentage of both emotional and physical casualties.

Because of the newer weapons technologies and the rapidly moving forward edge of the battlefield, fragmentation among infantry units can often occur. Devastation of life by enemy or friendly fire may be great, and the exposure to dead and wounded comrades as well as enemy is magnified. In this setting, human soldiers must often charge ahead and their sense of "neglecting" their buddies is intense. Sensory overload under these conditions can only be countered by the unit cohesiveness and bonding developed long before the mission is begun.

Ongoing development and testing for the "digital battlefield" of the "Information Age" of the 21st century proposes to give each infantry fire team leader, and perhaps each infantryman, a global positioning device that gives precise coordinates for his location on the terrain and short-range voice communication with other team members. There may even be a "heads-up" display inside the visor to his helmet that advises him of the locations of all other friendly forces and identified enemies in the vicinity, as well as much other information. Assuring that this technology increases combat effectiveness rather than creating distraction and dependency, especially in tired, fearful soldiers, will be an urgent topic for combat stress control in future field trials, training, and combat operations.

Armor

The armor branch soldier fights inside a tank—a heavily-armored, tracked vehicle capable of rapid cross-country movement on suitable terrain. The tank has a heavy gun for destroying other tanks and hard targets by direct (line-of-sight) fire, and machine guns for destroying exposed infantry and other "soft" targets. Tanks are most effective in the offensive in open country where, in combination with mechanized infantry and supporting artillery and air attacks, they can break through enemy defenses and spread havoc in the rear.

Much of the time, however, armor works in the offense or defense on more restrictive terrain, moving from position to position in coordinated movements with each tank much like an individual infantryman. Unlike the infantryman, however, the tank protects against bullets and artillery fragments, giving a relative sense of invulnerability. Modern tanks also have collective protection against chemical agents. Tanks are disabled (and less often destroyed) by other tank's guns, by direct artillery hits, by mines, and by a variety of infantry- or vehicle-carried antitank rockets, many of them now precision-guided.

Speed in firing first or in taking protective countermeasures (measured in seconds, if not split-seconds) can be crucial to survival. When the crew compartment of a tank is breached or the tank burns or explodes, escape may also be a matter of seconds, and death can be especially gruesome. Battle fatigue rates are therefore high among the survivors or witnesses of the deaths of fellow crew, relative to the number of wounded who get out alive. Battle fatigue to wounded ratios of 1:2 and 1:1 have been reported when armored units were caught at a disadvantage or unexpectedly found themselves outclassed by superior tanks or infantry antitank weapons.

Tanks, while giving the soldier a sense of confidence, can be sources of problems. Highly technical in today's U.S. Army, these weapons are at best finicky, subject to heavy vibration and jolting in operation, require continuous maintenance, and demand specialized skills to operate. Armor crews tend to be closely knit units, where deviance, defiance, and "specialness" are not readily tolerated. Individuals working in tank crews have to rely on the skills of their comrades, live for weeks to months together in very close proximity, and often get to know each other on an intensely personal level. The operation of the tank is dependent on each person's doing his job; the tank does not operate fully if one member of the crew is incapacitated. Maintenance units that take care of the machinery have to be reliable and known by the operators; "slacking off" is not tolerated.

Tankers rarely see their human victims close up. The mission of armor units is to neutralize other similar or smaller-sized enemy weapons. Because of this, tankers are prone to periods of heightened enthusiasm and letdowns after the mission is accomplished. Debriefing is especially important and the tendency to focus on the mechanical details of the mission, create distance from the destruction, or overpersonalize the killing, may be compelling dynamics with these crews that must be dealt with constructively.

Modern tanks have night vision and infrared sights and laser rangefinders that can make true combat sensorially much like a complex team computer-simulation task or arcade game. Individual crews now train at their tasks in "high-tech" simulators, "moving" over virtual-reality terrain and engaging virtual-reality targets that, although still substantially abstracted, are not that different from what would actually be seen. Multiple simulators can be linked together so that three to five tanks in a platoon can be maneuvering together on each other's scopes.

The combined arms team can even train together in virtual reality, with attack helicopter crews and mounted mechanized infantry all in their own simulators (perhaps even located on distant posts) working in concert on the same computer-generated terrain, supported by field artillery fire direction centers who respond to calls for artillery fire that the computer faithfully represents in real time. Research and development for the "digital battlefield" is equipping each tank with global positioning devices linked by computers and computer-generated displays in each tank and at its higher headquarters.

The successful integration of information technology into armored formations may be technically easier than with dismounted infantry, but it will still require extensive human factors evaluation and training. It must be remembered that ground war, more than air, sea, or space war, is fought under very "dirty" physical and emotional conditions. Continuous and even sustained operations are often required. Strict limits on the size and weight of equipment demand compromises: air conditioning may be necessary for the computers, but little has traditionally been invested to provide comfort for the crew members. If the "high-tech" systems break down under the strain of field operations, the crew must be capable of fixing them or carrying on without them. Fear, grief, rage, guilt, or simple sleep loss must not be allowed to impair the crucial human components of the system.

Field Artillery

The mission of field artillery is to lob projectiles of high explosives or other munitions to places relatively far away and out of sight on the battlefield. Artillery crews are usually eight to ten people, working in sections of three to four crews. Two sections comprise a battery, the equivalent of an infantry or tank company.

The towed, tube artillery are wheeled guns (technically "howitzers") that can be air-transported to support light infantry and are towed behind their "prime movers" (relatively light-weight trucks). They provide minimal protection for their crews. Firing the large shells at a rapid rate is heavy physical work. Self-propelled tube artillery are large howitzers mounted on tracked vehicles, less armored than tanks, but providing some crew protection. They are supported by other tracked vehicles carrying additional ammunition. The latest versions provide more mechanization for moving and loading the heavy shells. Missile artillery such as the Multiple Launch Rocket System (MLRS) are also tracked vehicles with considerable mechanization, but still require substantial heavy work.

Field artillery batteries and sections may be stationary at "fire bases" in some low-intensity or static combat scenarios. In "high-tech" combat, they must be highly mobile, whether to keep close behind the moving armor or to avoid the enemy's own "counter-battery fire." Modern radars can locate the source of artillery fire quickly, perhaps even before the shells ("rounds") have landed. The addition of global positioning devices and on-board, interactive computers to the most modern howitzers or rocket launchers greatly increases their ability to "shoot and scoot"—to stop, fire rapidly at a mathematically determined location, and move elsewhere. Without this enhancement, emplacing the battery is a very deliberate and precise process.

Like tank crews, soldiers in the field artillery are highly specialized technicians, especially the NCOs and officers. The potential for destruction by enemy action, while less than for infantry or armor, may be catastrophic when it occurs. The potential for error injuring one's own crew or distant friendly units is also great. Artillery units avoid direct combat with enemy ground forces, but must defend themselves against harassment and, rarely, by direct fire against infantry or armor attack (which they are likely to lose). When casualties are suffered, the ratio of battle fatigue casualties to wounded is likely to be higher than in the infantry.

Certain psychological defenses must be encouraged and supported during these soldiers' missions. Artillery soldiers have to closely rely on each other for both support and technical expertise. Training constitutes a large portion of these soldiers' days. The artillerymen have specific team drills with built-in double checks to process technical and mathematical data without error. As long as these drills are followed, tired and stressed teams are able to function accurately, if perhaps less rapidly. When stress or overconfidence leads to taking short cuts, disasters can occur, as shown in this case known to the second author.

Case Study 1: Live Fire Error

On a U.S. Army post, one artillery shell killed several infantrymen far from the allowable "impact area" on post. Investigation revealed that an artillery battery had fired that round with all seven bags of gunpowder instead of the appropriate four bags. The battery was in the last hour of a 3-day continuous operations field exercise and was firing all of the remainder of its ammunition in a sustained barrage. The enlisted soldier whose job in the drill was to take three bags out and drop them on the ground had simply failed to do so. The second soldier whose task was to count the bags and throw them into a common pit had fallen behind in his task. Bags had accumulated on the ground, so that double-checking was not simple. While the battery had had a sleep plan, both junior soldiers had stayed awake during their last "down time," helping out. The defense lawyer called the second author for advice on who was at fault.

Comment: This is the type of error of omission that is most likely with sleep loss. The muscular work of rapidly loading artillery rounds can have an almost hypnotic rhythm, punctuated by the highly reinforcing "ritual" firing and recoil of the howitzer. The final "crescendo" before going home would have produced a euphoric "adrenalin high" in the sleep-deprived brain. The ultimate responsibility has to fall on the crew chief (with some for the section chief), first for failing to assure that every double-check in the team drill was being faithfully performed and second, for not having enforced the sleep plan. Predictably, the officer and senior NCOs had not enforced the sleep plan for themselves, and were substantially more sleep-deprived than any of their enlisted soldiers.

The coordination and computation of the firing data are calculated for the entire battery by a Fire Direction Center (FDC) team. These teams are equipped with computers and radios, but can also perform manual (chart) calculations. The following case illustrates the potential effects of fatigue on these and other types of Tactical Operations Center (TOC) team performance.

Case Study 2: Fire Direction Control Research Study

Fire direction teams of one officer and four enlisted from an elite unit conducted sustained operations for up to 42 hours in a realistic mockup of an FDC tent. The scenario provided a detailed sequence of events in a combined arms operation across a map that provided comparable measures of speed, accuracy, and preplanning every 6 hours. The teams' tasks (as in combat before the fielding of special field artillery digital computers) was to manually plot the location of targets called in over the radio, and to derive range, bearing, angle of gun elevation, and charge. Some targets were called in with requests for immediate fire ("fire missions") while others were called in to be plotted for firing "on-call" or at a future scheduled time ("preplanned targets"). The FDC was also expected to update its situation map based on messages from the simulated units and to establish that targets were not at the locations of friendly units, in no fire areas, or otherwise requiring clearance from higher headquarters under the rules of engagement. Ammunition requisition and other self-initiated preplanning was expected.

Throughout the sustained operations, the teams' ability to perform their highly practiced and precise team plotting tasks, even under urgent time pressure, was unimpaired. However, after about 24 hours, they fell behind in updating their situation maps and precalculating the positions and firing data for the preplanned target lists. They lost their grasp of their place in the operation. They no longer knew where they were relative to friendly and enemy units. They no longer checked what they were firing at. When called upon to fire at several urgent targets concurrently that involved preplanned targets (which they had accomplished well early in the exercise) long delays and random serious errors occurred. Some of those errors involved their fire falling on friendly locations.

Comment: Similar and even worse problems of preplanning and internal and external communications can be expected in the headquarters staffs and tactical operations centers of infantry, armor, and higher echelon commands whose tasks do not provide the highly practiced and double-checked drills of the FDC. The development of automated data processing (computers) will reduce the need to depend on memory or make mathematical calculations. However, they may compound the problems in communication, decision making, and preplanning by lulling the staff into a false sense of security and concealing signs of system error until they are irreversible. Sleep plans are essential for all command, control, communications, and intelligence (C^3I) staffs.[32]

Artillerymen can feel more important than the average soldier because of the killing power of their weapons, the supposed "smarts" required, and the relative "luxury" of being able to transport comfort items. Conflicts can arise because of this. Artillerymen may also feel guilt (or defend against

feeling disgust or guilt) at a killing process that, in most situations, keeps them relatively secure and comfortable. Mental health professionals must pay attention to the possibility that anger and depression may be present in these soldiers as they alternately feel important and useless in the overall mission on the battlefield. Another risk for artillerymen is that of fatigue.

It should be remembered that forward observer teams of artillery officers and NCOs deploy forward as integral members of infantry and armor formations. They share all of their hosts' environmental risks and stressors, with the additional stressor of being responsible for calling down devastation out of the sky, sometimes dangerously close to themselves or other friendly units.

Air Defense Artillery

This branch is responsible for the defense against enemy aircraft and ballistic missiles. Small teams with shoulder-held anti-air missiles are attached to infantry, armor, and field artillery units and share most of their hosts' stress environments. Teams with "high-tech," mobile missiles and ultra-rapid-fire guns, supported by mobile radar teams, are deployed to protect key targets such as the brigade and division support areas and corps base defense clusters. Larger missiles such as the Patriot are used to protect key air bases and ports throughout the theater of operations against ballistic missiles and long-range aircraft.

Unlike the field artillery, which are rarely totally idle, most air defense artillery in recent wars have had to sustain vigilance with little or no opportunity to fire; the exception was the Patriot missile units in the Persian Gulf War, deployed both in Saudi Arabia and Israel. There, the political impact of their presence far outweighed their actual (subsequently determined) performance, and placed upon them a heavy burden of responsibility. Fatigue and stress became a significant factor for those crews. The deployment of Patriot batteries to South Korea in 1993 as a show of resolve suggests that the responsibility will continue, and become even heavier if a potential opponent is known to have chemical, biological, or nuclear warheads.

Army Aviation

U.S. Army Aviation is currently restricted to rotary (helicopter) aircraft. Because of their ability to hover, fly "nap of the earth," and land on many kinds of terrain, helicopters are especially suited to the close support of land battles. Attack helicopters are well armored and very heavily armed, with "high-tech" target acquisition and navigation equipment. Scout helicopters are lightly armed and armored, and often work in teams with the attack helicopters. Cargo helicopters are used to ferry combat troops, ammunition and supplies, sometimes into "hot" landing zones. They have minimal armor, and may mount machine guns for self-defense. Medevac helicopters are unarmed, in accordance with the Geneva conventions. All helicopters are vulnerable, to a greater or lesser degree, to small arms fire and especially to missiles from the ground, as well as to other attack helicopters and jet fighters.

A special pride is felt by soldiers who fly aircraft. Perhaps the most technically trained and responsible soldiers, these men are proud of their contribution to the Persian Gulf War, and believe that their "machines" are the best, the most sophisticated, and the most expensive. Fliers also rarely see their victims close up. The thrill of hitting the target in a gunship raid, sneaking through enemy lines to guide troops and spot aggressors may be counterbalanced by unconscious guilt at the mass destruction caused, yet unseen. Aviators have to train as a group, but when any group of young, highly trained professionals converges, competition can become quite intense.

Pilots tend to be highly aggressive and individualistic, as noted in Chapter 9, U.S. Air Force Combat Psychiatry. Many of the author's observations about U.S. Air Force pilots also apply to U.S. Army pilots. These soldiers must be subtly reminded that they are part of a larger organization that they need as much as it needs them. Fliers can be demanding, privileged individuals who have to rely on the cooperation of air support troops, those who service the craft and provide all logistical support. Like U.S. Air Force aircrews, U.S. Army aircrews have a unit flight surgeon to monitor their physiologic and mental status and ground them if they have become unsafe. However, the U.S. Army environment is more dirty, dispersed, mobile, and spartan, perhaps leading to more fatigue and physiologic stress than in the U.S. Air Force.

Mental health professionals may have to take a humble and reassuring stance when interacting with pilots and others in the aviation corps to allow for adequate ventilation of frustrations and anxieties. Pilots are very concerned about being taken off flight status if they admit to emotional problems

(especially suicidal thoughts). They will not open up to a mental health officer they do not know and trust, as was also noted in Chapter 8.

Combat Support/Combat Service Support Troops

There is a poorly defined distinction between the "combat arms" (who actively try to kill the enemy, as attack helicopters do), and the combat support and combat service support branches. Combat support, in theory, refers to those who actively facilitate the battle (such as the Signal Corps, Military Intelligence, Engineers, Military Police, and the Special Operations Forces' Psychological Operations and Civil Affairs units) while combat service support (CSS) refers to those who sustain the ability of the combat arms to fight by transporting the ammunition, fuel, food and water, servicing and repairing the equipment, providing health care, sorting the mail and providing other personnel and administrative services.

The distinctions between "combat" and "support" are often arbitrary and inconsistent across soldiers within a branch or corps. The combat engineers are a macho "combat arm" who share and often exceed the risks of the infantry and armor as they precede them into battle to clear minefields and bridge or blow up obstacles. They rely on sophisticated armored vehicles or brute strength, and defend themselves or attack enemy positions with personal and heavy weapons. The civil engineers use military versions of civilian equipment to build roads, buildings, and other infrastructure in the rear. The combat signalman crouches alongside the infantry platoon leader under fire, while signal battalions set up and operate the mobile subscriber telephone nodes, satellite uplinks, and other communications throughout the theater of operation. The military police may be far forward or far to the rear, maintaining route security, securing and guarding enemy prisoners of war, or enforcing the Uniform Code of Military Justice (UCMJ) on U.S. service members who misbehave.

Mechanics can be found in contact teams operating recovery vehicles on the battlefield, in maintenance companies in the brigade and division support areas, and in large depots in the corps rear. Truck drivers in infantry battalions drive forward in convoys at night to deliver supplies at a rendezvous with the maneuver companies' first sergeants, scant kilometers from the enemy. Truck drivers of division and corps transportation or petroleum distribution companies may drive cross-country through minefields at night, trying to keep the advancing armored formations supplied, or may drive only along well-secured main supply routes in the rear with military police escort.

Even the personnel clerks, supply clerks, and cooks may be assigned in an infantry battalion headquarters company, performing guard duty at night for the brigade support area. Alternatively, they may be in a corps headquarters or quartermaster ordnance or personnel administration unit, in a "safe" rear area with only periodic charge-of-quarters (CQ) or staff duty at night. The cooks everywhere work extra-long hours. Of course, on the modern battlefield, no place is totally safe. Even the U.S. Army stevedores unloading ships at the port of embarkation may be subject to ballistic missile or terrorist attack.

Because most CSS troops are further from direct contact with the enemy and further from enemy artillery than the combat arms, fewer CSS troops are killed and wounded in action. However, when they do suffer attack, their ratio of battle fatigue casualties to battle casualties is typically higher than in the "combat hardened" combat arms.

It can be hypothesized (but should never be presumed) that the combat support/service support soldiers who are *integral* to forward combat units will take on some of the typical psychological characteristics and stress profiles of their assigned units. Those who are only *habitually* attached may be a little less so inclined. Soldiers or teams who are only *temporarily* attached or recently arrived far forward will be in transition and under the highest stress. Personnel who are in familiar units of their own kind in areas with very low probability of attack may come closest to fitting the stereotype of the rear area soldier (the "REMF," or Rear Echelon Mother F—er, as the combat soldiers in Vietnam labeled them).

The stereotypic REMFs are managers, not leaders. At his worst, the REMF is the petty (or senior) bureaucrat who enjoys exercising arbitrary power over others and uses the rules and regulations to do so. The REMFs take advantage of their positions to acquire even more benefits and comforts than their rear-area positions naturally provide them, often at the expense of the combat soldiers for whom those comforts (supplies, equipment, R and R facilities) were intended. Low-ranking REMFs who have no power (and even some higher-ranking REMFs who do) are prone to the disorders of frustration and loneliness, as discussed in Chapter 3.

The rear-area soldiers (whether REMF or "regular Joe or Jane") may feel not part of the battle,

unappreciated, and left out of both the excitement and tragedy of war. Some secretly wish to participate in the battle and can feel inadequate, cheated, and inauthentic as soldiers. They may take dangerous risks or violate regulations to gain macho souvenirs such as enemy weapons. They may have too much boring time without meaningful duties, and too much access to the temptations of substance abuse, unsafe sex, or other misconduct. These misbehaviors need the special intervention of mental health workers because they are contagious, and because without supplies and other logistical support, the combat troops cannot fight.

Some features of the Persian Gulf War worked to counteract many of the traditional causes of the REMF syndrome. The strict prohibitions on alcohol, substance abuse, and nonmarital sex of the host nation, and the deliberate segregation of most U.S. units from the local population in Saudi Arabia were protective, but will not occur in all future deployments. The U.S. Army does have a strict drug abuse prevention policy and may adopt a "no alcohol-in-theater" or "only 2 beers at unit functions" policy, very different from the active pushing of alcohol in Vietnam.

The priority of deploying combat forces to deter further aggression during Operation Desert Shield (the mobilization phase of the Persian Gulf War) meant that there was a very low proportion of combat service support troops, who accordingly worked extremely long, hard hours. Living conditions were initially as austere for the CSS units as for the combat arms, and the senior U.S. Army leadership deliberately kept it that way. They did not build up a comfortable supporting base. In part that was to reassure the host nation that there was no intention to stay. The logistical system was also too tasked with bringing in war materials to bring in luxuries. The senior leaders also remembered, however, how much they and their troops had resented the REMFs when they were junior officers and NCOs in Vietnam. They deliberately lived spartanly themselves, and required austerity of all their subordinate CSS units. Some leaders required their rear area CSS soldiers in safe areas to wear helmets and even flak jackets when there was no threat, as a symbol of solidarity with the combat soldiers.

Finally, when the Scud missile attacks began, and later when the ground offensive proceeded with relatively few U.S. casualties, whatever guilt or sense of unimportance many CSS personnel may have felt was absolved. The senior leadership did praise the logisticians part in winning the war. However, many CSS units did miss out on the victory parades and felt unappreciated by civilian society when they returned home late after staying to clear up the battlefield and store or ship the equipment.

It should also be remembered that a large percentage of CSS units are in the reserves, and so face the additional stressors of seriously disrupted occupational, financial, and family affairs. The importance of building high unit cohesion and strong family support groups in reserve units is obvious, but is not easily accomplished except in units from small towns with strong roots in the civilian community.

The following disguised case history illustrates inadequacies of leadership and questionable conduct in a CSS unit, as revealed in a delayed end-of-tour debriefing following the Persian Gulf War.

Case Study 3: Leadership Problems in a CSS Unit

A reserve transportation battalion was deployed to the theater shortly before combat began. As expected, its companies and teams were widely dispersed, attached to other units for logistic and administrative support while performing heavy, sometimes dangerous, duties. The dispersed elements felt that their headquarters did not keep track of them or assure their support. The commander was perceived as having several favorite officers (all white males), while devaluing minority and female officers and all NCOs. Rules were applied unfairly; for example, even married enlisted couples in the unit were denied conjugal privileges while it is alleged that the favorite officers slept with whomever they could "persuade." The battalion chaplain was perceived as the commander's spy, since retribution seemed to follow soon after any complaints were shared with him.

All awards and decorations after the war went to the white male favorites. The unit cooks who had been levied to drive trucks in a heroic night convoy to take supplies through minefields (illuminated only with blackout lights and following in the tread marks of the tanks that had gone before) did not even receive certificates of appreciation because "they were just doing their jobs." The company commander who had organized the convoy but stayed behind at headquarters received the decoration for valor.

The unit was late in redeploying home, missing all the victory parades. The soldiers rejoined unsympathetic employers, families, and creditors who said they'd "only been support troops, not in combat." The commander and favorite officers immediately left the unit, taking their awards with them, and leaving the previously devalued NCOs plus new officers in charge. Within a year, many unit members were reporting symptoms of fatigue, trouble concentrating, hair loss, joint pains, and other complaints. They attributed their symptoms to exposure to antimissile radar emissions (from an installation near their headquarters in the theater) or chemicals.

Comment: The question of whether the symptoms were caused by some exposure or exposures deserved, and received, intensive medical evaluation. What was unquestionable during the debriefings that these units participated in over a year after their return was the open anger and sense of betrayal expressed by the junior NCOs and enlisted. The senior NCOs retained their professionalism during the debriefings, but confirmed the enlisteds' memories of the events in private conversation. The role of a sense of betrayal and injustice in the etiology of PTSD has been emphasized by Shay.[33] It was unfair to accuse the chaplain of violating confidentiality—the commander could have simply been good at guessing, or indiscriminately punished every suspect when the chaplain advised him of low morale and the reasons for it. However, had the unit's elements been visited routinely by mental health/CSC (MH/CSC) teams while in theater, the original poor leadership and questionable conduct could have been corrected.

Evolving U.S. Army doctrine and organization[30] calls for the area support medical battalion mental health section, reinforced by teams from the CSC Company, to visit every company-sized unit every few weeks to conduct unit survey interviews with the troops. These structured interviews serve both a data gathering and a ventilating function. The MH/CSC teams' command consultations might have inspired the commander to improve his ways or, that failing, have advised his senior commander.

The unit should also have had an end-of-tour debriefing and scheduled homecoming debriefings before redeploying home. The family support groups should have been involved in posthomecoming activities that validated the spouses', and their own, honorable service under hardship and (for some) real danger. Those measures would have decompressed the anger and facilitated constructive action a year sooner.

One group of CSS troops deserves special attention from the MH/CSC organization and others. These are the formal Mortuary Affairs units (previously called Graves Registration). Those who must recover, process, and transport the bodies of the dead and their personal effects are at very high risk of developing post-traumatic stress disorder. This is often of the delayed type because of the tough emotional shell they form to perform their gruesome duties day after day. There are also many other soldiers in all other branches and military specialties who are temporarily detailed to body recovery and disposition duties, or who are exposed to human remains. These include the tank turret mechanics or ordnance specialists who cannot repair the tank until they have washed out the remaining blood and pieces of tank's crew, who had been lying under the sun for several days. Chapter 10, Combat Stress Control in Joint Operations, provides a summary (information card) on measures these people should take to enable them to perform their very important morale-sustaining duties and return home feeling proud about what they have done without being haunted by the dreams and memories they may have for the rest of their lives.

The Medical Combat Health Support Troops

Combat medics share all of the stressors of the combat arms units they support. Battalion aid stations (Level I care) follow close behind. Medical companies maintain clearing stations and treatment teams in the brigade support and division support areas close to the front and at base defense clusters in corps. These companies can move themselves rapidly, tearing down and setting up within hours. Although technically privileged against attack by the Geneva Convention, they are often forbidden by the tactical commanders from showing the red cross on white background emblem.

Forward surgical teams (replacing the current Mobile Army Surgical Hospitals) can reinforce the medical companies as far forward as the brigades. Dental teams set up to support troop concentrations. Preventive medicine and veterinary teams routinely visit units to inspect sanitation, disease vectors, and food supplies. Ground and air ambulances are prepositioned or deploy forward to bring casualties quickly back to the clearing station (Level II) and hospital (Level III) care.

The hospitals use Deployable Medical Systems (DEPMEDS) expandable shelters, TEMPER (tent, extendible, modular, personnel) tents, and prepacked sets to assemble a climate-controlled complex of wards, operating rooms, laboratory and x-ray radiographic facilities, pharmacy, administrative, and admission and disposition areas. The hospital staff are usually quartered in general purpose (GP) large tents without climate control. Hospitals take days to set up and break down, and many trucks from nonmedical sources to move. They also require extensive logistical support to operate. They are therefore normally located in the corps, although some may be close to the divisions. Hospitals normally do show the red cross, indicating privileged status.

Casualties with medical diseases and nonbattle injuries may reach the aid stations, clearing stations, and hospitals at a fairly steady rate, barring some epidemic illness or mass casualty accident. The war-wound surgical caseload, like battles, are likely to come in surges separated by lulls. It is the role of the medical regulating officer at the medical group headquarters to spread the casualties somewhat evenly, and to direct patients who need spe-

cialty team care to the hospitals that have those specialty teams. In major battles, all hospitals may experience mass casualty conditions. Sick or wounded enemy prisoners of war are also brought to U.S. hospitals. The Geneva Convention[34] requires that they be treated the same as U.S. casualties, according to the same triage categories.

What are some of the stressors unique to medical units? The AMEDD professionals and specialty technicians often do not train frequently under field conditions, and so are unfamiliar with the sets, kits, and outfits. They may not appreciate why they do not have their familiar, latest drugs, sutures, and diagnostic equipment, in field-portable form. They may have difficulty acclimatizing to the dirt, discomfort and primitive hygiene facilities, as well as to the separation from home and the potential of personal danger. Many are PROFIS or IRR (Individual Ready Reserve) individuals who are joining unfamiliar units that may or may not already have a unit cohesion that incorporates them. The highly specialized professionals and technicians are often very concerned if they are unable to practice their specialized procedures, lest they lose their skills and their credentials.

Treating seriously wounded casualties is stressful, but justifies to the medical personnel why they themselves are there. It quickly builds and sustains unit cohesion unless something disrupts the patient care. However, the casualties can arouse several distressing ethical issues. How do different individuals deal with the moral dilemma of placing patients in the "expectant" triage category, especially the patients they know they could save if they only had fewer patients, more supplies, or the "high-tech" equipment back in their stateside hospital? How do they face the moral dilemma of saving the grossly, pitifully disabled patient when they *do* have the resources to do so, especially if the patient begs to be given "grace" (euthanasia)? How do they face the moral dilemma of returning soldiers to duty, perhaps to be wounded again or killed, when they themselves do not have to risk direct combat? May they become overwhelmed or depressed by their inability to relieve the suffering or save the lives of so many young Americans with whom they identify? How do they deal with their anger, hatred, and perhaps guilt, when treating the injured enemy prisoner who may have been the one who wounded those not-quite-so-urgently triaged American soldiers next to him? May they be upset at being forbidden to treat local foreign civilians in need who are not the U.S. Army's responsibility? May they be horrified at receiving the victims of atrocity, including women and small children, who *are* their responsibility to treat, as when the Iraqi Shiite victims of Republican Guard massacres in southern Iraq were air evacuated to U.S. hospitals in theater after the Gulf War?

Medical personnel often tend to deny stress in themselves, and may have to be approached diplomatically or indirectly by mental health/CSC consultants. Special attention should be given to those personnel who are not normally direct patient care providers. Those persons usually have less "stress inoculation." They include the food service, maintenance, administrative, and laboratory personnel. These are the ones most likely to be detailed to be litter bearers for the severely injured, attendants for the expectant patients, or handlers for the bodies in the morgue.

Hospitals are nominally staffed for two 12-hour shifts a day, but mass casualties can require continuous or sustained operations for periods of several days to weeks. Fatigue impacts heavily on patient care as well as on morale and stress tolerance. Medical personnel can become battle fatigue casualties, and require treatment according to PIES (**p**roximity, **i**mmediacy, **e**xpectancy, and **s**implicity), with the five Rs, as discussed in Chapter 10. Stress and fatigue can also disrupt interpersonal communication and cooperation, impairing unit efficiency in subtle ways. Misconduct stress behaviors can occur. These include "self-medication" with alcohol and with the drugs that are available (by pilfering or "skimming") in medical facilities. Seeking solace in sexual relationships is a natural reaction to loneliness and "living on the edge." However, fraternization (heterosexual as well as homosexual) and adultery are criminal violations of the UCMJ. Consensual heterosexual misconduct has rarely been punished, but its occurrence in medical units adversely impacts upon unit morale, especially when unit leaders are involved. The rumors and aftermath of "deployment affairs" can also have harmful effects on families back home.

Monitoring these many stress issues and intervening when indicated is a command and leadership responsibility.[29] The hospital or battalion chaplain can often be helpful. Responsibility is also given, by doctrine,[30] to the neuropsychiatric ward and consultation service in the hospitals and to the medical combat stress control company or detachment that is providing area support in the vicinity. Interventions are reviewed elsewhere in this textbook.

MEDICAL/PSYCHIATRIC ORGANIZATION AND THE COMBAT STRESS COMPANY

The neuropsychiatric and mental health team consists of neurologists, psychiatrists, clinical psychologists, social workers, psychiatric and mental health nurses, occupational therapists, and the various enlisted technicians in those specialties. Mental health professionals in the Army Medical Department (AMEDD) are those commissioned officers and enlisted personnel specialists trained and credentialed to provide the various mental health functions. In addition to those previously mentioned, other professionals can be qualified for these specialized services such as physician assistants (PA), counselors, and chaplains. Para-professionals or technicians are the behavioral science specialists (91G), psychiatric specialists (91F), and occupational therapy specialists (91L).

The Mental Health Program

The mental health program of the military is somewhat different in peacetime from that during mobilization. The U.S. Army regulation that is the basis for both is *Neuropsychiatry and Mental Health*.[26] The regulation prescribes and refines policies and concepts regarding neuropsychiatry (NP) principles for mental health staff and facilities. This directs the neuropsychiatry / mental health staff to advise and assist command to conserve and maintain manpower at maximum efficiency. While the emphasis is on mobilization, it is important during peacetime to prepare by employing common neuropsychiatry and mental health principles. Neuropsychiatric and mental health personnel must be ready and responsive for mobilization and other missions as required.

Basic Principles

Based on experiences gained during World War I and World War II, the Korean conflict, and the Vietnam conflict, the following principles have evolved for the prevention, treatment, and administrative management of neuropsychiatric and stress disorders. Major emphasis is placed on *preventive* psychiatry and mental health programs that lead to early recognition and preventive treatment of potential mental health problems. This is similar to preventive medicine concepts. Neuropsychiatric personnel make a primary contribution to this program by fulfilling the appropriate responsibilities outlined in the U.S. Army mission.

While neurology and psychiatry functions are generally separate during peacetime, in mobilization the neuropsychiatric emphasis collocating neurology with psychiatry is used. Both battle and nonbattle injuries and illnesses are thus coded in those categories. In addition, the "neuropsychiatric" term clearly includes the organic (physical) as well as the functional (mental) types of disorder. This is particularly important in trauma, and nuclear, biological and chemical (NBC) scenarios. In Medical Force 2000, the only neurologist is in the general hospital. In the proposed Force 21 AMEDD, neurologists may not be included in the TO&E of deployed hospitals or CSC units, but will be available to provide consultation via telemedicine.

In combat, treatment of battle fatigue and other types of neuropsychiatric casualties will be *instituted early*, as near the unit of origin as practicable. Proper psychiatric treatment of neuropsychiatric casualties requires a military environment rather than a traditional hospital atmosphere. Mild "duty" cases should be treated and returned to duty immediately from the battalion aid station, brigade, or division or area support medical company medical treatment section or hospital admissions and dispositions section, or in nonmedical units whenever the tactical situation permits.

Early return to duty is the therapeutic objective. This can be accomplished only if the medical officer accepts full responsibility to make often difficult diagnostic or disposition decisions objectively and without delay. Neuropsychiatric referrals from supporting or noncombat troops should be made to the nearest mental health personnel who are often stationed forward of the combat service support unit. Moderate "rest" cases who cannot return to their units immediately but who do not need medical or mental health observation and treatment or both should be sent to rest for 1 to 2 days.

Patients suffering from severe battle fatigue (hold or refer), or other neuropsychiatric patients who cannot be returned to duty at the forward facilities, are to be channeled to the division medical support unit(s) having mental health / CSC capability. These teams must have a capability of providing rest and restorative therapy for up to 72 hours prior to return to duty. Those casualties who prove to need longer treatment will be evacuated to a 7- to 14-day reconditioning program at CSC facilities in direct or general support of the unit. After that period, the individual will be returned to duty or evacuated to

the communications zone or CONUS Level-IV reconditioning program.

In noncombat situations the evaluation, treatment, and disposition of nonpsychotic psychiatric patients, except in unusual cases, will be on an *outpatient basis.* Their retention on duty status facilitates therapy and reduces ineffectiveness. In both combat and noncombat situations, *direct communication and liaison* among neuropsychiatry (MH and CSC) staff (for example, between division psychiatrists and the theater neuropsychiatry consultant) through technical channels as approved by appropriate command surgeons, are indispensable to monitoring evacuation and issuing policy. Such communication must be actively encouraged.

The *rapid communication* of technical information, especially in combat, is essential to an effective mental health program. It should be recognized that the greater the combat pressure, the more difficult it becomes to maintain necessary communication. Therefore, maximum use of direct forwarding of technical reports must be done, consistent with good judgment and propriety.

The overall effectiveness of any neuropsychiatry program is dependent on the proper *numbers, distribution, and assignment* of qualified mental health personnel. It is essential that the staff promote training and make accurate evaluations of mental health personnel to assure their appropriate assignment. Neuropsychiatry personnel should ensure that all medical personnel have some familiarity with basic combat psychiatric principles.

All mental health combat stress control personnel should be cross-trained in specialized topics and techniques to include:

- Briefing on CSC unit status, functions and capabilities.
- Educating leaders, chaplains, and medical personnel on stress casualty identification, management and disposition; substance abuse; suicide prevention; family violence prevention.
- Teaching stress management, relaxation techniques, coping skills, grief and anger management, conflict resolution, parenting.
- Facilitating small team after-action debriefings by unit leaders.
- Leading critical event debriefings of functioning military teams.
- Conducting individual and small group debriefing of stress casualties.
- Assessing interviews, basic mental status, and recognition of signs requiring additional mental or physical status workup by specialists.

Each of the five MH/CSC disciplines also brings areas of special expertise, which may be partially cross-trained to the others. The psychiatrist, as working physician, practices psychiatry in the triage, diagnosis, brief intervention treatment, and disposition of soldiers and patients. The psychiatrist assists with triage and acute trauma life support during mass casualties, and assists with routine sick call and care of the ill, wounded and injured, especially those with return-to-duty potential. The psychiatrist should be ATLS- (Advanced Trauma Life Support) qualified by the Combat Casualty Care Course, and have completed the NBC casualty care course.

The occupational therapist (OT), assisted by the NCO and enlisted specialist, increases the capability to evaluate physical and mental functional capacity related to combat duty performance; prescribes and supervises therapeutic work and recreational activities for recovery battle fatigue cases in support of the host medical facility; and assesses alternative duty assignments for soldiers who cannot return-to-duty in their original specialty. The OTs also advise unit commanders regarding work schedule organization and time management, constructive structuring of rest and tension-relieving activities, and use of work assignments in preventing battle fatigue and misconduct stress behaviors and in restoring recovered cases to full duty. The OTs provide rehabilitative care for minor orthopedic injuries, especially of the upper extremity.

The psychiatric nurse (66C)/clinical nurse specialist (66C7T), assisted by the 91Fs, greatly increases the capability to stabilize and hold potentially disruptive cases at forward locations for further evaluation. Some cases can be returned to duty at this echelon, if they improve in 24 to 36 hours with sleep and a structured military milieu, instead of having to be evacuated immediately to a hospital in the corps area. If the position is filled by a clinical nurse specialist, as authorized by the TO&E, this nurse may be credentialed to prescribe selected psychotherapeutic drugs. The psychiatric nurses are especially suited for consultation and preventive interventions with other medical and nursing staffs in medical facilities. Psychiatric nurses in the corps hospitals provide further stabilization for either transfer to CSC reconditioning programs or for air evacuation out of theater.

The social work officer, assisted by the 91Gs, applies the principles, knowledge and skills of

social work to the psychosocial systems of U.S. Army units and their Family Support Groups. They are prepared to coordinate with other Department of the Army, Department of Defense, and civilian support agencies. The social worker provides mental health assessment and treatment, coordinates support for division soldiers and families, and has expertise in prevention/intervention for family violence and substance abuse control.

The clinical psychologist, assisted by 91Gs, provides diagnostic assessment, and can administer and interpret psychological and neuropsychological tests to diagnose problem cases and assess potential for recovery. The psychologist's treatment and consultation skills include the behavior therapies and focused applications of learning theory. Doctoral-level psychology training in research methods and statistics contributes in unit surveys and the analysis of trends.

THE FUTURE

The U.S. Army's battlefield tenets of initiative, agility, synchronization, and depth are designed to surprise and overstress enemy forces.[35] They make the enemy incapable of cohesive action. Those same tenets demand high-level mental skills from leaders and soldiers at every echelon. It is these mental skills that are most vulnerable to degradation by stress. The enemy seeks to impose stress on U.S. troops, and U.S. Army planners, in turn, accept stress as a calculated risk in the U.S. Army's plan to impose greater stress on the enemy.

Control of stress is the commander's responsibility. Before, during, and after operations, the commander is aided in this responsibility by specialized AMEDD CSC/Mental Health personnel. These personnel work in concert with the NCO chain of support, the chaplains, unit medical personnel, and principal and special staff. Commanders and their other supporting personnel must give priority to their primary missions. Stress control is so important to mission accomplishment that AMEDD mental health personnel have been assigned in every war since World War I with combat stress control as their primary duty.

Evolving doctrine calls for the United States to use technological superiority to win decisively on the digitized battlefield. These weapons systems call for an extremely high level of knowledge, skill, and sustained mental acuity on the part of every soldier. Human error due to stress can lead to devastating failures in "high-tech" systems, such as that seen on the U.S. Navy guided missile cruiser, the *Vincennes*. Combat stress control—the continual monitoring of stress levels and prompt intervention when indicated—takes on increased importance in the "high-tech" environment.

The combination of highly lethal, mobile, and interspersed weapons systems from different branches, services, and allies, with interpretation of enemy doctrine and movements, creates an intrinsic risk of friendly fire casualties. This risk must be calculated and the stress consequences, which extend far beyond the involved units, must be assessed and controlled. The combat stress control system assists this process.

Advanced communications technologies so vital on the battlefield also make modern warfare a very public enterprise. News, video, and private telephone can take the battle to the homefront almost instantaneously, complicating operations security and bringing battlefield stressors into living rooms across the country and around the world. Telephones and media can also bring homefront stressors to the soldier overseas. The interaction between unit leaders and their units' families is vitally important to mission readiness. Active Family Support Groups have been effective in decreasing the historically large percentage of battlefield stress related to issues back home.

The U.S. Army will continue to leverage existing and emerging technological capabilities to enhance support operations across the full range of military operations. Application of technologies to enhance and assure communications is vital to the CSC concept.

SUMMARY AND CONCLUSION

The basic concept in management of neuropsychiatric casualties is increasingly higher, multitiered echelons of care. Mental health personnel and programs must be flexible and mobile. Assessment and triage at clearing stations by trained specialists and professionals is essential. Exercise in peacetime of all elements of the program is important. Communication nets are critical if coordina-

tion is to be effective. Successful capability of the various elements to hold and carry transient casualties needs planning and practice. Developing a personnel program to return soldiers to duty will require staff action at various headquarters. Ability to provide rest and restorative care (sleep space, food, and so forth) in a protected but accessible area must be planned early. Personnel needs above the standard TO&E requirement must be anticipated if sufficient augmentation is to be made possible. Training in basic stress management for neuropsychiatric problems and cross-training in life saving techniques is essential. Education of all health professionals in basic neuropsychiatric concepts is important.

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