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Integrated Medical Support in Joint Operations A Question of Commitment

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WITHOUT QUESTION, THE COMMITMENT of materiel and personnel to saving life and limb in close support of combat troops constitutes a significant contribution to military effectiveness. This is especially true for a military force recruited from the population of a democracy. Although mechanisms dedicated to preserving both the personal dignity and individual integrity of troops do add complexity to the organization of combat support, experienced field commanders have long recognized that sustained military effort is impossible without them. Indeed, logistics, of which medical support is a key element, is integral to sustainability. Experience teaches that these "support" considerations ultimately determine the order of battle, as well as the success of any military strategy.

In 1984 a distinguished U.S. Navy medical officer, then—Rear Admiral James A. Zimble, cautioned:

A well prepared, ready and able military medical system conveys four powerful messages. It tells the American people that its leaders have prepared means to care for their sons and daughters who may be sent in harm's way; it tells our adversaries that we have a credible, sustainable fighting force; it tells our military commanders that we will sustain their forces; it tells our troops that we care. The last is most vital: in the absence of medical readiness we can have no assurance that our troops, the flesh-and-blood elements of our weapons systems, will retain the will to fight, which is the crucial factor in the equation for victory.¹

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The primary responsibility of the resource known as "military medicine" is to provide for a healthy fighting force supported by a combat-ready health care system. This is defined as its "wartime," or *readiness*, mission. A secondary purpose is to provide a cost-effective and high-quality health benefit to active duty service members, retirees, survivors, and their families. It is often referred to as the "peacetime" mission, although such services do not cease when there is a war or contingency operation. Together, the medical readiness and health benefit missions provide services to over 9 million beneficiaries through a multibillion-dollar health care system. That system consists of a worldwide network of 168 hospitals, over five hundred medical and dental clinics, and an indemnity health insurance program.

In 1993, in the long wake of the 1984 "Zimble Report" (quoted from above), the Department of Defense (DoD) Inspector General declared that while DoD had dealt aggressively with many peacetime health care issues, its medical readiness responsibilities had received significantly less attention. As an example, the Inspector General, or IG, outlined a history of persistent problems with medical mobilization procedures. "These problems touched all aspects of medical operations, from requirements determination to training and logistics support. . . . We also found problems with the availability and capability of facilities, communications equipment, and medical supplies for forward deployed medical units."² The IG added that "in the absence of a current plan, the Services individually pursue medical planning without the benefit of the integrated approach that a DoD strategic plan would afford. These individual efforts have produced variances in the implementation of critical medical programs."³

A Historical Perspective

In the absence of a smoothly functioning medical support system, American battlefield medical care has not always been satisfactory. During World War II, for example, in the Southwest Pacific Area (SWPA), even as late as the invasion of Luzon, the combat zone was less structured, transportation networks were poorer, and medical echelons were less closely integrated than in other theaters. In consequence, long litter-hauls of the wounded were more frequent. The small portable surgical hospitals doing the bulk of the forward surgery were even cut off at times, unable to evacuate seriously injured patients who required more advanced care. Whether operating alone or attached to a clearing station, the portable surgical hospitals in the SWPA were much weaker than similar forward units in the Mediterranean and European theaters. As a result of such inefficiencies, the proportion of U.S. casualties dying within medical facilities was much higher in the SWPA than in Europe.⁴

More recently, the U.S. Marine compound at the Beirut International Airport was bombed on 23 October 1983.⁵ The tragedy presented an opportunity to evaluate in detail the U.S. military medical system's ability to react to such incidents or, by extension, a larger conflict. Among the principal components tested that day were medical command and control, casualty evacuation, medical regulating procedures, capabilities of facilities, joint medical readiness mechanisms, and the transition from routine peacetime to contingency operations.

The Medical Review Group chaired by Rear Admiral Zimble evaluated the medical response to the bombing.⁶ Its report detailed serious deficiencies in medical readiness, attributing them in large part to a lack of medical evacuation resources, shortages of equipment, and insufficient personnel, as well as inadequate joint planning for wartime or contingency requirements. The shortfalls were also the result of the low priority habitually assigned to medical readiness in the planning, programming, and budgeting process. As it noted, "Had the ratio of killed-outright-to-wounded been reversed, so that over 200 casualties had required treatment, rather than fewer than 100, the medical system might well have failed."⁷ The report strongly recommended greater investment in essential medical readiness resources and refinement of command and control over wartime support and operation of these resources.

In response to the Zimble Report, a broad reassessment of worldwide U.S. contingency medical capabilities was undertaken; basic principles for joint medical support of combat operations subsequently evolved.⁸ Less than a decade after the tragedy at the Beirut airport, the Persian Gulf conflict provided yet another opportunity to gauge progress in achieving these goals. How did the Navy contribute to this effort and integrate itself into the joint medical support process?

The Deployment to the Gulf

On 2 August 1990 Iraqi armed forces invaded and occupied Kuwait. At the request of the government of Saudi Arabia, the U.S. deployed forces to aid in the defense of that kingdom. The Commander in Chief, U.S. Central Command, directed each U.S. military service to provide specific medical support units for Operation Desert Shield and the subsequent Desert Storm. By most accounts, these units were able to provide adequate care during this campaign. In the eyes of General Accounting Office (GAO) analysts, however, had the period of intense fighting started earlier or lasted longer, or had the predicted number of coalition casualties occurred, the services' combined medical capabilities would have been grossly inadequate.⁹

Naval medical units included two hospital ships, three combat-zone fleet hospitals, three Marine medical battalions, and seven major casualty receiving and treatment facilities aboard combatant ships. Ultimately the Navy deployed almost twelve thousand medical personnel. Although all the medical units requested by the theater commander were provided, the number of anticipated casualties was about twice what these units were designed to handle. For example, hospital ships were rated as capable of receiving up to one hundred casualties per day over an extended period; however, they were advised to expect between two and three hundred. Similarly, combat-zone fleet hospitals designed for eighty casualties per day were expected to receive up to two hundred. Had such worst-case predictions been realized, there would have been insufficient personnel in Navy medical units to deal with so many casualties, even though the units were staffed to their authorized levels.¹⁰

Furthermore, prior to the start of the ground war, the theater commander informed hospital ships and fleet hospitals to expect that as many as 15 percent of casualties could be contaminated, by either radioactivity or by chemical or biological agents. Not all the units were designed or staffed to handle large numbers of contaminated casualties; the fleet hospitals did not even contain decontamination stations.¹¹

Within fleet hospitals, noncombat needs—a continuous flow of sick-call patients during Operation Desert Shield—placed an unexpectedly large demand on medical services as well as on general sick-call logistics. (Females, for example, constituted about 6 percent of the naval forces deployed to Southwest Asia, yet only one Navy gynecologist was assigned to the deployed hospitals, and neither space nor examination tables were allocated in the fleet hospitals for gynecologic examination.)¹² Medical units had too few sick-call supplies and too little equipment to meet routine requirements. Because of such shortages, some patients required evacuation to distant facilities, often for significant periods of time.

Navy Training Shortfalls. It has repeatedly been shown that periodic realistic field training with wartime equipment is critical for preparing medical personnel to fulfill their mission in a no-warning situation. Unfortunately, the DoD IG judged, the Navy had not consistently provided adequate field training for its medical personnel prior to Desert Shield–Desert Storm.¹³ For example, the IG found that poor oversight of even mandatory basic military training for officers caused deployments to be delayed until those requirements were met. Also, the GAO recounted that many medical personnel in the Gulf conflict had received little training in fulfilling their missions or coping with their new environment; in fact, individuals in deploying medical units—particularly junior officers and enlisted personnel—were frequently unaware of their wartime assignments.¹⁴

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Reports suggest that many Navy medical personnel in Desert Shield and Storm not only lacked basic military skills but were ill prepared to serve in the fleet hospitals, hospital ships, and Fleet Marine Force hospital facilities. The hospital ships *Mercy* (T-AH 19) and *Comfort* (T-AH 20), for example, cited training deficiencies in such shipboard skills as firefighting, damage control, mass casualty evacuation, abandon-ship procedures, and chemical, biological, and radiological defense. Prior to deployment less than half of the personnel assigned to these ships had qualified in these areas; indeed, more than 75 percent had no prior shipboard experience. Similarly, less than 20 percent of active duty personnel deploying with the first fleet hospital had received training in constructing and operating such a facility, much less in practicing medicine under field conditions.¹⁵

Unlike the hospital ships, which contained state-of-the-art medical equipment, fleet hospitals were equipped with technology from the 1970s and early 1980s, equipment with which few of the personnel were familiar by recent use or training. This contributed to both a lack of confidence in the quality of equipment and supplies available and a pervasive belief that, by present standards, less than adequate care would have been provided had casualties been as numerous as projected.

Another operational deficiency involved a lack of training and experience in treating trauma patients.¹⁶ Many personnel had never done so, or not for a considerable period of time. A majority had not even completed the most basic training in combat casualty care. In addition, very few fleet hospital and hospital ship personnel had been trained in either patient decontamination or the treatment of chemically contaminated casualties. The Navy estimated that less than 10 percent of its physicians deploying to the theater were trained for such casualties.¹⁷

Only because of the prolonged buildup of forces were fleet hospital personnel able to familiarize themselves with their equipment and all Navy medical personnel to achieve an acceptable level of medical and operational training.¹⁸ In the aftermath of the war, the DoD IG recalled that "the First Marine Expeditionary Force Surgeon expressed concern over the training of Navy medical forces that were deployed to the Fleet Marine Force (FMF). The surgeon said that the Navy corpsmen, doctors, and nurses who augmented the FMF did not have the operational training required to be immediately effective. As he stated, "Thank goodness we had five to six weeks to get everyone trained prior to the war's beginning."¹⁹ Indeed, not all corpsmen, physicians, and nurses who augmented the FMF had ever received the Marines' Field Medical Service School instruction. Some corpsmen certified as Field Medical Technicians had never served with units of the FMF;²⁰ their familiarity with current Marine Corps operations was therefore limited. A Navy physician temporarily assigned to a

Marine tank battalion indicated that his battalion aid station (BAS) personnel had minimal experience in transporting, assembling, and disassembling the full BAS in the field; the station, as a facility, had not been deployed, moved, assembled, or disassembled with the battalion during training exercises. Consequently, the first assembly took a day and a half, whereas the operational requirement was for assembly in no longer than an hour and disassembly in no more than two. This physician concluded, "The most valuable lesson that I learned during Operations Desert Shield/Storm/Cease Fire is that we must be willing to train during times of peace as we will operate during times of conflict."²¹

Navy Logistic Shortfalls. The Navy's control of medical equipment and supplies prior to and during the Gulf conflict was less than adequate. Units reported that the equipment issued to them required tedious out-of-cycle calibration and that some items had not been kept in their required state of readiness. For example, over half of one unit's forty medical ventilators for assisted breathing did not work when they arrived in the theater. There were also unanticipated compatibility problems: for instance, cartridges that did not fit the surgical guns they were issued with, and film not compatible with the x-ray machines (necessitating stronger dosages of radiation).²²

Many units of all services reported discrepancies between the recorded and actual inventories of equipment and supplies issued to them. Material for fleet hospitals had often not been packed according to manifests, making field assembly of those facilities even more time-consuming than ordinarily; items for different functional areas were found packed together, whereas in one instance materiel that was supposed to be collected in one or two containers was dispersed among thirty.²³ Short-shelf-life items such as sterile supplies, intravenous fluids, and pharmaceuticals had either expired or were in short supply both when they arrived and also, unfortunately, when they were needed for use.

Finally, many physicians, particularly those assigned to the fleet hospitals, believed that some of the supplies and equipment was of poor quality and did not incorporate contemporary technological advances. As a result, several physicians bypassed the official supply system and personally asked medical facilities and private practices in the United States to send specific items directly to them.²⁴

Joint Contingency Communications. Communication problems in all services during Desert Shield and Storm degraded the casualty-receiving mission. These were primarily related to limitations and mismatched capabilities on both the intra- and interservice levels. Some medical facilities could not communicate with their control elements, with one another, with supported combat units, or with supporting logistical units.

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Communications between medical units and between the different levels of care (e.g., between aeromedical evacuation units and field hospitals) were made difficult by the prevailing variety of radio equipment and the use of both commercial and tactical telephone systems. Without adequate communication capability, some Army and Air Force facilities frequently had no forewarning of the quantity or type of casualties they were to receive. Some field hospitals did not know that casualties were on the way until the aeromedical evacuation helicopter actually arrived. Obviously, for them, planning for immediate patient care needs was out of the question.

During the movement into Iraq, some Army field hospitals were left for several days with no method of communicating with either combat or evacuation units. The chief nurse of the Army 12th Evacuation Hospital found its communications nonexistent in Saudi Arabia—the equipment was too diverse and too limited in capability. Helicopters had FM radios, with a range of only twenty miles; the field hospitals had AM radios, which in any case could not be used near a battlefield since their signals were traceable by the enemy. Furthermore, though combat and command units had satellite equipment, these did not enable them to be in direct communication with the medical units. Also, due to either traffic saturation or inherent equipment limitations, none of the systems at aeromedical evacuation locations proved consistently reliable.

Communications problems for combat and support units, however, are not new. They were identified during the URGENT FURY invasion of Grenada in 1983, during the 1990 JUST CAUSE contingency in Panama, and during such Joint Staff exercises as PROUD EAGLE (worldwide), REFORGER (Europe) and TEAM SPIRIT (Korea). The Defense Department and the military services have made attempts to field interoperable and reliable equipment for combat commands, but no comparable effort has been made in support of medical units.²⁵ Accordingly, when Desert Shield began in August 1990, adequate medical communication equipment was still not available. The military services had not at first identified the need, and, when the requirements were ultimately acknowledged, had not applied the necessary resources. The problems encountered in Southwest Asia will no doubt continue to resurface until DoD and the services make a commitment to include medical units in a joint, interoperable communication system.²⁶

Communications and Casualty Regulation. A well planned and promptly executed patient evacuation process is a key factor in saving the lives of those injured on the battlefield, and an important ingredient of patient evacuation is the medical regulation of casualties. "Medical regulators" manage the process by selecting sources of care; they match patients' medical requirements with the reported capabilities of treatment facilities. They must also assure that the

hospitals are not over or under-utilized; when numerous and dispersed facilities are involved, this is essential.

During Desert Shield and Storm, unfortunately, regulating systems did not provide effective oversight, and communications problems were the greatest limitation. Troops on the battlefield could not communicate with ambulances. The radios used by medical regulators had an operating range of only fifteen miles. The expanse of their areas of responsibility precluded effective use of such distance-limited communications; for example, the Army XVIII Corps area was 250 miles deep and a hundred wide. Their ambulance units operated with similar equipment and therefore experienced great difficulty in working efficiently with regulators or hospitals. As a result they often took patients only to hospitals whose locations they knew, but those hospitals were not always the ones best able to assist the wounded. Air ambulances also had difficulty learning where casualties awaited. One helicopter company, in the words of the GAO, "had listened to the international disaster channel to find out where casualties were. . . . After patients were loaded, pilots flew directly to known hospital locations over Iraqi tanks and infantry. One pilot stated that if it had been a 'shooting war,' the company would have lost every Huey [helicopter] and its crew."²⁷

To overcome these shortcomings of communications equipment, VII and XVIII Corps restricted air ambulances to shuttle runs between designated collection points near the battlefield and drop-off points adjacent to hospitals. As a Navy medical officer with a Marine Corps tank battalion described his situation, "The locations of higher echelon field medical facilities were *not even available* at the battalion or division level."²⁸

A "lessons learned" report by the Air Force's Air Mobility Command stated that as a result of communications problems, 43 percent of patients arrived at the wrong airfield and had to be rerouted to the appropriate medical facility.²⁹ The inability of medical regulators to manage the evacuation of patients could have led, had the projected numbers of casualties actually occurred, to the under-use of some hospitals and the overwhelming of others—a potentially tragic situation.

Automated medical regulating systems existed; unfortunately, they were not standardized, interoperable, or available in all theaters, and they could not track the location and status of individual patients. Each service had its own computer systems, and their incompatibility severely limited the medical services' ability to interoperate during the war.

The Reliability of Medical Evacuation. The process of medical evacuation entails moving patients under medical supervision both to and between medical treatment facilities. The Army and Marine Corps provide most of the ground and helicopter lift for tactical medical evacuation. (The Navy lacks such assets,

and the primary Air Force medical mission is to provide fixed-wing aeromedical evacuation within and between theaters.)

During the Gulf War, Lieutenant General Walter E. Boomer, commanding general of First Marine Expeditionary Force, noted the inadequacy of the medical evacuation system supporting his troops. "It was a relic of World War II. . . . The concept of an orderly sequence is nonsense. . . . It hasn't kept up with the times!"³⁰ However, evidence of disregard for practice in medical evacuation had been noted as long ago as the TEAMWORK exercise of 1984, a Navy-Marine Corps overseas training evolution, conducted under arctic conditions in Norway, that included casualty evacuation and medical distribution. Navy Surgical Team 12 stated in its after-action report that "simulated casualties waited an average of 6½ hours before we received them"—too long to ensure the survival and stability of critically injured personnel in a combat setting.³¹ Interestingly, actual casualties in the exercise (i.e., accident victims) arrived in only an hour to an hour and a half; the difference suggested that simulated casualties could have been transported in a more expeditious manner had there been interest in a realistic assessment of "medevac" capabilities.

In the Gulf conflict, as General Boomer implied, problems arose in the effective use of both ground ambulances and helicopters in tactical evacuation of patients. Ground ambulances could not be used as often as planned because of the rugged terrain, lack of navigational equipment, and the long distances. Even air evacuation was taxed by the distances from pickup points to the hospitals; frequent refueling was required, and crews had trouble locating fuel sites. Some air ambulances landed near tanker trucks, tanks, and Bradley Fighting Vehicles to ask for fuel or for directions to the nearest supply. Paradoxically, increased production of Global Positioning System (GPS) receivers allowed almost every other type of weapon, platform, and vehicle access to GPS data. As noted by one author, "The GPS receiver was the most popular new piece of equipment in the desert."³² Nevertheless, delivery to medical evacuation units was delayed, sporadic, and often incomplete.³³

For its part, lacking its own assets, the Navy ordinarily relies for tactical medical evacuation upon returning (i.e., "retrograde") combat support aircraft whose primary missions are other than medical. They serve as "transportation of opportunity" for moving casualties to hospital ships and fleet hospitals. Obviously, because of other priority commitments, such aircraft are not always available in sufficient numbers for urgent medical evacuation requirements. In the Gulf conflict, short-range helicopters were available for medical evacuations, but, as Army and Marine Corps officers acknowledged, too few—at least in part, as asserted by the DoD IG, because Navy aeromedical requirements had not been previously made known, and the Army and Marine Corps had accordingly not programmed to support them. As noted by the Navy Surgeon General,

"Lack of dedicated tactical aeromedical evacuation capability in naval services would have created difficulties had the theater (Southwest Asia) matured as expected."³⁴

Because of the design of hospital ships, casualty evacuation to them by surface craft is not a reliable option. In rough seas, direct ship-to-ship highline patient transfers are equally unsafe. Ultimately, all patients brought to hospital ships not in port must be transported by helicopter. Unfortunately, in the Kuwait theater helicopter transport to hospital ships was problematic: the helicopters' carrying capacities were limited, and the ships possessed only one landing pad and had to stay on station far from harm's way. As a result, had there been large numbers of casualties to transport from the battle area, distance, helicopter shortages, and travel time would have caused even worse problems than was actually the case. Because of these circumstances, even if combat operations had continued longer the hospital ships might never have been fully used to treat mass casualties.

Any fewer or less capable Air Force aeromedical evacuation assets would have affected patient care as well. The commanding officer of the Air Force theater aeromedical evacuation squadron stated that insufficient aircraft were allocated to evacuate patients and that the predicted flow of casualties would have overwhelmed them. Further, even given sufficient aircraft, there were shortages of crews and in-flight evacuation equipment. The Air Force Surgeon General noted that "we were fortunate that the medical evacuation system was not taxed." If it had been, substantial shortfalls in strategic and tactical aeromedical evacuation would have materialized.³⁵

Nobody should be surprised—deficiencies in aeromedical evacuation assets are nothing new. They were noted in several Joint Staff-sponsored exercises, including REFORGER in 1987 and WINTEX in both 1988 and 1989. During the latter, in Europe, the lack of dedicated aeromedical evacuation assets paralyzed the entire combat zone until three thousand casualties could be removed.³⁶

The Air Force, specifically aware before the Iraqi invasion that it did not possess sufficient personnel or equipment to manage patients needing individualized care during evacuation flights out of Southwest Asia, required that any hospital unit evacuating a patient needing constant attention was to provide an in-flight medical attendant and enough specialized equipment, such as respirators or cardiac monitors, to last five days. Two Navy fleet hospitals were further to provide for additional care at staging sites. These requirements were not taken into account in fleet hospital and hospital ship manpower and equipment authorizations. Had casualty rates approached predicted levels, the inventory of ventilators, intravenous fluids, medications, blankets, litters, and a host of other items would have been rapidly exhausted by these evacuation needs.³⁷

A Call to Action

During contingencies, smoothly running casualty support operations are critical; a lack of joint planning obviously hampers the sharing of limited resources and creates confusion over responsibilities. In 1984, for example, as the Zimble Report noted, there was no comprehensive joint plan for the use of those military medical assets already in place. The services' contingency medical plans were described as "stovepipe documents"—that is, their orientations were purely "vertical," i.e., intraservice—and they bore little relationship to each other. This was a direct result of the tendency of the services' medical components to support their own line units as if they were the only ones, and also of a lack of a joint medical staff structure to arbitrate differences. There was no mechanism for achieving efficiency through interservice sharing in peacetime, for coordinating operations in wartime, or for resolving inconsistencies among the components' plans.

Unfortunately, as of mid-1993 the DoD Inspector General was still finding that medical mobilization plans did not properly reflect DoD planning scenarios, force structure, or medical support policies. The plans were out of date, lacked a substantial joint perspective, and were largely untested. The assumptions on which they had been based had not been updated with respect to recent worldwide political and military changes. Likewise, medical personnel requirements did not reflect the lessons of Desert Shield and Storm as to operational doctrine and, especially, the continuation of the peacetime health-care mission during contingencies. The IG predicted that future problems would surely arise if the Joint Staff and the unified commands did not ensure that components could realistically fulfill medical support requirements. Insufficient oversight, the IG suggested, had led to inaccurate data, incomplete readiness information, and unrealistic plans (many of them predating the collapse of the Soviet Union).³⁸

The IG further noted in 1993 that operation plans of the unified commanders in chief still, for the most part, did not promote the efficient use or sharing of medical assets. The Central, European, and Pacific commands did not propose to integrate medical support at all, instead assigning each service component to provide care for its own forces only. Central and European Command operation plans, for example, even required the services to accomplish their own patient evacuation.³⁹

Why have such inconsistencies with joint medical operations persisted, and why have the Navy and Marine Corps so conspicuously contributed to them? The primary reason is that there has been insufficient testing of medical systems in joint exercises, aggravated on the service level by inadequate oversight of

mobilization for contingency hospitals and medical treatment facilities, and of the individual operational responsibilities of personnel.

All too frequently, peacetime training concentrates upon combat tactics to the exclusion of all else. TANDEM THRUST, a joint exercise carried out during the summer of 1992 off the coast of California, is an example; it ignored the reality that casualties occur. The scenario of its large-scale amphibious evolution, in particular, never challenged Navy and Marine commanders to contend with the formidable losses of personnel to combat injury typical of this type of operation. As a result, a highly unrealistic dimension was injected into their command and control training. An additional consequence was that embarked medical organizations did not receive a challenging operational experience. They were never obliged to rise above routine fleet medical support and address their contingency role for amphibious warfare operations.⁴⁰

Joint Staff-sponsored exercises commonly provide combat arms with realistic training and evaluation. According to the IG, however, these same exercises generally include only token medical participation and do not effectively test or assess medical readiness. Although medical units have periodic opportunities to improve skills through internal training, large-scale interservice medical exercises are exceedingly rare. Operational commanders, consequently, are left with no independent proof of the capability and readiness of their medical units or knowledge of the related risks associated with operation plans. They have, therefore, little foundation for making the appropriate tradeoffs when actual operational demands arise.⁴¹ Both up-to-date joint medical planning and utilization of triservice medical assets in contingencies require continual practice.

At the service level, professional medical personnel must comply with already established basic and field training standards. Scheduling operational training for health care personnel has been left to medical treatment facility commanders, who, because of the competing demands of their peacetime mission, do not always feel that they are in a position to fill such requirements. These commanders are responsible for the care of their own patients as well as the readiness of their professional staff. Since hospitals have traditionally received resources (personnel, dollars, equipment) based on annual output or productivity (measured in "medical care credit units"), their commanders have had a substantial incentive to hold their medical staffs "at home," thus keeping their medical care credit units high and payments for "out-sourced" care low.

The historical record is clear. To save lives during contingencies, the services must ensure not only more individual and unit operational medical training but greater and more realistic medical participation in joint exercises. The latter must include interservice medical participation, interaction with both combat and support units, communication with supported and supporting echelons, and

sufficient numbers of (simulated) patients to evaluate care and movement concepts.

The issues extend beyond dollars and programmatic shortcomings. The problem is one of attitude, of the commitment of leadership to joint medical readiness. During World War II it took the Navy and Marine Corps years to confirm and refine their prewar doctrine for amphibious attack. The labor began with the first U.S. landings at Guadalcanal, in August 1942; the resulting doctrine, organization, tactics, and techniques were used by the Army in Europe. Early operations in both theaters highlighted the enormous difficulties associated with the essential medical elements, and it was not until late 1944, perhaps 1945, that these problems were adequately solved. Will there be in future conflicts as long a wait for a functional joint medical support system? Indeed, without a truly energetic and multiservice approach to the medical dimension of conflict—future *and* present—the lessons of the past will continue to plague us.

Notes

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3. DoD IG Report 93-INS-12, p. 21.
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12. *Ibid.*, p. 4.
13. U.S. Dept. of Defense Inspector General, "Medical Mobilization Planning and Execution," Report 93-INS-13 [hereafter DoD IG Report 93-INS-13] (Washington: 1993), p. 70.
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15. *Ibid.*, p. 7.
16. Erwin P. Hirsch, "Were Naval Medical Forces Prepared?" U.S. Naval Institute *Proceedings*, July 1992, pp. 93–5; and Donald Trunkey, "Lessons Learned," *Archives of Surgery*, March 1993, pp. 261–4.
17. GAO/NSIAD-93-189, p. 5.
18. *Ibid.*
19. DoD IG Report 93-INS-13, p. 71.

20. *Ibid.*
21. R.J. Burke (Lt. Cdr., MC, USN), "Medical Support for a U.S. Marine Corps Armored Battalion: Problems Encountered during Operation Desert Shield/Storm/Cease Fire and Some of Their Solutions," presented at the Seventh Conference on Military Medicine, "The Spectrum of Medical Support to Operation Desert Shield/Storm," Uniformed Services University of the Health Sciences, 13-5 April 1992.
22. GAO/NSIAD-93-189, p. 8.
23. *Ibid.*
24. *Ibid.*
25. DoD IG Report 93-INS-13, p. 119.
26. *Ibid.*, pp. 119-26; and GAO, "Full Army Capability," GAO/NSIAD-92-175, pp. 46-7.
27. GAO/NSIAD-92-175, p. 47.
28. Burke. (Emphasis supplied.)
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36. *Ibid.*, p. 148.
37. GAO/NSIAD-93-189, p. 4; and GAO/NSIAD-94-58, p. 5.
38. DoD IG Report 93-INS-13, p. 5.
39. *Ibid.*
40. Observations of the author while serving as Assistant Task Force Surgeon for the Commander Amphibious Task Force (CATF) during TANDEM THRUST 92.
41. DoD IG Report 93-INS-13, pp. 11-4; GAO, "Joint Military Operations: DOD's Renewed Emphasis on Interoperability Is Important But Not Adequate," Publication GAO/NSIAD-94-47 (Washington: 1994); GAO, "Operation Desert Storm: War Offers Important Insights into Army and Marine Corps Training Needs," Publication GAO/NSIAD-92-240 (Washington: 1992); and GAO, "Operation Desert Storm: Army Had Difficulty Providing Adequate Active and Reserve Support Forces," Publication GAO/NSIAD-92-67 (Washington: 1992).

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We were lavish of blood in those days, and it was thought to be a great thing to charge a battery of artillery or an earth-work lined with infantry.

Major General D. H. Hill, Confederate States Army,
recalling the Peninsula campaign of the American Civil
War, 1862.