
The Role of Emergency Medicine in the Military

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Abstract

The art and science of fighting a successful war, advancing the defense and interests of our countries, depends to a large degree not only on our arms and soldiers but the support services that maintain the fighting strength. The Medical Corps is an integral component of the armed forces. The casualty rate in each successive war of the late 20th and early 21st century has dropped precipitously. Though part of this is due to the dispersal of soldier density despite the increasing lethality of the weaponry, the other contributor has been the resuscitative skills and medical/surgical interventions of Medical Corps. The Vietnam conflict contributed immensely to the science of resuscitation and resulted in advancement of prehospital, emergency and surgical care. However, in the past two decades the flow of information and techniques has reversed with the military having started to borrow more techniques from the civilian branches of medicine in order to reduce casualty rates. Not coincidentally, emergency medicine (EM) emerged as a specialty over the same period. The US military establishment has come to view the board-certified emergency physician as an extremely valuable asset. The recent National Report Card on the State of Emergency Medicine, published by the American College of Emergency Physicians, stated that EM physicians are deployed at one of the highest rates of all medical specialties [1]. The value to the military is also illustrated by the pay scale of board-certified EM specialties, which is far greater than the non-surgical specialties and on par with many of the surgical ones. The US Army has three EM residency programs, and the US Navy has two [2]. Despite five residency programs and the infrastructure to support them, the board certified EM specialist, in this author's opinion, still does not have a defined doctrinal role in the Medical Corps structure. A description of the doctrinal organization of US Army Medical Support and the present role of the board-certified EM specialist will follow. The Marine, Naval and Air force Medical Organization will not be described as they numerically play a smaller role. This paper will then conclude with a vision of the EM specialist that could be more optimally utilized by the military establishment.

MeSH Words: Emergency Medicine, Military Medicine, ATLS in Military, Military Casualty Care

The US Army medical support organization, in simplistic terms, is echelon-based. Echelon I is the "battle buddy" and field medics who are trained in the simplest of first aid. Echelon II is designed to be very close to the front lines and composed of Battalion Aid Stations, Forward

Surgical Teams (FST) and Medical Holding Units for minor and non-lethal, non-battle injuries. Echelon II services tend to have little or no ancillary services such as laboratory or X-ray equipment and only the simplest of resuscitation equipment. A notable exception is the FST,

which is capable of some blood banking and has an ability to support one or two ventilated patients while awaiting their evacuation. Echelon III is comprised of Combat Support Hospitals (CSH) with most of the ancillary services and subspecialty availability. Finally echelon IV is made up of European-based or Continental US military facilities capable of tertiary and rehabilitative care. At present, there are slots for EM specialists in the Echelon III and IV facilities. However, the realities and needs of the present conflicts have resulted in a very different utilization pattern of the EM specialists. An EM specialist on the roster of a Battalion or Brigade provides advantages for the commander and the unit. The EM specialist is highly trained in taking care of just about any illness, yet there is not yet a universal understanding of the full spectrum of care that he or she is capable of. As a result many of the EM specialists have been “cross-leveled” – put in slots other than the emergency departments of level III and IV centers. The EM specialist is the Jack-of-All-Trades, and has supplanted the General Medical Officer. They may be often manning primary care clinics and performing “sick call” – seeing the walking well and the very occasional truly ill patient. In the mean time a family physician or general internist may be manning the emergency department in one of the Combat Support Hospitals in hot spots such as Baghdad. In a recent After Action Report (AAR) submitted by an FST commander returning from the Iraq war theatre, the under-utilization of EM specialist resuscitative skills and the poor airway management in level II facilities was criticized. This commander further went on to lament that EM specialists were being utilized too often in command positions with no clinical responsibilities. This most likely reflects the fact that leadership qualities are part of EM specialist training as a result of their having to dictate the activities of teams in their civilian practice. It seems likely, from this pattern of utilization, that the US Army though valuing their EM specialists is not taking full advantage of their capabilities.

The US Army Medical Command still takes its cues from the surgical specialties. The approach to medical support, especially in war, is a surgical one. As a result, concepts such as the FST have been born. The FST by doctrine is a small unit consisting of a small emergency department, an operating room and recovery unit

(ICU) manned by three general and one orthopedic surgeon, a nurse anesthetist and highly trained non commissioned officer technical support staff that is within two miles of the forward battle edge. In the present Iraq and Afghani conflict, the FST is not highly utilized. There is no battle edge, as the conflict is low intensity guerilla warfare that surrounds the facility, much more akin to the US inner city social landscape that civilian US EM specialists tend to be all too familiar with in the urban hospitals. In the recent AAR mentioned above, there were very few surgical cases done by the FST and the critically injured soldiers were often airlifted to the combat support hospital, bypassing the FST. In both the Iraq and Afghani conflicts, the FST was often utilized by both the Military and surrounding under serviced civilian populace for non-surgical care. The casualty figures from the wars of the 20th century in fact suggest that a very large proportion of injury, illness and death were non-battle illness [3]. Figures from the 1990-91 Gulf War showed that only 20% of the casualties were due to enemy action [3]. Furthermore, despite the dogma of trauma being a ‘surgical disease,’ the American College of Surgeons (ACS), in the very popular Advanced Trauma Life Support Course (ATLS), report that in only 10% of blunt and only 30% of penetrating trauma are injuries that require surgical intervention [4]. Despite these facts, a great deal of money, training and logistics are geared towards a surgical solution of a largely non-surgical problem.

It remains a common misconception that ATLS – or more elaborate and intense military courses that still only take up less than 7 days – adequately prepares the civilian and military non-EM specialist for critically ill trauma patient competent care [5,6]. Most US EM specialists have a minimum of three (more often 4-5) years of training in and the daily practice of the full spectrum of emergency care across both as to diagnosis (‘surgical’ and ‘medical’) and as regards severity of illness (minor to life saving resuscitation). It has been shown that that within only two years, the cognitive and many of the motor skills taught in ATLS degrade to under the acceptable standard [7]. As many of the participants of these courses do not practice resuscitation on a regular basis this is not at all surprising. This should not be misconstrued as a suggestion to do away with these courses, as something is better than nothing, but it is a

warning that ATLS and even the longer, more intense Combat Life Support courses have limitations. The EM specialist may be the only one of all specialties that is not only intensely trained in resuscitative skills over several years, but is able to more readily distinguish surgical from medical illness and initially treat both in a competent fashion. They are therefore natural team leaders of any resuscitative efforts be they traumatic or medical

The state of EM in the Israel Defense Forces (IDF) – as in the rest of Israeli medicine – is not clearly defined. The IDF relies heavily on regular army physicians who enter the army after medical school and a one year rotating internship for much of its primary and combat care in the regular army units. When mobilized for training or combat, reserve units are assigned a physician in the reserves who has undergone a medical officer course, but may be of any specialty. In peacetime the IDF relies heavily on the civilian medical infrastructure for specialist care. In war time, specialized surgical units may be mobilized. There is no defined role for the EM specialist as such. Due to the relative dearth of specialty-trained emergency physicians in Israeli medicine in general, there is no large pool from which the IDF can draw, and no dependable pool from which to fill a pre-defined niche. Nonetheless the IDF has made use of emergency physicians as instructors for medical teams, as unit doctors, and in evacuation units. The situation parallels that of Israeli civilian life, in that while the specialty of emergency medicine is recognized as a distinct and necessary function, there is only sporadic coverage of EDs by specialty-trained emergency physicians.

Emergency medicine would seem to offer much to military medicine in both peacetime and war. The routine chief complaints of the regular army soldier are well within the scope of those seen in any emergency department, and the same judgment in terms of referral can be brought to bear. In wartime, the multi-potential emergency physician has qualifications and experience from the practice of civilian EM that are quickly transferable to caring for the sick and wounded in an armed conflict.

In recent years, Israeli military doctrine has made many innovative changes, especially as regards trauma care. A defined role for paramedics has emerged and the army sponsors a

paramedic course, helping to insure a steady supply of personnel into the defined niche. We believe the IDF would be well served to sponsor – as does the US armed forces – specialty training in EM. This would allow the IDF to have a reliable source of physicians to fill an appropriate doctrinal role. It would also offer a possible career path to emergency physicians in Israel, which at present remains a question.

Attention must be directed to articulating the future role of the EM specialist in the US Army and IDF. Clearly, current conflicts tend to be more low intensity urban guerilla warfare, and a large proportion of the illness encountered by the military medical corps is of a non-surgical type. The EM specialist is in a position to most optimally deal with this scenario. Modular units such as the FST should be reconfigured with two EM specialists as well two surgeons making up the physician component. More rudimentary ancillary services should be added to these units such as bedside CBC, chemistry and blood gas testing. Portable radiology with digital technology should also be part of the units' standard material. These units may be used at the echelon II level interspersed at the Battalion level. Until this type of unit is established, pains should be taken to properly utilize the EM specialist in the US army, placing them in emergency departments of level III centers.

In the prevailing military scenarios in the middle east, and especially in Israel – where evacuation times to definitive care are often relatively short – the stabilization skills of the emergency physician and ability to prepare a patient for safe transport should be viewed as an invaluable resource. The vast knowledge base that EM specialists must master in order to practice competently should be utilized for training of non-commissioned officers who act as medics at level I and II echelons, as well as formally trained paramedics and physicians from other specialties. The EM specialist is an underutilized asset that could be more optimally placed to further diminish the mortality rate in present day conflicts.

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