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TACTICAL COMBAT CASUALTY CARE: TRANSITIONING BATTLEFIELD LESSONS LEARNED TO OTHER AUSTERE ENVIRONMENTS

Prolonged Field Care: Beyond the "Golden Hour"

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Prolonged field care (PFC) has emerged as a recent area of focus for US military Special Operations Forces (SOF) medical experts. Focused on the current reality of providing medical care to military forces often deployed in remote and austere locations far from medical support or a robust casualty evacuation chain, PFC encompasses evolving operational situations not unlike many wilderness medicine practice environments. SOF currently operates in all areas of the world and on a variety of different missions, which finds these small teams far from the accustomed practice environment of robust deployed medical infrastructure commonly seen during the last 15 years of military conflicts. In light of this evolving operational situation, the Prolonged Field Care Working Group has undertaken a comprehensive approach to better define and tackle this challenge. The approach to training and educating SOF medics on PFC is based on defined capabilities and operational situations that incorporate best medical practices and seeks to place advance resuscitative capabilities into the hands of providers closest to the point of injury. By transitioning from an approach solely driven by acute trauma aide, incorporating the best practices of Tactical Combat Casualty Care (TCCC), PFC builds upon best practices for the continuing management of both medical and trauma patients in wilderness environments. PFC incorporates best practices in generally hospital-based management of serious and critical casualties to decrease both mortality and morbidity in austere, prehospital operational settings.

Keywords: prolonged field care, austere medicine, Special Operations Medicine, Tactical Combat Casualty Care, prolonged care

Introduction

When most people picture military medicine, they may imagine gunshots and explosions, heavily armored soldiers and vehicles, first aid administered as per the strict Tactical Combat Casualty Care (TCCC) protocols, and rapid movement through a well-established system to forward surgical teams and combat hospitals. This has been the common experience of most military medical providers since shortly after 2001. As a result, military medicine has substantially improved far-forward trauma care and stabilization in this operational setting. In 2008, then Secretary of Defense Robert Gates issued a mandate that all military medical evacuation to a surgeon must occur in less than 60 minutes. This mandate resulted in reduced overall time to surgery and was heralded as a key paradigm shift for a military medical system that directly contributed to the lowest mortality rate of any conflict in history.[1] This operational situation, however, is changing. No longer can we solely focus on the "Golden Hour" of presurgical care; we must look beyond hours to maybe even days.

With the reduction of troops and decrease in true combat missions in defined theaters of operations in places like Iraq and Afghanistan, the US military, Special Operations Forces (SOF) in particular, continuously deploy on expanded missions into many other countries. SOF find themselves in remote and austere locations around the world. Often working in small teams, highly trained medics work without direct oversight and, in many settings, do not enjoy the support of robust, first-world medical infrastructure. Medical

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evacuation to surgical care or definitive medical care in many of these locales is measured in days, not hours. Places such as sub-Saharan Africa, Southeast Asia, former Soviet states in Eastern Europe, and remote areas in South America present challenging environments for the remote medical provider.

In light of these situations and the evolving need to broaden our medical perspective to once again concentrate casualty management on the treatment of serious and critical patients—both trauma and medical—US SOF has been directed to refocus on our more traditional missions. This task necessarily requires an expanded focus with regard to medical training and preparation. In light of these evolving operational realities, prolonged field care has emerged as a focus area in SOF medical training and education.

Discussion

Prolonged field care (PFC is defined as "Field medical care, applied beyond 'doctrinal planning time-lines' by a SOCM [Special Operations Combat Medic]) or higher, in order to decrease patient mortality and morbidity. Utilizes limited resources, and is sustained until the patient arrives at an appropriate level of care." This definition was developed and adopted by a North Atlantic Treaty Organization (NATO) SOF medical expert panel and reflects the prolonged management of serious casualties in a field or austere setting with limited resources. This approach to complex medical problems mirrors wilderness medicine in its scope and application, and, in fact, has direct application to nonmilitary medical practice.

Management of all-causes morbidity and mortality in an austere setting requires advanced training and concepts, with departure from the typical protocol-driven prehospital algorithms. This approach instead relies upon patient assessment and complex medical decision making, combined with advanced surgical and medical treatment options and coupled throughout with sound nursing and reassessment skills. Advanced medics or austere providers must be trained to use skills traditionally thought to be beyond their scope, challenging the sole use of strict protocols of prehospital care. Advanced resuscitation techniques and the combination of emergency medicine and intensive care medicine best practices, shared in published guidelines and through the teachings of experienced providers, must be incorporated into the traditional training of these advanced "prehospital" providers. Classroom lectures, clinical rotations in treatment facilities, and field problems consisting of challenging operational settings should be combined to maximize the educational experience.

There may also be a departure from the NATO doctrinal "Roles" of medical care, in which capabilities are tied to facilities, treatment sites, or clearly defined provider categories. For trauma patients in particular, a paradigm shift to conceptualize treatment in terms of presurgical care is warranted. Presurgical care incorporates all aspects of doctrinal care prior to Role II surgical care, from first aid/nonmedical responder, to combat medic/paramedic, to aid station/Role I levels of care. In many PFC situations, the availability of hospital or surgical care is not practically available during the critical first phases of disease or injury. The operational context incorporates the concept of delayed or prolonged patient evacuation with advanced en-route care, acknowledging that the goal of managing patients is to ultimately deliver them to a robust, fixed medical facility as soon as practical. The reality forces the discussion to focus on best practices to improve survival and reduce morbidity by pushing capability forward, even if that capability has traditionally been "hospital-based." Divorcing capabilities from the traditional practice settings, whether it be the administration of blood and blood products or advanced diagnostic techniques such as point of care ultrasound or rapid laboratory testing, is an essential element in the PFC analytical approach.

The problem of "medical economics"—the supply–demand mismatch of critical medical assets—is another key critical consideration for PFC. There are simply more small military units deployed to more austere locations than ever before. There are too few field surgical teams and remote advanced medical capabilities to adequately support each individual unit or austere location per current military doctrine. In anticipation of ongoing limited war with global terror networks, for example, the US Department of Defense (DoD) faces a unique, unprecedented challenge. How will the DoD medically support numerous small teams operating in remote locations scattered around the globe? Even in a post-Iraq/Afghanistan military medical system well equipped with combat experience and resources, there are clearly not enough surgical or critical care resources to support global operations for such diverse teams and missions. Global evacuation, another lifesaving capability provided traditionally by the US Air Force, is frightfully constrained by landing strips, weather, prolonged flight times, and unreliable political permissions in unstable countries. Even if the plan is to "fly your casualty out" on any aircraft available, the field medical provider must consider adequate preparation and training to provide ongoing resuscitation and care for many hours or days.