A Consideration of Voting Accessibility for Injured OIF/OEF Service Members: Needs Assessment

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Annotated Literature Review Results

Other Injuries & Disabilities

Aiken, L. J., Bibeau, P., Cilento, B., & Lopez, E. (2008). Stateside care of marines and Sailors injured in Iraq at the National Naval Medical Center in Bethesda, Maryland. *Critical Care Nursing Clinics of North America, 20,* 31-40.

> This paper describes the types of injuries that are most frequently seen in marines and sailors serving in Iraq and Afghanistan. Head injuries, TBI, and blast injuries are the most prevalent. Recently wounded warriors who are being treated in intensive care units (ICU)for TBI and other injuries often experience confusion and disorientation. This paper describes several case studies of ICU care at the National Naval Medical Center.

Bellamy, R. F. (2000). Combat trauma overview. In R. Zajtchuk & C. M. Grand (Eds.), *Anesthesia and perioperative care of the combat casualty*, (1-42). Washington, D. C.: Department of the Army.

> It is critical for military anesthesiologists understand the unique challenges that they will face in the field – challenges that are quite different from those present in the civilian domain. This paper provides a broad but thorough historical overview of the types of injuries and methods of treatment that have occurred in recent U.S. military conflicts. Special attention is given to the environments in which injuries occur, the effects of the environment on patient prognosis, and the typical outcomes of various injuries.

Champion, H. R., Bellamy, R. F., Roberts, P., & Leppaniemi, A. (2003). A profile of combat injury. *The Journal of Trauma, 54*, S13-S19.

> The causes and contexts of injuries in civilian and military sectors differ greatly; combat-related injuries bear unique considerations with regard to treatment. These include the following: the high energy of the wounding objects, multiple causes of injury, high frequency of penetrating wounds, the persistence of threat during immediate treatment in tactical settings, the resource-constrained environment, and delayed access to recommended treatments. Recognition of these factors may improve research on medical care in combat settings, and may enable better civilian-military collaboration in research.

Clark, M. E., Bair, M. J., Buckenmaier, C. C., Gironda, R. J., & Walker, R. L. (2007). Pain and combat injuries in soldiers returning from Operations Enduring Freedom and Iraqi Freedom: Implications for research and practice. *Journal of Rehabilitation Research & Development, 44*(2), 179-194.

> The rate of blast-related injuries has been increasing in recent military conflicts. Military personnel suffering from blast injuries typically require significant pain management. Although clinical practices and the management of pain have been progressing, there has been a lack of associated research. Little is known about the long term pain management needs individuals who suffer from blast-related injuries. This paper reviews the current methods for pain management, acute stabilization, transport, surgical treatment, and rehabilitation.

Clark, M. E., Walker, R. L., Gironda, R. J., & Scholten, J. D. (2009). Comparison of pain and emotional symptoms in soldiers with poly-trauma : Unique aspects of blast exposure. *Pain Medicine, 10*(3), 447-455.

A retrospective review of medical records was conducted to determine whether soldiers with blast-related polytrauma presented physical and emotional signs and pain-treatment outcomes that were distinct from those of soldiers who were injured by other means. Soldiers who were injured by blasts showed a wider variety of physical injuries, higher levels of opioid analgesic use, less reduction in pain intensity after treatment, and higher rates of psychiatric disorders than those injured by other means. Blast injury may be associated with a large number of comorbid symptoms that pose greater challenges than other injuries for successful treatment.

DoD Military injury metrics working group white paper (2002).

The Military Injury Metrics Working Group was assigned the task of identifying appropriate and standardized injury metrics for the Department of Defense. This paper documents those metrics, the best sources of information regarding the metrics, and identifies limitations and consequent recommendations for improving the metrics. The group recommends four new metrics and provides suggestions for the collection of data regarding injuries. The metrics can be used to track the progress of injury prevention and treatment programs.

Galarneau, M. R., Hancock, W. C., Konoske, P., Melcer, T., Vickers, R. R., Walker, J., & Zouris, J. M. (2006). The Navy-Marine Corps Combat Trauma Registry. *Military Medicine, 171*, 691-697.

This paper describes the development of the Combat Trauma Registry (CTR) and presents studies and analyses of combat injury patterns and casualty management in the medical evacuation chain in Iraq. The CTR is a database for records of combat injuries that describe the mechanisms of injury, use of personal protective equipment, casualty demographics, levels of care that were provided, and other details associated with injuries.

Holcomb, J. B., Stansbury, L. G., Champion, H. R., Wade, C., & Bellamy, R. F. (2006). Understanding combat casualty care statistics. *Journal of Trauma, 60*, 397-401.

Treatment strategies can rapidly be adjusted in response to hospital records, but the records must be maintained well. The raw data must also be interpreted to form actionable conclusions. This requires clear and consistent terminology. The authors developed a terminology that they hoped would produce the best insight into the effectiveness of clinical care at different stages of treatment. The terminology can be applied the analysis of injury data from the Joint Theater Trauma Registry (JTTR) to determine whether treatment methods are improving.

Lew, H. J., Poole, J. H., Vanderploeg, R. D., Goodrich, G. L., Dekelboum, S., Guillory, S. B., . . . Cifu, D. X. (2007). Program development and defining characteristics of returning military in a VA Polytrauma Network Site. *Journal of Rehabilitation Research & Development, 44*(7), 1027-1034.

> The Polytrauma Network Site (PNS) clinic is a critical component of the Department of Veterans Affairs (VA) Polytrauma System of Care. The PNS serves military personnel who are returning to the U.S. from combat. Injured military personnel in the current conflicts show a high prevalence of post-concussion symptoms, PTDS, cognitive deficits, back pain, headaches, visual and auditory disabilities, and problems with the vestibular system. An anonymous patient feedback survey has been used to critique and improve the clinical process.

Knapik, J. J., Canham-Chervak, M., Hauret, K., Laurin, M. L., Hoedebecke, E., Craig, S., & Montain, S. J. (2002). Seasonal variations in injury rates during US Army Basic Combat Training. *Annals of Occupational Hygiene, 46*(1), 15-23.

> A review of previous literature suggested that injuries sustained during physical activity may be higher in the summer months than in the fall and winter months, perhaps due to the fact that people are more physically active in the summer. To examine this possibility, this study reviewed seasonal differences in injury rates during US Army Basic Combat Training, where physical activity was similar throughout the year. Injury data were obtained from a retrospective review of the medical records. For men, the risk of incurring an injury in the summer was significantly greater than the risk during the fall months. There was a high correlation between maximum daily temperatures and injury rates. Thus, environmental factors may contribute to the higher rate of injuries during the summer.

Masini, B. D., Waterman, S. M., Wenke, J. C., Owens, B. D., Hsu, J. R., & Ficke, J. R. (2009). Resource utilization and disability outcome assessment of combat casualties from Operation Iraqi Freedom and Operation Enduring Freedom. *Journal of Orthopedic Trauma, 23*(4), 261-266.

> This study focused on the costs associated with disabilities resulting from the wars in Iraq and Afghanistan, and also provided a few ideas for obtaining data on injury and disability rates. These sources include the Joint Theater Trauma Registry (JTTS), The Department of Defense Medical Metrics (M2) database, and the US Army Physical Disability Administration database.

Pollack, P., & Rogers, C. (2007). A brief background of combat injuries. Retrieved from http://www.aaos.org/news/bulletin/marapr07/research2.asp.

> Wounds that are caused by blasts and high velocity projectiles are much more common in military than civilian settings. Thus, the ability to generalize lessons learned from the treatment of civilian injuries to the treatment of military injuries is somewhat limited. This report describes some of the current trends in military injury statistics and associated challenges.

World Health Organization. (2002). *Towards a common language for functioning, disability, and health: ICF.* Geneva: Author.

The International Classification of Functioning, Disability, and Health (ICF) provides a standard language for the description and classification of health-related states. It is a classification of health-related factors that can be used to describe changes in body function and structure, as well as the physical capacities associated with each health condition. These factors are classified from several perspectives, including body, individual, and societal, by means of two lists: a list of body functions and structure, and a list of activities. The term "disability" is an umbrella term that includes functional impairments and activity restrictions. The classification scheme also lists environmental factors that may interact with these factors.

World Health Organization. (2008). *Training manual on disability statistics.* Bangkok: United Nations.

This manual asserts that accurate disability statistics are very important for the ability to determine the needs of specific individuals, because although two individuals may share the same impairment, they may face different types of difficulties in their daily lives. Therefore, information about an individual's functional status is crucial for determining their social needs and assistive technology needs. This manual is based on initiatives to improve disability statistics and measurement by promoting a common definition and methodology that is based on the International Classification of Functioning, Disability and Health (ICF). It is intended to enhance the reader's understanding of the ICF-based approach to disability measurement. It provides guidance for understanding how to collect data regarding disabilities. It also covers data structuring, analysis, and dissemination.

Zouris, J. M., Walker, G. J., Dye, J., Galarneau, M. (2006). Wounding patterns for U.S. Marines and sailors during Operation Iraqi Freedom, major combat phase. *Military Medicine, 171*, 246-252.

This study examined the injuries sustained by 279 military personnel who had been wounded in Iraq. The goal was to determine the patterns of injuries that were caused by various wounding agents. On average, personnel were diagnosed with 2.2 injuries. Open wounds and fractures were the most common types of injury. Small arms and explosive munitions accounted for approximately 75% of the injuries. Upper and lower extremity wounds accounted for about 70% of all injuries. This percentage is consistent with those seen in military conflict since World War II, although the anatomical distribution has changed due to advances in personal protective equipment.