



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Health Outcomes Following Extremity Trauma

Lower-limb Amputation and Effect of Posttraumatic Stress Disorder (PTSD) on Department of Veteran Affairs (VA) (Outpatient Cost Trends)

Researchers at the Naval Health Research Center (NHRC), with funding from the Extremity Trauma and Amputation Center of Excellence (EACE), studied costs of VA outpatient care among patients who sustained serious leg injuries in combat in Iraq and Afghanistan between 2001 and 2008 by comparing costs for Veterans who had either a serious leg injury without amputation ($n = 170$), one leg amputation ($n = 460$), or amputation of both legs ($n = 153$). Patients with amputation(s) had more than double the VA outpatient costs compared to patients without amputation. Average VA outpatient costs per year in 2012 were \$7,200 for serious leg injury without amputation, \$14,700 for unilateral leg amputation, and \$18,700 for bilateral leg amputations. Annual VA costs declined significantly after the first year in the VA for Veterans who had a serious leg injury without amputation. By contrast, annual costs doubled over 3–5 years in the VA for patients with unilateral or bilateral amputation. Among patients with amputation, durable medical equipment (DME), including prosthetics) accounted for more than 50 percent of outpatient costs. In addition, PTSD is common among these patients and is known to complicate rehabilitation following combat injury. PTSD also predicted increased VA outpatient costs. The higher VA costs for the care of patients with PTSD show the importance of early treatment of PTSD to reduce long-term VA costs for patients with serious leg injuries and especially those with amputation. Overall, amputation and PTSD were associated with significantly increased VA outpatient costs based on multivariable regression models. Amputation was associated with a 3.12-fold increase in mean DME cost per year. PTSD was associated with significantly increased DME cost by amputation status and significantly increased psychiatric and pharmacy costs. Increasing injury severity score (ISS) was also associated with significantly increased costs.

This study is one of the first on outpatient costs at the VA over an average of five years for Veterans who had serious leg injuries, including amputation in the Iraq and Afghanistan conflicts.¹ The results indicate relatively high and sustained outpatient costs over years at the VA, for patients following lower limb amputation that is largely driven by the cost of prosthetics. PTSD substantially increased costs for multiple domains of healthcare including rehabilitation, pharmacy, and psychiatry. This finding highlights the importance of accurate diagnosis, treatment, and support for PTSD to reduce long-term healthcare costs. Understanding healthcare costs is a key to deliver timely and appropriate care to optimize outcomes for the nearly 2000 Service Members who sustained major limb amputations during the Iraq and Afghanistan conflicts. Given that extremity injuries accounted for approximately 50 percent of all combat injuries in these conflicts, it is important to understand healthcare costs following combat-related extremity injuries in order to support this large population of Veterans in the long term.

1 Bhatnagar, V., Richard, E., Melcer, T., Walker, J., & Galarneau, M. (2015). Lower-limb amputation and effect of posttraumatic stress disorder on Department of Veterans Affairs outpatient cost trends. *Journal of Rehabilitation Research and Development*, 52(7), 827–838. <https://doi.org/10.1682/JRRD.2014.11.0288>

