



US DEPARTMENT OF DEFENSE
BLAST INJURY RESEARCH PROGRAM
COORDINATING OFFICE

Health Outcomes and Long-Term Care Following Extremity Injury

TRICARE Comprehensive Outpatient Medical Utilization and Cost in Extremity Combat Amputee and Limb Salvage Patients

The clinical impact of combat-related amputations is substantial, with adverse effects on health and quality of life for affected Service Members. Approximately 90 percent of these amputations were caused by blast injuries. Less is known about the outpatient costs following upper and lower extremity amputation and limb salvage injuries. This study describes the outpatient medical utilization and procedure costs for extremity combat amputees and limb salvage patients. Researchers at NHRC and NMCSO, with funding from the BUMED Wounded, Ill and Injured program, identified study patients and injury-specific data in NHRC's EMED. Researchers conducted analysis of patients injured in Iraq and Afghanistan between 2001 and 2014. One-year post-injury outpatient encounter medical and billing data were queried for 1,560 patients from the TRICARE administrative direct care ambulatory medical database. The total direct cost for all 1,560 patients for one year of post-injury follow-up time was \$177 million. The estimated costs of durable medical equipment, including limb prosthetics and repairs, were approximately \$51 million. There were 584,748 outpatient encounter records for all patients in one year. For upper extremity amputations, researchers found an average of 197 outpatient encounters, and patients had a median of \$47,400 in medical costs. For lower extremity amputations, researchers found an average of 275 encounters, and patients had a median of \$87,600 in medical costs. For patients with upper and lower extremity amputations, researchers found an average of 338 encounters, and patients had a median of \$108,900 in medical costs. For limb salvage patients, researchers found an average of 92 encounters, and patients had a median of \$18,000 in medical costs. Even though prosthetics accounted for only 7 percent of the total number of outpatient procedures, those prosthetic procedures account for 29 percent of the total reported costs. This study shows the substantial outpatient healthcare costs and resource utilization requirements following combat-related extremity amputations. Understanding patterns of injury and resource utilization will support medical planning, optimize resource allocation, and improve rehabilitation of patients with serious extremity injuries.