

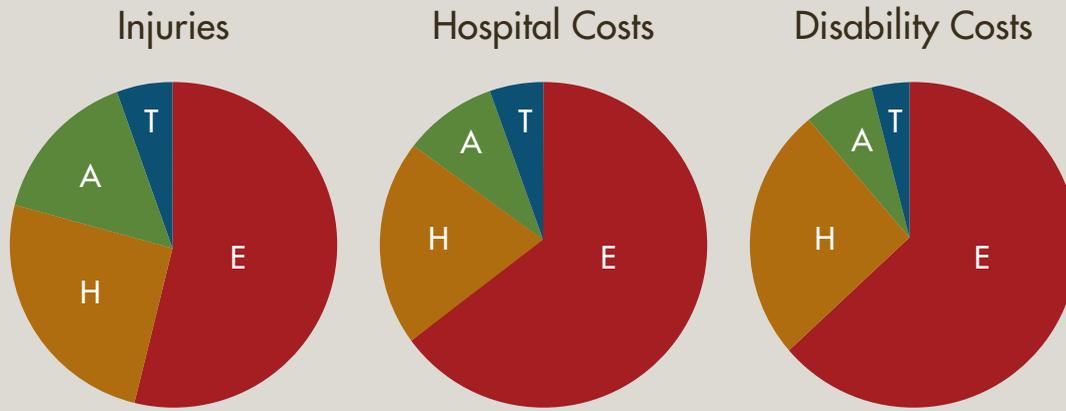
Extremity Injury Research Targets Quality of Life, Return to Function for Wounded Warriors

Jack Meikrantz

The Army took an important step toward helping wounded warriors with extremity injuries on Sept. 29, 2010, when the U.S. Army Medical Research Acquisition Activity (USAMRAA), working with the U.S. Army Institute of Surgical Research (USAISR) and the Combat Casualty Care Research Program, awarded \$38.6 million to the Center for Injury Research and Policy of the Johns Hopkins Bloomberg School of Public Health to continue critical research on the treatment and outcomes of major, battlefield-sustained, orthopedic injuries.

COL Dallas Hack, Director of the Combat Casualty Care Research Program in the U.S. Army Medical Research and Materiel Command, and Aaron Wade, Contracting Officer, USAMRAA, review the assist agreement to advance extremity injury research. (U.S. Army photo by Larry Sorcher, Fort Detrick Directorate of Plans, Training, Mobility, and Security.)





Distribution of injuries, resources, and disability costs by body region:
 A, abdomen; E, extremity; H, head; T, thorax.

The DOD-mandated award, funded by a Congressionally Directed Medical Research Program agreement to expand the Major Extremity Trauma Research Consortium, demonstrates the U.S. military’s commitment to the post-injury treatment, rehabilitation, quality of life, and return to duty for warriors with significant extremity trauma.

“Funding this consortium is the most significant event in orthopedic research in the past 50 years,” said Dr. Michael Bosse, Orthopedic Trauma Surgeon and Director of Orthopedic Clinical Research at the Carolinas Medical Center, Charlotte, NC. “For the first time in history, we have the organizational structure and medical and technical resources as well as the body of traumatic extremity injury data required by researchers to address critical research needs, accelerate quality-of-life outcomes, and establish ‘best practice’

treatment guidelines in clinical practice areas ranging from bone infections and pain management to bone regeneration.”

“I have no doubt that within five years, this research will redefine serious extremity injury treatment practices and deliver life-changing outcomes,” said Joseph C. Wenke, Ph.D., Consortium Program Manager for USAISR at Fort Sam Houston, TX.

COL James Ficke, M.D., agreed. Ficke chairs the Department of Orthopedics and Rehabilitation at the San Antonio Military Medical Center in Texas and is Orthopedic Consultant to the U.S. Army Surgeon General. “Within five years,” said Ficke, “we will be able to routinely regenerate four or five inches of new bone in patients with open [compound fracture] wounds. This staggering accomplishment will significantly lower rehabilitation costs, virtually

eliminate disability costs, and improve quality of life by reducing the need for orthotics and prosthetics and doubling the return to duty/function rates of patients with open-extremity fractures.”

USAISR and USAMRAA are part of the U.S. Army Medical Research and Materiel Command (MRMC), headquartered at Fort Detrick, MD.

A High Priority for Military Medicine

Since the beginning of World War II, if not before, the treatment, rehabilitation, and return to function of extremity-injured Soldiers have pushed the limits and tested the collective resolve of medical, technical, psychosocial, and financial institutions.

During the past nine years of *Operations Enduring* and *Iraqi Freedom* and *Operation New Dawn*, the percentage of service members who have sustained significant extremity trauma, often to multiple limbs, exceeds 80 percent. In one roughly three-year period ending in January 2005, 1,281 Soldiers sustained a total of 3,575 extremity combat wounds. Half of the extremity-wounded warriors injured in the current conflicts have not returned to active duty.

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According to Ficke, the total burden of treatment, rehabilitation, and disability costs of significant extremity trauma is far greater than that of any other specialized medical injury. “In fact,” Ficke said, “the burden of cost for extremity injuries is greater than the combined costs of treating Traumatic Brain Injuries and Traumatic Stress.”

Compared with injuries of the head and neck, abdomen, and thorax, extremity injuries require the longest average inpatient stay (10.7 days), and account for 65 percent of total inpatient resource dollars and 64 percent of total projected disability costs (see figure on Page 36).

Focusing and Expanding Resources for Research

The DOD Peer Reviewed Orthopaedic Research Program’s Clinical Consortium Award mechanism was offered for the first time in FY09 with the twofold intent of funding clinical studies focused on improving the outcomes of severe musculoskeletal injuries commonly associated with military combat, and challenging the scientific community to explore new directions and address relevant issues that had not received sufficient attention and funding. The overarching intent was to find solutions in the field of combat-related orthopedic injuries.

The award is designed to establish large, multisite clinical trials by combining the population of military orthopedic trauma patients and the combat-relevant expertise of military treatment facilities with the patient populations and research expertise of civilian trauma experts.

The original Major Extremity Trauma Research Consortium, established in 2009, was a network of 12 core Level I civilian trauma centers and four military treatment facilities: the Naval Medical Centers in Portsmouth, VA, and San Diego, CA; San Antonio Military Medical Center, Fort Sam

Houston; and Walter Reed Army Medical Center, Washington, DC.

Anchored by the Data Coordinating and Research Center at the Johns Hopkins Bloomberg School of Public Health, the consortium works with USAISR to conduct multicenter clinical research studies relevant to the treatment and outcomes of orthopedic trauma sustained in the military.

“The initial \$18 million in funding from DOD and the Orthopaedic Extremity Trauma Research Program was critical to establishing the consortium and providing the resources required to address some of the military’s immediate research needs in the acute management of severe limb injuries,” said Ellen MacKenzie, Ph.D., Principal Investigator and Chair of the Bloomberg School’s Department of Health Policy and Management.

“The new \$38.6 million in funding,” said Wenke, “will support efforts to double the number of core civilian trauma centers from 12 to 24; coordinate a group of 30 satellite trauma centers from across the country that have agreed to support the consortium through their participation in one or more consortium-sponsored studies; and conduct research in areas that have historically hindered optimum treatment and rehabilitation outcomes.”

Research targets include, but are not limited to: bone regeneration in patients who have suffered severe bone loss; bone infection; nonnarcotic alternatives to the management of chronic pain; and the challenges associated with

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reintegrating Soldiers and civilians into their respective “units” in society.

“Textbook teamwork,” responded COL Dallas Hack, Director of MRMC’s Combat Casualty Care Research Program, when asked to describe the collaboration by his office, USAISR, Johns Hopkins University, and USAMRAA to make this award. “Our team, led by USAMRAA, was united by its common mission to support the warfighter and driven by the compelling need to deliver extremity injury outcomes that we all believe will have an immediate quality-of-life impact on Soldiers’ lives.

“When USAMRAA, after several funding and programmatic delays, received our Procurement Request, they had less than two months of the fiscal year in which to make an award. In that time, USAMRAA’s White Team worked tirelessly to review nearly 30 business proposals with a total value of \$38.6 million; analyze, negotiate, and approve 30 separate budgets; and obtain the necessary in-house, command and Department of the Army-level approvals.

“This is the way program offices and their acquisition activity counterparts are supposed to work together,” Hack said.

Editor’s Note: It is with great sadness that we report author Jack Meikrantz passed away Jan. 24, 2011. He was a Business Development Specialist at USAMRAA, Business Oversight Branch, Fort Detrick. Meikrantz held a B.A. in business administration and accounting from Lycoming College.