**Improving Outcomes through Collaborative Research**

Approximately 55% of all service members injured in Operation Iraqi Freedom and Operation Enduring Freedom sustained significant extremity trauma. Many were burdened with injuries to multiple limbs. Complex wound management, infection, bone loss, articular surface loss, blast-related extremity heterotopic ossification, segmental nerve loss, complete muscle tendon unit loss and compartment syndrome have been identified as critical challenges in caring for our wounded warriors. These challenges are only compounded by the needs in the post-acute and rehabilitation phases of recovery.

The Major Extremity Trauma Research Consortium (METRC) was established in 2009 with funding from the Department of Defense (DoD). The goal of METRC is to produce the evidence needed to establish treatment guidelines for the optimal care of the wounded warrior and ultimately improve the clinical, functional, and quality of life outcomes of both service members and civilians who sustain high-energy trauma to the extremities.

METRC is comprised of a network of clinical centers and one data coordinating center that work together with the DoD to conduct multicenter clinical research studies relevant to the treatment and outcomes of orthopaedic trauma sustained in the military. These research studies rely on a multi-disciplinary approach that combines the clinical insights of the military and civilian orthopaedic surgeons and rehabilitation specialists, the research acumen of a world renowned clinical research center, and the high volumes of patients with severe injuries that are treated at major Level I trauma centers and Military Treatment Facilities (MTFs) across the nation.

Anchored by a Data Coordinating and Research Center at the Johns Hopkins Bloomberg School of Public Health, the Consortium includes 22 core Level I civilian trauma centers and four MTFs. These four military hospitals receive the majority of major causalities, and include Walter Reed National Military Medical Center, San Antonio Military Medical Center, Naval Medical Center San Diego, and Naval Medical Center Portsmouth. The Geneva Foundation manages the research conducted at the MTFs in tandem with the Baltimore-based METRC Coordinating Center.

Geneva is honored to contribute to METRC's mission to identify and prioritize the most critical issues challenging recovery from severe extremity trauma.

In 2014, Geneva's sites participated in 17 study protocols, including:

- **Registry:** The METRC Registry contains a limited set of data on patients between the ages of 18 and 84 who were admitted with fractures requiring surgery of the upper or lower extremity, pelvis or acetabulum, and foot.

- **RetroDefect Registry:** The primary objective of this study is to characterize the methods of treatment currently being used to repair segmental defects > 1 cm with at least 50% cortical bone loss resulting from an open long bone fracture and to describe the outcomes and incidence of major complications associated with existing treatment methods.

- **BIOBURDEN**: The assessment of severe extremity wound bioburden at the time of definitive wound closure or coverage, and correlation with subsequent post-closure deep wound infection.

- **OUTLET**: Measuring the outcomes following severe distal tibia, ankle and/or foot trauma, and comparison of limb salvage vs. transtibial amputation

- **PACS**: Predicting acute compartment syndrome using optimized clinical assessment, continuous pressure monitoring, and continuous tissue oximetry

- **PAIN**: A randomized controlled trial comparing efficacy of standard pain management vs. standard care combined with use of perioperative pregabalin or ketorolac in the treatment of severe lower limb fractures

- **TCCS**: Using a collaborative care model to improve quality of life following extremity trauma

- **Vanco**: An RCT evaluating a novel therapy to reduce infection after operative treatment of fractures at high risk of infection (primary award to University of Maryland)

- **PTOA**: Multi-center investigation of the mechanical determinants of post-traumatic osteoarthritis (primary award to University of Iowa)

- **PRIORITI-MTF**: Patient response to an integrated orthotic and rehabilitation initiative for lower extremity injuries in the military (primary award to Johns Hopkins University)

- **PROFIT**: Profthetic Fit Assessment in Transtibial Amputees Secondary to Trauma (primary award to Univ of California San Francisco)