The United States Armed Forces have been engaged in combat operations for more than 10 years. Not enough can be said about nor enough gratitude expressed to our troops for their commitment and sacrifice during this period. This supplement to the Journal of the American Academy of Orthopaedic Surgeons is dedicated to the men and women of the United States Armed Services and to their families and friends who support them.

The terrorist attacks on New York City, Washington, DC, and Pennsylvania on September 11, 2001, set in motion what has become the longest sustained armed conflict in American history. In the past decade of war, much has been learned about the care of the combat casualty and combat-related wounds. These advances would not have been possible without the cooperation of many dedicated civilian orthopaedic organizations.

Since combat operations began in 2001, more than 6,400 US service members have lost their lives, and more than 48,000 have sustained combat injuries.1 Troop vehicle design, body armor, and far-forward advanced surgical care have combined to yield the highest war injury survival rates in history. In World War II, the survivability rate was 70.7%.2 This rate increased to the mid 70th percentile for the conflicts in Korea and Vietnam. For the conflicts in Iraq and Afghanistan, the survivability rate was 89.7% as of 2011. Survivability steadily increased from 80.8% in 2001 to 92.0% in 2011.

More than 70% of combat casualties suffer extremity trauma.3 Unpublished data obtained from the US Military Amputee Database indicate that as of April 24, 2012, 1,453 injured US service members had required limb amputation, with 1,015 experiencing single limb loss and 438 experiencing multiple limb loss. Many other wounded service members have undergone successful limb salvage.

The inaugural Extremity War Injuries (EWI) symposium, held in 2006, focused on the difficulties related to combat casualty care and defined the state of practice at that time. At that meeting, knowledge gaps were identified and research priorities established. As a result of the annual EWI symposia series, several different funding mechanisms became available to investigate the problems facing surgeons and patients. This cycle was refined over subsequent symposia, focusing on particularly difficult problems, potential solutions, and reports of advances made. Subsequent symposia have focused on the challenges of orthopaedic care and reconstruction, such as infection, bone loss, and posttraumatic arthritis. New challenges have arisen, such as limiting combat-related death resulting from severe extremity heterotopic ossification and treating patients with multiple limb loss.

EWI VI, “Data-Driven Progress in...
### Extremity War Injuries: Current Management and Research Priorities

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The annual EWI symposia provide a collaborative forum in which military and civilian surgeons establish and execute an aggressive research agenda focused on topical clinical issues. The US Department of Defense and congressional leaders recognize the potential positive impact on both military and civilian trauma patients and continue to support and participate in the symposia. Importantly, Congress has continued to allocate significant funds to support basic scientific research, including the effectiveness of surgical débridement techniques, use of the Masquelet technique for bioactive membrane formation and other segmental defect techniques, timing of wound closure and flap coverage, long-term complications of disability secondary to posttraumatic arthritis, and long-term complications following amputation and limb salvage.

Military surgeons recognize the underpublicized burden of disability experienced by limb salvage patients. Arthritis and functional loss related to nerve injury or missing muscle are common sequelae of lower extremity limb salvage. The EWI VIII symposium, scheduled for February 9–11, 2013, in Washington, DC, will focus on the sequelae of combat injuries, including joint preservation and joint replacement in patients with posttraumatic arthritis, complex upper extremity injuries, infection, junctional injuries, multiligamentous knee injuries, and long-term sequelae of amputation.

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Dr. Ficke or an immediate family member serves as a board member, owner, officer, or committee member of the American Orthopaedic Foot and Ankle Society, American Academy of Orthopaedic Surgeons, Society of Military Orthopaedic Surgeons, and Airlift Research Foundation. Dr. Andersen or an immediate family member serves as a board member, owner, officer, or committee member of the Orthopaedic Trauma Association. Neither Dr. Bosse nor any immediate family member has received anything of value from or has stock or stock options held in a commercial company or institution related directly or indirectly to the subject of this article.
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For additional information on the EWI symposia series, please visit www.aaos.org/ewi.

References

