USAMRMC STRATEGIC COMMUNICATION PLAN

U.S. ARMY INSTITUTE OF SURGICAL RESEARCH (USAISR)

MISSION

The U.S. Army Institute of Surgical Research's mission is to provide (1) requirements-driven combat casualty care medical solutions and products for injured Soldiers from self-aid through definitive care across the full spectrum of military operations; (2) state-of-the-art trauma, burn and critical care to DOD beneficiaries worldwide and civilians in the trauma region; and (3) Burn Special Medical Augmentation Response Teams.

BACKGROUND

The USAISR is a worldwide leader in combat casualty care, producing medical devices, biomedical research and novel therapeutics to treat Warfighters from the point of injury through the continuum of care. Serving as the Army's burn center since World War II, the institute continues to provide superior care to Warfighters and their beneficiaries across the world by providing the full spectrum of care in state of the art facilities led by highly specialized treatment teams. The institute's combat casualty care research mission encompasses eight basic research areas: blood research, bleeding control and resuscitation, bone injury, soft tissue injury, trauma informatics, craniomaxillofacial injury, ocular trauma and clinical trauma. These eight areas concentrate on saving Soldiers' lives, preventing loss of viable tissue and returning Soldiers to duty as soon as medically possible.

In bleeding control research, the institute is developing new hemostatic field dressings and tourniquets (both limb and junctional) for compressible bleeding, intracavitary agents to stop noncompressible bleeding, injectable drugs to enhance or restore hemostatic function, and devices to stop severe internal bleeding. In the field of bone injury, the institute is studying bone antimicrobial external fixator pins, antimicrobial bone replacement materials and wound irrigation techniques and devices to reduce the morbidity of combat injuries. For soft tissue injury, the Institute is investigating antimicrobial polymer bandages and antibiotics for far-forward use to reduce the impact of tissue injuries and enable Soldiers to continue their missions. In trauma informatics research, the Institute is evaluating what to measure and how to develop the medical monitoring devices capable of providing critical real-time information about the severity of wounds and risks of mortality to assist the medic in determining the best strategies and priorities for remote triage of injured Soldiers on the battlefield.

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In craniomaxillofacial injury, researchers are studying the unique challenges of bone and tissue regeneration following facial injury and developing novel strategies to limit oral biofilms and hypertrophic scar formation. The ocular trauma research group is investigating the use of stem cell therapies and magnetic nanoparticles to deliver therapeutic cells to the eye in clinically relevant models of burn and blast injury.
In clinical trauma research, the Institute is examining a variety of combat casualty care problems in trauma/burn patients, including those described in other research areas, to improve treatment and reduce morbidity and mortality. The guiding strategy for the Institute's research program is to take the clinical problems identified on the battlefield into the research laboratory for further investigation and the development of solutions and then to validate those solutions in the clinical setting before they are returned to the battlefield as medical doctrine. The USAISR's vision is to be the DOD's premier combat casualty care research, trauma, burn and critical care center in support of the medical needs of Warfighters and their beneficiaries. The USAISR's objective is to integrate all services' combat casualty care research missions/functions into a multifaceted synergistic research capability with a clinical foundation. The USAISR also is focused on sustaining the DoD's world-class adult burn center and leading the world in burn care research.

KEY THEMES AND MESSAGES

The USAISR's goal is to create a Joint Center of Excellence for Battlefield Health and Trauma Research.

The USAISR's objective is to establish an entity that integrates all services' combat casualty care research missions/functions into a multifaceted synergistic research capability with a clinical foundation.

The USAISR sustains the DOD's world-class adult Burn Center at Brooke Army Medical Center and leads the world in burn care research.

QUESTIONS & ANSWERS

Q *How does USAISR-supported research translate into improved trauma care?*

A TThe Joint Theater Trauma System is an organized approach to providing improved trauma care across the continuum of the roles of care to trauma patients, especially in the battlefield environment. The Joint Theater Trauma Registry is the data repository collecting and hosting all DOD trauma-related data.

The mission of the JTTS is:

- **Establish and maintain a DOD Trauma Registry System** to capture data and provide information on care and outcomes of military and civilian trauma patients.
- **Provide the DOD and other authorized parties** with timely and relevant information about care and outcomes of military and civilian injuries.

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- **Create a research strategy** that supports reduction of morbidity and mortality in military and civilian trauma patients.
- **Establish and maintain a trauma outcomes database** to analyze and evaluate clinical decision making and measure subsequent outcomes for improving treatment modalities.
- **Provide activities of each of the services** with full and complete access to data in the DOD Trauma Registry.

The goals of the JTTS include:

- **Provide the ability to perform data-driven,** battlefield-level process improvement of trauma care that drives morbidity and mortality to lowest possible levels.
- **Expand across DOD to bring trauma systems** into fixed facility care as well as theater care thus enhancing readiness to provide optimal trauma care to deployed service members.
- **Emphasize continuous improvement** in medical record documentation quality.
- **Capture and share patient data** across all Roles of Care to enable evaluation and adherence to theater clinical practice guidelines and standard operating procedures.
- **Identify training requirements**, capture injury epidemiology, support research initiatives, and assess success of interventions and outcomes.

Q *What contributions has the USAISR Burn Center made to research and treatment?*

A The USAISR's Burn Center at Brooke Army Medical Center, Fort Sam Houston, Texas, serves as the sole burn center within the DOD; providing comprehensive care to military casualties, beneficiaries and civilian emergency patients based on state-of-the-science practices and technology fully integrated with combat casualty care research. The burn center has the resources required for providing optimal care to burn patients from time of injury through the rehabilitation phase. Critical care provided within the burn center leverages state-of-the-science best clinical practices coupled with clinical research to ensure optimal care. Ongoing research activities remain focused on combat casualty care and related priorities of the USAISR, including resuscitation, hemostasis and critical care of the trauma patient.

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Q *Has USAISR assisted in developing any inventions or products in the area of combat casualty care?*

A **The following products are available for licensing:**

- Catheter Securing Device and Bite Block
- Disposable Pulse Oximeter Assembly and Protective Cover
- Nasopharyngeal Airway with Reflectance Pulse Oximeter Sensor
- Needle with Fiberoptic Capability Walker
- Orthogonal Arterial Catheter
- Pacifier Pulse Oximeter Sensor
- Pulse Oximeter Sensor Combined with a Combination Oropharyngeal Airway and Bite Block
- Securing Device for an Endotracheal Tube Self-Piercing Pulse Oximeter Sensor Assembly
- Wound Dressing System

In addition, the USAISR has worked with several companies to deliver products to the battlefield. These include the Combat Application Tourniquet, the original HemCon hemostatic dressing now replaced by Combat Gauze hemostatic dressing, the hypothermia prevention and management kit, the FAST-1 and EZ-IO intraosseous infusion systems, the FMS-2000 and other fluid warmers and Nomex gloves to protect from burn injuries.