



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Aeromedical Evacuation

Joint-Force Aeromedical Transport Litter Immobilization and Stabilization Prototype

Service Members who are injured in far forward locations often need to receive medical treatment during transport including aeromedical evacuation. Because of challenges associated with administering medical care within a moving environment, including the potential for exacerbating current injuries, treatment provided during both ground and air transport must be improved to address proper immobilization, shock and vibration isolation, injury site access, and medical equipment storage. As part of the Small Business Innovation Research (SBIR) program, the Cornerstone Research Group, Inc. received funding to develop a prototype with the capability to reduce the impact of the moving environment on patient physiology with the goal to prevent pressure ulcer development, hypothermia, and secondary injury associated with traumatic brain injury (TBI) or spinal cord injury (SCI) instability. The Aeromedical Transport Litter Immobilization and Stabilization (ATLIS) Prototype includes the Spinal Immobilization System (SIS) and the Patient Stabilization Platform. The SIS contains a head and neck immobilization device, a cervical immobilization and traction device, and a cervical immobilization collar. The Patient Stabilization Platform is comprised of three subsystems including a mattress with a rigid transport litter, a restraint system, and a fluid management system. The ATLIS prototype aims to expand life-saving interventions by integrating treatment-compatible, reduced-footprint devices in order to enhance patient treatment, transfer, and monitoring capabilities and improve caregiver casualty management efficiency. It is hoped that fostering advanced medical treatment closer to the battlefield will reduce patient transport time, minimize patient transport system weight, and improve dynamic performance. Currently, airworthiness testing of this prototype is ongoing at the US Army Aeromedical Research Laboratory (USAARL) and the Air Force Research Laboratory (AFRL). Prior to use in the Military Health System (MHS), the ATLIS Platform will still need to be assessed based on global performance criteria, such as compatibility with current En Route Care transport platforms, patient comfort and ergonomics, maintenance and durability, implementation, functionality, manufacturability, and cost constraints.

