Knowledge to Practice: Care Bundles Improve Trauma Patient Outcomes

The two most common causes of death and disability after injuries are hemorrhagic shock and severe traumatic brain injury (TBI), with mortality rates ranging from 30 percent to 50 percent. Injuries cause approximately 190,000 deaths each year in the US and more than $600 billion in medical costs and lost productivity. While many research and clinical practice guidelines have been developed to care for severely injured patients, adoption of these practices remains suboptimal.

Comprehensive new research published in *The Journal of Trauma and Acute Care Surgery*, and authored by Baylor Scott & White Health researchers Shahid Shafi, MD, MPH; Ashley Collinsworth, ScD, MPH; Kathleen Richter, MS, MBA, and a team of national trauma experts, establishes bundles of care to bridge the gap between knowledge and practice for treating TBI and hemorrhagic shock.

A bundle of care is a collection of three to five evidence-based processes of care for patients with a specific diagnosis. Established by the Institute of Healthcare Improvement (IHI), this approach has been proven to enhance the quality of care and improve patient outcomes for a variety of medical conditions.

Shafi, Collinsworth and Richter undertook an extensive review of current studies and treatment practice guidelines to identify hundreds of evidence-based practices related to the treatment of hemorrhagic shock and severe TBI in trauma patients. They led a nationwide panel of experts through multiple rounds of reviews, discussions and votes to develop two bundles of care—one for resuscitation from hemorrhagic shock and another for early management of TBI. Each bundle includes five specific evidence-based interventions that are most likely to improve the outcomes of patients with severe injuries.

The Department of Defense (DOD) has expressed an interest in testing the bundle for treatment of hemorrhagic shock because of its relevance to the injuries sustained on the battlefield. Thus, the Baylor Scott & White group submitted a grant proposal to the DOD to measure the impact of implementing the shock bundle on patient outcomes. A successful clinical trial would pave the way for increasing awareness and adoption of the bundles in routine clinical practices at civilian and military trauma centers.

Shafi and Collinsworth chose the bundles-of-care approach due to its success in preventing and treating other conditions such as ventilator-associated pneumonia, central line-associated bloodstream infections and sepsis. The approach has encouraged important changes in health care delivery.

“Our work represents a major step toward improving adoption of evidence-based practices in trauma care,” said Dr. Shafi. The straightforward steps in bundles of care make implementing the techniques simple and easy to understand—bridging the gap between research knowledge and clinical practice. Bundles of care, completed in their entirety, have the potential to improve patient outcomes and ultimately save lives.