

# Post-Deployment Healthcare Challenges

Polytrauma and Blast-Related Injuries QUERI

April 2012

## Blast-Related Injuries

As of March 12, 2012, approximately 54,000 service members have been wounded in action or killed in Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND). Improvised explosive devices, blasts (high-pressure waves), landmines, and explosive fragments account for the majority of combat injuries. Most of these blast/explosion-related injuries are polytraumatic, meaning that they result in impairments in more than one body system or organ. New systems of care have been developed to address the rehabilitation needs of service members with these complex injuries, particularly returning OEF, OIF, and OND Veterans.

The Polytrauma and Blast-Related Injuries Quality Enhancement Research Initiative (PT/BRI-QUERI) was established to identify and implement best evidence-based practices for the post-deployment healthcare challenges presented by modern warfare. PT/BRI-QUERI is dedicated to promoting the successful rehabilitation, psychological adjustment, and community re-integration of men and women who have sustained polytrauma and blast-related injuries. This QUERI center also focuses on the needs and care of the families of these service members, as well as the coordination of care across the continuum of military healthcare systems – from the Department of Defense (DoD) through facility-based and community-based care.

## Post-Deployment Healthcare Challenges

Recognizing the need for new systems of care to meet the rehabilitation needs and optimize functional outcomes in patients with polytraumatic combat injuries, the Secretary of Veterans Affairs designated four Polytrauma Rehabilitation Centers (PRCs) to provide specialized inpatient rehabilitation treatment and expand clinical expertise in polytrauma throughout VA. These four Centers are located in Minneapolis, MN; Palo Alto, CA; Richmond, VA; and Tampa, FL. Subsequently, a fifth PRC was established in San Antonio, TX.

The PRCs are the hub of the Polytrauma System of Care, which also includes:

- Polytrauma Transitional Rehabilitation Programs (PTRPs) that are co-located with the PRCs;
- 23 specialized outpatient and sub-acute rehabilitation programs referred to as Polytrauma Network Sites (PNSs), geographically distributed within each of VA's 21 integrated service networks (VISNs);
- Designated polytrauma teams at smaller, more remote VA facilities; and
- Points of contact at all other VA facilities.

### *New and Ongoing PT/BRI-QUERI Studies*

*Screening and Evaluation:* To ensure that Veterans returning from Iraq and Afghanistan with combat-related

traumatic brain injury (TBI) receive appropriate healthcare, in April 2007, VA instituted nationwide screening for all OEF/OIF Veterans that use the VA healthcare system. Associated VA policy specifies that those who screen positive undergo a comprehensive evaluation for TBI. PT/BRI-QUERI researchers are conducting studies to improve VA's TBI screening and evaluation program.

One recently completed study found that VA's TBI screening tool has high internal consistency, test-reliability, and sensitivity, but only moderate specificity. Findings further suggested that specificity was lower because some of the symptoms included in the screen also are common in disorders other than TBI, such as PTSD.

Another project examined TBI screening implementation and found that most Veterans were offered TBI screening, and screening rates increased over time, but varied by facility, clinic, and patient characteristics. Using national data, another team of investigators observed dual sensory impairment among OEF/OIF/OND Veterans, gender differences in post-concussive symptoms by PTSD comorbidity and etiology of injury, and significantly higher VA utilization and costs for TBI patients with PTSD.

A new study will provide information to improve access to the Comprehensive TBI Evaluations through clinical video telehealth (CVT). For more information, contact Bridget Smith, Ph.D., at [Bridget.Smith@va.gov](mailto:Bridget.Smith@va.gov).

PT/BRI-QUERI researchers also are developing and testing brief educational interventions in OEF/

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OIF/OND Veterans screened for TBI to improve Veterans' understanding of mild TBI, and of the meaning of screening positive. For more information, contact Jessica Hamblen, Ph.D., at [Jessica.Hamblen@va.gov](mailto:Jessica.Hamblen@va.gov) or Karen Seal, M.D., at [Karen.Seal@va.gov](mailto:Karen.Seal@va.gov).

Screening for visual dysfunction in war-injured Veterans with TBI is another priority. A new study will work to develop a vision screening tool that will standardize vision assessment and facilitate future research by providing a uniform data collection instrument. For more information, contact Gregory Goodrich, Ph.D., at [Gregory.Goodrich@va.gov](mailto:Gregory.Goodrich@va.gov).

*Best Practices for Insomnia Treatment in Veterans with TBI:* Research has established that insomnia is a highly prevalent problem among OEF/OIF Veterans with TBI. In two different HSR&D studies, a PT/BRI-QUERI investigator first evaluated preferences for insomnia treatment and, subsequently, tested the feasibility and initial effectiveness of a preference-based insomnia treatment. From pre- to post-treatment, there was a significant improvement in insomnia

severity and daytime functioning, as well as sleep quality and sleep-related self efficacy. The reduction in insomnia severity from moderate severity to a sub-clinical level occurred by the second week of treatment and maintained to post-treatment. The investigators are using this finding as the basis for a larger implementation trial. For more information, please contact Dana Epstein, Ph.D., at [Dana.Epstein@va.gov](mailto:Dana.Epstein@va.gov).

*Evaluating Family-Centered Care:* Family-centered care is the practice of involving families in clinical decision-making, care plans, and educational efforts for their loved one. PT-BRI/QUERI conducted web-based surveys of Polytrauma Network Site and Polytrauma Support Clinical Team staff to describe clinician use of family-centered practices and identify challenges they experience engaging families in Veterans' care plans. Program leaders also were surveyed to evaluate program characteristics that affect the use of family-centered practices. Information will inform the development of interventions to improve family-centered care. For more information, please contact Carmen Hall, R.N., Ph.D., at [Carmen.Hall@va.gov](mailto:Carmen.Hall@va.gov).

## How Do I Learn More?

For more information about PT/BRI-QUERI, contact:

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## Web Resources

For more information about the QUERI program in general, and to link to all of the individual QUERI Centers, please go to

[www.queri.research.va.gov](http://www.queri.research.va.gov)

## The PT/BRI-QUERI Executive Committee

Each QUERI Executive Committee is co-chaired by research and clinician experts. The research expert and Director for the PT/BRI-QUERI is **Nina Sayer, Ph.D.** The Clinical Co-ordinators are **Joel Scholten, M.D.**, and **Steven Scott, D.O.** The Executive Committee brings together a diverse group of researchers, clinicians, and leaders from VA and DoD who are committed to improving care for individuals with polytrauma and blast-related injuries. PT/BRI-QUERI Executive Committee members include: Leigh Anderson, M.D.; Adam Anicich, M.B.A.; Lucille Beck, Ph.D.; Doug Bidelspach, M.P.T.; David Cifu, M.D.; **Carmen Hall, R.N., Ph.D.** (Implementation Research Coordinator); Robert Kerns, Ph.D.; Laurent Lehmann, M.D.; RyAnne Noss, Ph.D.; Andrew Quanbeck, M.S.; Barbara Sigford, M.D., Ph.D.; and Rodney Vanderploeg, Ph.D.

