Post-Deployment Healthcare Challenges

Polytrauma and Blast-Related Injuries QUERI

June 2014

Blast-Related Injuries

As of April 2014, 58,727 service members have been wounded or killed in Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND). Improvised explosive devices, landmines, and explosive fragments account for the majority of combat injuries. Most of these blast/explosion-related injuries involve polytrauma, meaning that they result in impairments in more than one body system or organ. VA developed the Polytrauma System of Care to address the rehabilitation needs of service members and Veterans with these complex injuries.

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. The scope of the PT/BRI-QUERI includes the full range of health problems, healthcare systems, and psychosocial factors represented in this mission. PT/BRI-QUERI, therefore, is not limited to one medical problem; instead, this QUERI focuses on the patterns of comorbidities and related functional problems and healthcare needs among the combat-injured.

Despite the breadth of this scope, the priority clinical focus is traumatic brain injury (TBI) within the context of polytrauma (TBI/polytrauma). PT/BRI-QUERI priority goals are to: 1) Support and enhance implementation of evidence-based, integrated, patient-centered care for patients with TBI/polytrauma; 2) Improve patients’ ability to manage their persistent TBI/polytrauma-related symptoms, impairments, and functional difficulties; and 3) Optimize Veterans’ support systems, including family, peers, VA, and community resources.

Polytrauma System of Care

To meet the rehabilitation needs of patients with polytraumatic combat injuries, VA developed the Polytrauma System of Care, which operates under the leadership of PM&R within Rehabilitation and Prosthetics Services and sets the standard for TBI care within VA. This system of care includes:

- Five Polytrauma Rehabilitation Centers (PRC) provide acute inpatient rehabilitation for Veterans and Active Duty Service Members with TBI and polytrauma. Each PRC has designated beds for the Emerging Consciousness Program and a Polytrauma Transitional Rehabilitation Program (PTRP) to provide comprehensive, post-acute cognitive retraining and community re-entry rehabilitation through outpatient and residential programming.
- Polytrauma Network Sites (PNS) provide and coordinate TBI-related care for Veterans within each VISN. These sites act as referral centers and provide oversight and education to other medical centers within their VISNs.
- Polytrauma Support Clinic Teams (PSCT) provide evaluation for Veterans with positive TBI screens and follow stable TBI-related symptoms.
- Polytrauma Points of Contact (PPOC) at every facility that does not have a PNS or PSCT.

PT/BRI-QUERI research has shown that Veterans diagnosed with TBI are seen in multiple care settings and that many receive services outside of TBI/Polytrauma clinics. Therefore, while working closely with PM&R to improve the Polytrauma System of Care, PT/BRI-QUERI research focuses on all care settings where Veterans receive services for TBI/polytrauma.

New and Ongoing PT/BRI-QUERI Studies

Evidence-based, integrated, patient-centered care for Veterans with TBI/polytrauma

To inform service delivery and future research, PT/BRI-QUERI creates and distributes annual TBI Utilization Reports which summarize the rate of TBI, mental health, and pain comorbidities; VA service use; and healthcare costs in OEF/OIF/OND Veterans. We found that in any given year, approximately 7% of OEF/OIF/OND Veterans utilizing VHA...
services received a diagnosis of TBI in a VA clinic. Moreover, from FY2010 through FY2012, 9.8% of the 689,949 OEF/OIF/OND Veterans utilizing VHA services received a TBI diagnosis. The vast majority of patients with a TBI diagnosis also had a clinician-diagnosed mental health disorder, and half of those Veterans with diagnosed TBI had both post-traumatic stress disorder (PTSD) and pain diagnoses. The median annual cost per Veteran diagnosed with TBI was more than three times higher than for those without TBI. A substantial portion of this higher utilization was due to mental health, rehabilitation, and polytrauma healthcare utilization.

While the overall number of Iraq and Afghanistan War Veterans using VA healthcare services continues to increase each year, the patterns and prevalence of diagnoses, as well as the utilization of services, have remained similar over time. These reports are posted online (http://www.queri.research.va.gov/ptbri/utilization_reports.cfm). For more information, contact Brent Taylor, Ph.D., at Brent.Taylor2@va.gov.

**Progressive Tinnitus Management**

Tinnitus is the most prevalent service-connected disability for Veterans. Progressive Tinnitus Management (PTM) has been shown in controlled studies to benefit tinnitus sufferers; however, PTM is not routinely accessible to Veterans. This study will determine tinnitus-management practices in VA hospitals to develop interventions that mitigate barriers to the implementation of PTM, leading to a planned implementation study of PTM. The study is a partnership between VA Program Offices (Mental Health Services, Audiology and Speech Pathology Service), PT/BRI-QUERI, and the VA National Center for Rehabilitative Auditory Research. For more information, contact James Henry, Ph.D., at James.Henry@va.gov.

**VA's Pain Coach**

A recently funded PT/BRI-QUERI study will examine the integration of VA's Pain Coach smartphone application into clinical care. This app provides pain education, facilitates monitoring of pain-relevant outcomes, and teaches self-management skills for chronic pain. Investigators will examine OEF/OIF/OND Veterans’ and their providers’ interest in using the app, and the potential need for education and support for successful utilization. They also will identify potential barriers and facilitators to use in clinical settings. For more information, contact Alicia Heapy, Ph.D., at Alicia.Heapy@va.gov.

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**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

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**The PT/BRI-QUERI Executive Committee**

Each QUERI Center is led by research and clinician experts. The research expert and Director for PT/BRI-QUERI is Nina Sayer, Ph.D. The Clinical Co-Coordinators 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 who are committed to improving care for individuals with polytrauma and blast-related injuries: Leigh Anderson, M.D.; Adam Anicich, M.B.A.; Lucille Beck, Ph.D.; Nancy Bernardy, Ph.D.; Doug Bidelspach, M.P.T.; Lucile Burgo, M.D.; David Cifu, M.D.; Timothy Hogan, Ph.D.; Stephen Hunt, M.D.; Margaret Kabat, L.C.S.W.-C, C.C.M.; Shannon Kehle-Forbes, Ph.D., L.P. (Associate Director); Robert Kerns, Ph.D.; RyAnne Noss, Ph.D.; Princess Osei-Bonsu, Ph.D. (Implementation Research Coordinator); and Andrew Quanbeck, Ph.D.