



Introduction

In the past few years, the VA health care system has seen an influx of combat survivors with a combination of traumatic brain injury (TBI), physical injuries, and emotional sequelae^{1,2,3}. For the general public, an initial response is to focus on the cognitive deficits related to TBI. However, a recent study revealed that TBI patients with more emotional problems were less likely to return for follow-up appointments⁴, with the potential for adverse effects on care coordination and functional outcome. Another study showed that patients with TBI plus acute co-morbidities tended to have longer lengths of hospital stay⁵.

TBI is a very heterogeneous disease entity, and clinicians often remark that “no two TBIs are alike.” Thus, caring for patients with TBI and its co-morbidities requires a coordinated team of professionals to derive accurate diagnoses and plan appropriate treatment. To achieve this goal, the Department of Veterans Affairs (VA) established the Polytrauma System of Care (PSC) to deliver the best possible care to injured veterans⁶. Acute inpatient medical and rehabilitation care for patients with severe TBI is provided through Polytrauma Rehabilitation Centers (PRCs): Minneapolis, Palo Alto, Richmond, and Tampa, plus the recently funded 5th PRC in San Antonio, Texas. At the same time, 21 regional Polytrauma Network Sites (PNS) have been established to manage post-acute sequelae of polytrauma throughout the 21 Veterans Integrated Service Networks (VISNs) across the country. The Polytrauma Network Sites provide key components of rehabilitation evaluation and care coordination that address the ongoing specialty needs of individuals with polytrauma, such as patients with mild TBI from blast exposures. In addition, there are 130 plus Polytrauma Support Clinic Teams (PSCT) and Polytrauma Points of Contact (PPOC), which are responsible for managing patients with stable treatment plans, providing regular follow-up visits, and responding to new problems as they emerge.

VA has also funded a special Quality Enhancement Research Initiative (QUERI) to identify clinical needs and to implement evidence-based practice for patients with polytrauma and blast-related injuries⁷. Since the impacts of TBI extend beyond the individual to the family, the Polytrauma and Blast-Related Injuries QUERI is also partnering with the clinical teams in VA’s PRCs to enhance family care.

The Defense and Veterans Brain Injury Center (DVBIC) has been linking Department of Defense (DoD), VA, and civilian teams to ensure that service members with TBI receive the highest quality of care⁸. With its headquarters in Washington, DC and collaborators across the country, the DVBIC accomplishes its mission through innovative research, care coordination, clinical service, and educational programs.

To further the efforts mentioned above, VA’s Office of Research and Development (ORD) is sponsoring this TBI State-of-the-Art (SOTA) conference. The goal of the TBI SOTA is to identify what we know and what we need to know about TBI screening, treatment, management, and rehabilitation, and to develop a research agenda, strategies, and recommendations that will address knowledge gaps. The ultimate goal is to provide scientific evidence for best practice, to improve the lives and quality of health care for veterans with TBI.





SCREENING, TREATMENT, MANAGEMENT, AND REHABILITATION

Under the guidance of Dr. Joel Kupersmith and his ORD leadership team, the SOTA process began with a planning committee made up of 17 experts who carefully planned the focus and content of the SOTA conference. To provide background for this SOTA, 14 papers have been commissioned that examine issues ranging from the pathology of blast-related brain injury, to diagnosis of TBI, comorbidities (such as mental health issues, sensory deficits, infections, seizures, and pain), pharmacologic interventions, neuroimaging, care management, community re-integration, and the role of veterans' family members in TBI care. We hope that these papers will be informative and provide a common knowledge base for discussions at the SOTA.

This is a working conference. Invited SOTA participants will spend most of their time in one of six specific work groups. We hope that each work group will generate research questions and concepts that will help to advance our knowledge about mild to severe TBI to improve the quality of care and thus the lives of veterans with TBI.

We are grateful for your time and willingness to join us in this endeavor. We look forward to a very productive meeting.

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