Japan-US Exchange for Research and Reintegration of Veterans and Persons with mild Traumatic Brain Injury, PolyTrauma and PTSD into University and Next Generation Jobs

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Abstract

Returning US Service Members from the wars in Iraq and Afghanistan have experienced an extremely high number of injuries, often blast-related which include Traumatic Brain Injury (TBI), Post Traumatic Stress Disorder (PTSD), and chronic pain. Additionally among these potential hundreds of thousands of Service Members with TBI, the majority experience mild Traumatic Brain Injury (mTBI) and are capable of a return to university studies and lifelong careers. The MindKnit Research Center is developing partnerships for sharing interdisciplinary research, integrated healthcare and university reintegration, models to recruit and train mentors, such as from the national Volunteer Portal under the White House with over 220,000 volunteers. Additionally, the Japan NRCD has partnered together with MindKnit Research Center and the US Veterans Health Affairs to build and sustain a vibrant “US-Japan Exchange” to share US and Japanese research, clinical, rehabilitation, reintegration and cultural models and national healthcare models to benefit both the hundreds of thousands of Service Members with TBI, but also the hundreds of thousands of persons with Brain Injury in Japan, and the 1.7 million persons with Brain Injury in the United States. Finally, this paper addresses a national Veterans Affairs healthcare study to build a nationwide model for Supported Education systems partnering the VA healthcare, university faculty and leaders, and potentially community experts such as the MindKnit Research Center and the White House Volunteer Portal – to provide successful reintegration to university for the hundreds of thousands of capable Service Member with TBI. This paper was presented as the US Co-Moderator of the Japan-US Exchange at the 34th Annual Conference of the Japan Higher Brain Disorder Society.

Key Words: Traumatic Brain Injury (TBI), Polytrauma, Post Traumatic Stress Disorder (PTSD), US Japan Exchange, Supported Education

Introduction

The “US Japan Exchange” was formed three years ago to share medical research, clinical treatment, rehabilitation and reintegration protocols for Traumatic Brain Injury, Post Traumatic Stress Disorder (PTSD), and Cognitive Disabilities.

For the 34th Annual Higher Brain Dysfunction (HBD) Society Conference, the Honorable United States
Senator, Daniel Inouye of Hawaii, the US Secretary of Veterans Affairs, the Honorable Eric Shinseki; the Japan Ministry of Health, Labour and Welfare; and the Japan Ministry of Foreign Affairs provided support coordinated with the US Embassy, Tokyo, Japan.

Senator Inouye, personally challenged the assembled members of the 34th Annual Conference to “… discover new ways of reducing the stigma and improving the treatment of post-traumatic stress, traumatic brain injury and related wounds of war.” Senator Inouye, a WWII combat veteran and Congressional Medal of Honor holder, supports the sharing of new medical research, clinical practice, rehabilitation and reintegration for TBI patients in the US and Japan.

This Japan-US Exchange was led by: the Japan National Rehabilitation Center for Persons with Disabilities (NRCD), Japan Co-Moderator; and the US Co-Moderator, MindKnit Research Center.

The MindKnit Research Center, non-profit brought partners from the US VA Medical Centers and VA Psychosocial Rehabilitation, Compensated Work Therapy (CWT) Programs; US universities, and a White House Volunteer Portal including over 220,000 volunteers to share large-scale community and national TBI research, treatment and reintegration models.

This US-Japan TBI Exchange has also shared NRCD, Higher Brain Dysfunction Society and Japan-based models for clinical treatment, rehabilitation, and reintegration lessons learned from TBI and mTBI research, clinical practice, and reintegration protocols for use by US VA, Defense Veterans Brain Injury Center (DVBIC) and other US Traumatic Brain Injury Providers.

Discussion

The United States Department of Veterans Affairs (VA) and the Department of Defense (DoD) are currently providing healthcare solutions for returning Service Members who have served in conflicts abroad such as in Afghanistan and in Iraq. The RAND Corporation Report concludes that of the 2 million Service Members who have served in these conflicts, approximately 1.25 million have left their military service and 50% have accessed VA Healthcare (Analysis of VA Healthcare, 2010). The RAND Report of 2008 estimated that 19% may have been subjected to Traumatic Brain Injuries (TBI) and 31% may have sustained TBI and related mental health conditions such as post traumatic stress disorder (PTSD) or depression.

These hundreds of thousands of “at-risk” individuals for TBI require interdisciplinary healthcare and reintegration solutions to address a variety of symptoms and to build successful healthcare and reintegration outcomes.

In response to Traumatic Brain Injury (TBI) emerging as the “signature injury” of the current military conflicts in Iraq and Afghanistan, the US has responded with the development of a comprehensive system of care and treatment in both the Department of Defense (DoD) and the United States Department of Veterans Affairs (VA) Health Network (VHA Directive 2009–028).

The PolyTrauma (or TBI) System of Care System (PSC) specifically comprises four Polytrauma Rehabilitation Centers (PRC) which provide the most intensive medical and rehabilitation services, and Polytrauma Network Sites (PNS), and Polytrauma Points of Contact (PPOC) distributed across the 21 Veteran Health Networks or Veterans Independent Service Networks (VISNs) spread throughout the United States. The VA Health Network is the largest in the United States and includes approximately 169 major hospital centers and over 1,500 Community Based Outpatient Clinics (CBOCs).

These individuals and patients with TBI and mild TBI (mTBI) often exhibit co-morbid symptoms of Post...
Traumatic Stress Disorder (PTSD) (Donnelly, 2009), polytrauma or multiple physical injuries, pain and other psychosocial impairments in addition to the constellation of symptoms presented by TBI or mTBI.

Landmark studies such as the recent VA study of over 50,000 Service Members with TBI, polytrauma and PTSD have already helped to identify the most significant diagnostic indicators such as headache and other key symptoms, and to help practicing physicians to more effectively diagnose TBI and PTSD among these complex constellations of symptoms.

In order to complement the treatment and reintegration goals of the Veterans Affairs and DoD DVBIC healthcare systems (Sayer, N. 2009), the MindKnit Research Center, non-profit has built new partnership models which help expand and bridge collaborative research, treatment, and reintegration models between government healthcare and research programs, national Volunteer Portal systems, universities, community providers, and individual patients and families with TBI.

Additionally, the MindKnit Research Center and the Japan NRCD have developed a strong US-Japan Exchange over the last four years to address these challenges for Service Members and individuals with TBI, PTSD, and cognitive and psychosocial impairments to take advantage of shared lessons learned, medical protocols and research findings to benefit hundreds of thousands of individuals with Brain Injury in Japan, and 1.7 million persons in the US.

This Japan-US Exchange has shared clinical assessment and treatment protocols, community reintegration lessons-learned and scientific research which have been developed for both the DoD and the VA systems of care for these Service Members in the US, and by the Japan Higher Brain Dysfunction Society and the National Rehabilitation Center for Persons with Disabilities (NRCD) in Japan. Additionally research and treatment models from other disciplines—such as Telemedicine and Virtual Reality assessment for cognitive challenges such as Autism, and fMRI functional imaging and research into inhibition response and neurocognitive rehabilitation—will also be shared to benefit patients with TBI, PTSD, and psychosocial and cognitive and sensory impairments.

Significant new contributions to the field of TBI treatment, research, rehabilitation and reintegration are being developed within the new VA health systems of care which have been developed to meet the challenges of treatment and reintegration for the large population of returning Service Members with traumatic brain injury (TBI), mild TBI (Memorandum of the Surgeons General, 2009), PTSD, polytrauma, pain or Psychosocial impairments.

The majority of these Service Members are experiencing mild Traumatic Brain Injury (mTBI), and who are either active duty or separated veterans following combat operations.

The primary goals and outcomes for these inter-disciplinary teams and collaborative partnerships are now reaching into the community to focus on providing veterans with holistic healthcare solutions including successful college, work, community while maintaining a durable and full communications relationship to VA interdisciplinary healthcare provider teams.

These intergovernmental partnerships will focus on building adaptive strategies for patient-tailored interventions, utilizing joint teams comprising: VA Healthcare TBI and polytrauma teams of interdisciplinary experts to work with patients, building university leadership and faculty support teams, training student and volunteer mentors. These collaborative partners will be trained to help mediate social, cognitive, psychological, emotional and behavioral challenges, as well as physical/somatic challenges to help ensure that qualified Veterans with mTBI successfully integrate, compensate, and succeed in target environments in Universities.

These interdisciplinary VA healthcare teams, together with university leaders, community and non-profit
expert and national Volunteer Portal partners will help build and share interventions for in situ reintegration solutions for capable mTBI Veterans and patients to succeed in University settings, curricula and ultimately with career placement.

These shared protocols will be guided to develop reintegration protocols to help patients accommodate somatic or physical, psychosocial, emotional and behavioral symptoms and challenges.

These Supported Employment and reintegration protocols can be individualized for each patient guided by evidence-based clinical observations and patient symptoms using instruments such as the Neurobehavioral Symptom Inventory (NSI) (Cicerone, 1995). The NSI will help identify key disabling symptoms, including disruptions of: headache, memory loss, vision, balance and hearing, sleep, irritability, and cognition, among others and is utilized by both the VA Polytrauma System of Care and the Defense Veterans Brain Injury Center (DVBIC) (NSI DVBIC, 2009).

This presentation also summarized the results of a VA Compensated Work Therapy (CWT) and Psychosocial Rehabilitation (PSR) nationwide study which was presented at the US-Japan Exchange and Meeting of the Minds Conference in Columbia, Maryland.

This study was conducted by a team of VA neuropsychologists in conjunction with university faculty from across the US to investigate the design and development of teams, systems of care, processes and protocols for a nationwide Supported Education program focusing on qualified University students with mTBI.

This national VA Supported Education Study designed a nationwide program to handle hundreds of thousands of qualified Service Members produced key recommendations including: integrating VA neuropsychologists on campus, building collaborations with university faculty and administration, using student peer collaborators and potential collaborations with non-profit research and collaboration experts such as MindKnit Research, and utilizing the White House Volunteer Portal comprising 220,000 volunteers.

This Study and recommendations for a new nationwide program for VA Supported Education integrated with the VA Healthcare and community and university partners was commissioned for the Honorable Secretary of Veterans Affairs, Eric Shinseki.

The following case study describes a patient with mTBI returning to university in a Supported Education program. Dr. Noelle Berger, a neuropsychologist with the VA Compensated Work Therapy (CWT), Psychosocial Rehabilitation, and Polytrauma Network Center at the Bronx, New York VA Medical Center served as primary Supported Education coordinator and researcher.

This patient’s background includes the following: he is a 40 year old male Operation Iraqi Freedom Veteran, he is a member of the National Guard; he is married with an 8 year old son; he is the primary caretaker of his son; he is fully employed with the US government and he is studying business management at a local community college.

This veteran with mTBI faces challenges for university reintegration including the following issues. He sustained war-related medical injuries to include: Post Traumatic Stress Disorder (PTSD), mTBI; orthopaedic injuries including back, hip and shoulder injuries. He has incurred work-related injuries, primarily orthopaedic, to include shoulder injuries and a knee injury.

The patient has recently incurred marital difficulties relating to family separation during his remote deployment during wartime. He is now the primary caretaker for his 8 year old son while his wife is working full-time in a demanding job.

The VA interdisciplinary polytrauma team coordinated an interdisciplinary and cross-VA solution for this Supported Education of this veteran with mTBI.
First they arranged for funding for college studies and for college-related equipment (computer, printer, books) from the VA Vocational Rehabilitation and Employment (VRE) Program.

Next, the college provided remedial classes in math, reading comprehension and writing prior to the Veteran beginning college.

The VA Veterans Health Administration (VHA) provided adjustment counseling for PTSD (Hamblen, J., 2010), anger management group therapy, medical treatment for Traumatic Brain Injury (TBI) and orthopaedic injuries including the patient’s back and shoulder injuries.

The outcome of this patient was positive under this Supported Education protocol with integrated healthcare, and university services.

The Veteran has successfully completed 2 semesters of college with a B+ average. The Veteran has successfully overcome one of his biggest challenges to reintegration by using the anger management training and skills provided by the healthcare system to avoid conflicts with other students. The veteran has remained in school despite suffering another work-related injury (Berger, 2010).

**Conclusion**

This research and clinical practice exchange across Japan and the US for TBI, mTBI and related challenges such as polytrauma, PTSD and cognitive challenges offer the opportunity to harness the US Veterans Affairs (VA) Health networks and research systems as well as the Department of Defense (DoD) Defense Veterans Brain Injury Center (DVBIC), the National Institutes of Health (NIH), the Japan National Rehabilitation Center for Rehabilitation for Persons with Disabilities (NRCD), the Japan Higher Brain Dysfunction Society, and non-profits experts such as the MindKnit Research Center.

New initiatives such as the US Veterans Affairs Supported Education initiative to return hundreds of thousands returning Service Members with mild TBI qualified to university studies and then careers may offer new research and reintegration practice from these long-term, high quality healthcare outcomes to be shared across the millions of impaired individuals with TBI throughout Japan and the United States.

National partnerships between the VA Polytrauma and TBI teams (across 169 facilities), university faculty and administrators, non-profit experts such as MindKnit Research Center and the Brain Injury Association of America and the US White House Volunteer Portal with 220,000 volunteers will offer new models for Supported Education at the university level with integrated healthcare teams of TBI and polytrauma specialists.

This US-Japan Exchange for TBI, PTSD and Cognitive Disabilities offers significant benefits for knowledge exchange and the potential to shape joint efforts for research, diagnosis, clinical treatment, rehabilitation and long-term reintegration of potentially hundreds of thousands of Veterans with mTBI, PTSD, and polytrauma injuries, and to be shared with approximately 1.7 million persons in the US (Faul, M. Xu, 2010) and the hundreds of thousands of persons with TBI in Japan.

Landmark studies such as the recent VA study of over 50,000 Service Members with TBI have already helped to provide significant diagnostic indicators for practicing physicians to diagnose TBI. Potential new research areas in areas such as neural substrate mapping, neurocognitive rehabilitation, response inhibition, functional imaging such as fMRI and DTI will help to shape diagnostic, clinical treatment, rehabilitation and reintegration in to civil society thereby improving lifelong outcomes for these patients with mTBI, PTSD, polytrauma and cognitive disabilities.
On behalf of the US-Japan Exchange for TBI, PTSD and Cognitive Disabilities, we look forward to continuing this vibrant and valuable knowledge exchange for many years to come.

References


