DEFENSE AND VETERANS BRAIN INJURY CENTER | 2013 ANNUAL REPORT

DVBIC
DEFENSE AND VETERANS BRAIN INJURY CENTER

SERVING THOSE WHO SERVE

DVBIC's mission is to serve active duty military, their beneficiaries, and veterans with traumatic brain injuries through state-of-the-art clinical care, innovative clinical research initiatives and educational programs, and support for force health protection services.

Cover photo: U.S. Army soldiers with Kilo Troop, 3rd Squadron, 2nd Cavalry Regiment, fire their M4 carbines during a mission rehearsal exercise (MRE) at the Joint Multinational Readiness Center in Hohenfels, Germany, March 13, 2013. U.S. Army photo by Spc. Tristan Bolden

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"As we carry out our mission to serve active duty military, their beneficiaries, and veterans with traumatic brain injuries (TBI), we must never forget that everything we do is aimed at providing the very best care for those who serve us so bravely."

- COL Sidney Hinds II, U.S. Army
DVBIC National Director

LETTER FROM THE NATIONAL DIRECTOR

COL Sidney Hinds II,
U.S. Army,
DVBIC National Director

Dear Colleagues,

In July 2013, I was entrusted with the responsibility of serving as National Director of the Defense and Veterans Brain Injury Center (DVBIC). It is a great honor to serve those who have served. Let us never forget the sacrifices of the men and women of our Armed Forces who deserve our best efforts. As we carry out our mission to serve active duty military, their beneficiaries, and veterans with traumatic brain injuries (TBI), we must never forget that everything we do is aimed at providing the very best care for those who serve us so bravely.

As a DVBIC team, we serve in partnership with Department of Defense (DoD), Veterans Affairs (VA), Public Health Service medical specialists and non-governmental TBI subject matter experts. Together we provide state-of-the-science clinical care, innovative clinical research initiatives and educational programs, and support for military health services.

We listen to our stakeholders to come up with clinical recommendations and educational tools to give our DoD and VA medical beneficiaries the most current diagnostics and best treatments available. Our research and clinical recommendations not only benefit the military health service system, but also contribute to the civilian medical profession's body of knowledge.

At 16 sites supported by a Washington, D.C-area headquarters, DVBIC treats, supports, trains and monitors service members, veterans, family members and providers who have been, or care for those who are, affected by TBI.

LETTER FROM THE NATIONAL DIRECTOR

COL Hinds consults with DVBIC staff during visit to Darnall Army Medical Center in San Antonio, Texas

We are proud of our work and this year some of our accomplishments include:

- Published a TBI Resource Guide on DVBIC's website that shares resources available to support Service members, Veterans and their families following TBI
- Hosted the TBI Global Synapse, "A Summit Without Borders," a three-day online educational seminar for 1,200 military health professionals to educate them on the latest treatments for TBI.
- Published results of "Test-retest reliability of four computerized neurocognitive assessment tools" in *Archives of Clinical Neuropsychology* based on the first phase of a head-to-head study of neurocognitive assessment tools (NCAT) at Ft. Bragg, N.C.
- Published 40 other medical peer-review studies related to the detection, initial treatment and ongoing care for TBI.
- Released "Neuroimaging following mTBI in the Non-deployed Setting" and "Assessment and Management of Visual Dysfunction Associated with mTBI" clinical recommendations.
- Published "Back to School: Guide to Academic Success After a Traumatic Brain Injury," an electronic resource to help service members and veterans seeking higher education take advantage of earned benefits and succeed in their efforts.
- Initiated feasibility study on neurofeedback technology for persistent post-concussive symptoms in soldiers.
- Developed TBI 201 – Overview of TBI for Military Health Care Providers, an interactive web-based educational platform at the request of the Services TBI Program Directors to fulfill training requirements for medical providers.
- Hosted 10 webinars on clinical topics related to TBI treatment for medical professionals.
- Launched a Telehealth and Technology Web Resource Locator (TTWRL) resource to support discharge planning and ongoing care for TBI patients.
- Provided daily care to patients in conjunction with our 16 MTF and VA TBI sites.

As we strive for an even better collaborative and productive 2014, I want us to remember those we serve. They are at the heart of everything we do.

With my humblest thanks and deepest respect,

COL Sidney Hinds II, U.S. Army
National Director, DVBIC

INTRODUCTION

The Defense and Veterans Brain Injury Center (DVBIC) is a part of the U.S. Military Health System. Specifically, it is the traumatic brain injury (TBI) operational component of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE). Established in 1992 by Congress, our mission is to serve active duty military, their beneficiaries, and Veterans with traumatic brain injuries through state-of-the-art clinical care, innovative clinical research and educational programs, and support for force health protection services. DVBIC fulfills its mission through three operational areas; clinical affairs, research, and education. This report summarizes DVBIC's 2013 accomplishments in each area.

CLINICAL AFFAIRS

DVBIC's Clinical Affairs Division provides clinical guidance and tools built on state-of-the-science TBI knowledge to clinical care providers, and clinical support to service members, veterans, and their families. The division has four offices: Surveillance, Clinical Practice/ Clinical Recommendations, Care Coordination, and Outcomes and Assessments. In achieving its mission, the division works in partnership with the Service TBI program directors, the National Intrepid Center of Excellence, the VA, and others.

Together with its partners, DVBIC's Clinical Affairs Division develops and supports the implementation of clinical standards to maximize recovery and functioning,

U.S. Air Force Master Sgt. Jennifer Allara, 436th Civil Engineer Squadron, Explosive Ordinance Disposal team leader, received treatment in February 2013 for symptoms of mTBI and PTSD at the National Intrepid Center of Excellence in Bethesda, Md. U.S. Air Force photo by Tech. Sgt. Chuck Walker

CLINICAL AFFAIRS

creates standardized approaches to assessments, and collects, analyzes, and disseminates TBI-related population health data to better define the scope of the TBI population and guide research and policy. They also provide direct care and support to service members and veterans who have sustained a TBI through clinical care resources at Military Treatment Facilities and through field-based Regional Care Coordinators (RCCs).

In 2013, the Clinical Affairs Division continued to advance the state of TBI care. During the year, the division released several important new clinical recommendations, expanded data sources and capabilities to improve surveillance, and selected instruments to capture mild TBI outcomes throughout the Military Health System. The division also continued to provide vital clinical care and care coordination around the world through its clinical care and care coordination teams.

Regional Care Coordination in 2013

In 2013, DVBIC's Regional Care Coordinators coordinated the care of more than 650 active duty service members and veterans who experienced TBIs while serving in support of Operations Enduring Freedom, Iraqi Freedom, and New Dawn. They also conducted 1,256, follow-ups to help guide and support them in accessing the care they needed.

RCCs completed 651 intakes and 1256 follow-ups in 2013:

3-month follow-ups	375
6-month follow-ups	272
9-month follow-ups	191
12-month follow-ups	169
18-month follow-ups	108
24-month follow-ups	94
Non-standard follow-ups	47

★ 2013 Achievements ★

Identifying, Evaluating, and Disseminating Best Practices: New Clinical Recommendations and Resources

- *Developed and released new Clinical Recommendations on Visual Dysfunction following mTBI*
- *Developed and released new Clinical Recommendations on Neuroimaging following mTBI*
- *Released TBI resource compendium and Telehealth and Technology Web Resource Locator (TTWRL) to assist TBI case managers in the MHS*

Sharing of Best Practices

- *Held expert working groups to support the development of CR's for Sleep Disturbances after mTBI as well as Neuroimaging in mTBI*

Defining the Scope of the TBI issue: TBI Surveillance

- *Broadened data source partnerships, establishing data use agreement with TMA*
- *Expanded surveillance capabilities with internal and external stakeholders*
- *Developed major reports to guide and influence staffing and policy, to include the Event Monitoring Summaries, Medical Encounters Report, TBI World Wide Numbers report, and others*

Defining TBI Outcomes

- *Analyzed concussion heath care utilization data to further understand current practice for concussion care in the Military Health System with the goal to inform development of standardized concussion care health outcome domains*
- *Selected two Core instruments to be used to capture mild TBI outcomes throughout MHS*
  - *Neurobehavioral Symptom Inventory (NSI)*
  - *Patient Global Impression of Change (PGIC)*

RESEARCH

Vice Chief of Staff for the Army Gen. John F. Campbell examines Super Bowl rings on display at NFL Headquarters in New York, N.Y., June 13, 2013. The NFL and the Army have partnered for the past few years to share research on TBI. U.S. Army photo by Sgt. Christopher Tobey

DVBIC's Research Division advances the scientific understanding of Traumatic Brain Injury (TBI) and its treatment through a multi-center network of Military Treatment Facilities and Veterans Affairs Medical Centers. The resulting scientific knowledge drives approaches to clinical diagnosis and care that improve outcomes for those impacted by TBI. The division conducts, guides, and supports research across the DVBIC network through four offices: Research Activities, Clinical Translation, Program Evaluation, and Quality Assurance. DVBIC's research portfolio spans a broad range, from congressionally-mandated longitudinal population studies to investigator-initiated clinical research. In 2013, DVBIC had over 65 active research studies in the portfolio.

RESEARCH

Also in 2013, the division's responsibilities expanded to include TBI program evaluation and clinical translation. Clinical translation scans published literature and assesses the results of completed studies in the DoD TBI portfolio to identify findings that can inform the development or update of clinical recommendations, catalyzing the translation of promising clinical research findings to clinical practice. TBI program evaluation focuses on the development of a framework for the evaluation of internal DVBIC programs and processes, and supports DCoE's evaluation of DoD TBI programs.

Marine Corps Sgt. Kirstie Ennis of Milton, Fla., takes off at the start of the women's 10k upright race during the Warrior Games at the U.S. Air Force Academy, Colorado Springs, Colo., May 2013. Ennis sustained a TBI and broken ankle that resulted in limb salvage while conducting counterinsurgency operations in Afghanistan. Marine Corps photo by Lance Cpl. Corey Dabney

★ 2013 Achievements ★

Publications with wide impact

Risk factors for postconcussion symptom reporting following traumatic brain injury in U.S. Military Service Members.

Lange, R.T., Brickell, T.A., French, L.M., Ivins, B., Bhagwat, A., Pancholi, S., Iverson, G.L. (2013). Risk factors for postconcussion symptom reporting following traumatic brain injury in U.S. Military Service Members. Journal of Neurotrauma, 30(4), 237-46.

Current recommendations for the diagnosis and treatment of concussion in sport: A comparison of three new guidelines.

West, T.A., Marion, D.W. (2013). Current recommendations for the diagnosis and treatment of concussion in sport: A comparison of three new guidelines. Journal of Neurotrauma.

The effect of hyperbaric oxygen on persistent postconcussion symptoms.

Cifu, D.X., Hart, B.B., West, S.L., Walker, W., Carne, W. (2013). The effect of hyperbaric oxygen on persistent postconcussion symptoms. Journal of Head Trauma Rehabilitation.

Significant Studies Initiated

- *Pilot study on neurofeedback at Fort Carson*
- *Obtained a data-use agreement from the Defense Health Agency and approval from IRB for a study to estimate the number of service members with multiple TBIs*
- *Initiated a feasibility study at the Richmond VA to investigate olfactory and taste dysfunction in association with mild TBI during deployment*

RESEARCH

U.S. Army Spc. Marcos Fernandes shares his experiences with surgeons general of the Army, Navy, Air Force and the United Kingdom at the Craig Joint Theater Hospital's concussion care center at Bagram Airfield in Parwan province, Afghanistan, April 17, 2013. Fernandes was treated for a concussion after a round ricocheted off his helmet during a firefight. U.S. Army National Guard photo by Spc. Mark VanGerpen

★ 2013 Achievements ★

Congressionally Mandated Studies

Cognitive Rehabilitation Effectiveness for mild TBI

The Study of Cognitive Rehabilitation Effectiveness for mild TBI (SCORE), is evaluating the effectiveness of cognitive rehabilitation in OIF/OEF service members with a history of mild traumatic brain injury and persistent (three to 24 months post-injury) cognitive complaints. In 2013, the study reached 89% of its target enrollment and maintained a retention rate of 75%. DVBIC also received additional funding to support data processing and analysis for a parallel imaging study called iSCORE. iSCORE is investigating longitudinal structural and functional imaging changes over time that correlate with outcomes following a trial of cognitive rehabilitation in mild TBI.

Head to Head

The Head-to-Head study is conducting a psychometric comparison of brief computerized neurocognitive assessment tools by measuring the test-retest reliability of the tools, comparing them to traditional neuropsychological testing, and assessing their sensitivity and specificity in detecting cognitive impairments in soldiers who recently sustained mild TBIs. In 2013, the study continued recruitment and data analysis efforts and published a major manuscript on the results of the "Head to Head" test-retest reliability in the professional journal Archives of Clinical Neuropsychology.

15 Year

The 15-year study is a long-term longitudinal study on TBI in OEF/OIF service members and veterans. The study is developing a data repository of clinical and health data and bio specimens collected from injured and non-injured service members. It documents long-term outcomes over 15 years to improve understanding of TBI in a military cohort.

EDUCATION

DVBIC's Education Division develops and delivers TBI education programs built around state-of-the-science knowledge. The division has three offices: Education Materials, Clinical Education and Training, and Education Outreach. These offices provide members of the military, veterans, and their families, supporters, and care providers with the knowledge they need to prevent or recover and reintegrate from TBI's. The division's multimedia education products deliver high quality, clinically relevant education to clinicians and provide education about the means of prevention, causes, and care of TBI to the broader military community. DVBIC's network of regionally-based education coordinators provides education and conducts outreach to service members, veterans, and their families, supporters, and care providers around the world.

U.S. Army Spc. In Kim prepares for the modified Army Physical Fitness Test (APFT) during the Spartan Best Squad Competition at Joint Base Elmendorf-Richardson, Alaska, April 3, 2013. U.S. Army photo by Sgt. Eric-James Estrada

In 2013, the division made improvements in product development capabilities and increased the reach of its education products. DVBIC invited additional subject matter experts (SMEs) into the network to improve product quality.

In addition, a redesign of the materials creation process increased product development efficiency. A successful webinar series increased awareness of TBI and provided resources to providers, patients, and families. These improvements, supported by DVBIC's continuing investment in and promotion of online resources, resulted in a dramatic increase in the number of site visits and material downloads from the DVBIC website.

EDUCATION

The Education Division also leveraged technology and increased collaboration with partners to deliver state-of-the-science knowledge to a greater number of DoD and VA clinicians. DVBIC substituted its Annual TBI Summit with a face-to-face virtual learning experience, DVBIC's TBI Global Synapse. The event, held live from August 20 to 22 at CapGemini studios in Washington, D.C., reached thousands of DoD/VA providers. DVBIC also collaborated with the USAF to coordinate, assist, and provide content for Project ECHO, an innovative pilot program that the US Air Force modeled after an academic program to connect providers located in isolated and/or under served areas. Providers and their care teams become part of a large knowledge network and experience real-time transfer of knowledge and best practices.

Regional Education Coordination in 2013

In 2013, DVBIC's 16 regional education coordinators continued in their role as outreach TBI experts. They conducted TBI awareness presentations for service members at pre- and post-deployment sessions and at various March Brain Injury Awareness activities at 14 DVBIC sites around the country. They also remained available to help all service members and their families requiring information on TBI.

★ 2013 Achievements ★

New Provider Education Products

- *Neuroimaging Following mTBI in the Non-Deployed Setting: clinical recommendation, clinical support tool, and training slides*
- *Six training slide decks on the updated MACE and CMAs to reflect changes made by DODI 6490.11*
- *TBI 201: Overview of TBI for Military Health Care Providers (interactive training course)*

Provider Education Services

- *Produced a 22-hour virtual Continuing Education program TBI Global Synapse: A Summit Without Borders. Eight hundred providers participated, with 500 receiving CE credits*
- *Produced eight webinars and trained 3,200 military, veteran, and civilian health care providers*
- *Developed "Deployment-Related Traumatic Brain Injury and Co-Occurring Conditions" (online training course for providers)*

Service Member, Veteran, and Family Education Products

- *Launched a back-to-school guide and multimedia website to help service members and veterans with ongoing TBI symptoms cope with the challenges of returning to school*

Service Member, Veteran, and Family Education Services

- *Provided or participated in 785 educational briefs, presentations and events that reached a total audience of over 57,000*
- *Distributed approximately 530,000 TBI educational resources*

NETWORK SITES

Marine and Sailor Concussion Recovery Center, Camp Lejeune

The DVBIC team at Camp Lejeune works in the Marine & Sailor Concussion Recovery Center. This DVBIC site focuses its work on clinical care, care coordination, and education outreach. The clinical care team provided care for approximately 2,000 service members in 2013. The regional care coordinator provided support to TBI patients and their families to ensure their successful navigation of the military health system. The Camp Lejeune RECs reached 53,170 people including service members, veterans, line leaders, providers, military family members, local university students, and other members of the surrounding community. They also wrote several TBI related articles published in base and local newspapers and held monthly two-week (70 hour) education therapy groups with healthcare providers for service members diagnosed with mTBI.

Carl R. Darnall Army Medical Center, Fort Hood

DVBIC Fort Hood serves the continental United States' largest deploying base. The program works in conjunction with the TBI Clinic in providing direct and indirect patient care to the soldiers as well as providing education to active duty, National Guard, Reserve, family members, and clinical staff. The site supports general DVBIC research in conjunction with SAMMC. The DVBIC regional education coordinator continues to lead annual and pre-deployment concussion/mTBI training for troops at Fort Hood. These efforts reached 15,708 individuals this year.

Camp Pendleton

DVBIC Camp Pendleton works collaboratively with the Office of Neurotrauma/NAVMED West, Navy Hospital Camp Pendleton Concussion Clinic, the Warrior Recovery Center, and 1MEF. DVBIC Camp Pendleton provides improved access to care for Marines and provides them with clinical service, care coordination, and education while participating in TBI research. It provides an array of clinical services including TBI screening, evaluation and patient/family education, neuropsychological assessment, duty status determination, and consultation services. The regional care coordinator assists service members and veterans with TBI as they transition from the Department of Defense to the VA Health Care System. The research team continues to work on innovative studies aimed at understanding topics such as the neurobehavioral and cognitive impact of mTBI, anger, and aggressive behavior in the military after TBIs.

Evans Army Community Hospital, Fort Carson

DVBIC Fort Carson resides within the Evans Army Community Hospital's Warrior Recovery Center (WRC) and Soldier Readiness Center (SRC). Fort Carson is a large army post with rapid deployment cycles, and is an ideal site for extending DVBIC's mission. DVBIC supports this site with regional education coordinators, a regional care coordinator and research staff. RECs were able to reach out to more than 16,000 participants in educational presentations and events. DVBIC at Fort Carson provided clinical expertise, database, and statistical support to QI initiatives through the Outcome Measures Project. The research teams at the WRC and SRC examined post-deployment TBI and PTSD in collaboration with the Denver VA Medical Center, trialed interactive metronome technology's ability to cope with cognitive impairment following blast-related TBI, and completed a study on deployment-related mTBI in soldiers returning from OEF/OIF.

NETWORK SITES

Naval Medical Center San Diego (NMCSD)

DVBIC at Navy Medical Center San Diego (NMCSD) works collaboratively with the Office of Neurotrauma/NAVMED West and TBI Clinical Services at NMCSD to provide an array of clinical services, including TBI screening, evaluation and patient/family education, neuropsychological assessment, duty status determination, and consultation services. DVBIC at NMCSD also conducts state-of-the-science research examining various aspects of TBI, such as mechanisms of injury from blasts and the relationships of cumulative blast exposure and interval of blast exposure to CNS pathology and neurocognitive function. They have continued to drive DVBIC's congressionally mandated studies while also developing, researching, and publishing their own TBI related protocols and manuscripts. DVBIC at NMCSD also coordinates care for TBI patients and provides extensive educational services. The regional care coordinator maintained a large caseload throughout the year. Their work included facilitating a weekly treatment group at VA La Jolla for caregivers and veterans. The regional education coordinator gained visibility throughout the year by attending SME presentations and doing site visits throughout the region, meeting with more than 6,800 service members, providers, veterans, and family members, and distributing more than 12,000 educational handouts.

San Antonio Military Medical Center (SAMMC)

San Antonio Military Medical Center (SAMMC) and Wilford Hall Ambulatory Surgical Center have been involved in the TBI initiative since DVBIC's inception by Congress in 1991. They participate in clinical investigation research, ensure clinical care, and develop educational programs. In 2013, the regional education coordinator reached more than 5,000 service members, families, providers, veterans, and other stakeholders through delivered and facilitated events, and staffing booth at events that reached targeted groups. The regional care coordinator completed 278 patient follow-ups, ensuring that patients have access to the care and resources they need. In 2013, SAMMC research staff successfully recruited participants for the Study of Cognitive Rehabilitation Effectiveness (SCORE!) and Imaging Study of Cognitive Rehabilitation Effectiveness (iSCORE!). Site researchers are continuing to build their research portfolios to improve the lives of those who have suffered a TBI. The clinical care team screened 1,183 patients at the inpatient, outpatient, and post-deployment settings and provided treatment on 774 occasions.

Fort Bragg

DVBIC Fort Bragg serves the largest beneficiary population in the Army and functions as a part of the Womack Army Medical Center Department of Brain Injury (DBIM) and undertakes clinical research, ensures quality clinical care, and develops educational programs in coordination with other DVBIC sites and locations. Clinical research staff collaborated with DVBIC headquarters and other hospitals and agencies to conduct research in numerous studies. This work included the completion, acceptance, and publication of a manuscript on Phase I of the Head-to-Head Study. In 2013, the clinical care team assisted nearly 500 individuals, while the regional care coordinator served as single point of contact to monitor patient progress and provide expert consultation. The regional education coordinator reached nearly 4,500 service members, veterans, families, providers, and other stakeholders at events such as WAMC DBIM's TBI awareness and cultural change promotion, which brought together military, business, and sport leaders to hold a concussion care forum for Fort Bragg soldiers.

NETWORK SITES

Landstuhl Regional Medical Center

Landstuhl Regional Medical Center (LRMC) is the only Level I Trauma Medical Treatment Facility outside the continental U.S. and the largest medical facility in the European Regional Medical Command. The mission of the TBI Screening Team at Landstuhl Regional Medical Center is to ensure all military personnel, civilian (DoD and contractors), and coalition military personnel who are medevac'd from theater for OND/OEF will undergo TBI screening before returning to duty or being sent back to the United States. The Intensive Rehabilitation TBI Program at LRMC aims to help patients return to duty and/or maximize their quality of life and recovery of function. To achieve this end, team members evaluate patient needs and work with the patient to develop a comprehensive plan tailored to the patient. In cases where the patient resides on a remotely located post or base in Europe, that patient is transported to LRMC where they are housed in the Medical Treatment Detachment (MTD), a no cost TDY, and treatment is provided. Aggressive treatment involving Vestibular Physical Therapy, Occupational Therapy, TBI optometry, Behavioral Health, Neurology and Physical Medicine, and Rehabilitation are incorporated to meet the needs of the patient. These treatments are primarily housed under one roof called the Rehabilitation Center or TBI Clinic. Regular team meetings allow real-time adjustment to care, focusing efforts on returning the patient to duty.

Joint Base Elmendorf-Richardson (JBER)

The Joint Base Elmendorf-Richardson Mild Traumatic Brain Injury Clinic is DVBIC's sole Air Force – based TBI facility. DVBIC JBER uses state-of-the-science diagnostic and rehabilitative equipment and complementary interventions such as acupuncture and restorative yoga to provide diagnostic and care services to a population of more than 12,000 active duty service members and retirees as well as their dependents. The site includes clinical and education staff. In 2013, the regional education coordinator reached 3,350 service members, families, veterans, providers, and community members by sharing information about TBI prevention, screening, and care.

Fort Belvoir Community Hospital, Fort Belvoir

The DVBIC team at Fort Belvoir Community Hospital TBI Department assists with the interdisciplinary evaluation of service members who are suspected to have a TBI. The site houses clinical care, care coordination, and education staff. In addition to training service members and their families, education staff reached out to the community through participation in health fairs, Yellow Ribbon events, and conferences in the area. Care coordination staff worked with TBI patients who have received care at the clinic to survey current resources and family outreach capabilities, and seek improvements by constantly tracking and tailoring programs for a patient-centered experience. On July 22, 2013, the Intrepid Spirit opened its doors to patient care. This new facility, also referred to as the Intrepid Spirit One, will further support the interdisciplinary, holistic TBI treatment model established by the DVBIC site director at Fort Belvoir Community Hospital and offer continued care for wounded warriors and families with the full spectrum of mild to severe TBI.

NETWORK SITES

Walter Reed National Military Medical Center (WRNMMC)

The Walter Reed National Military Medical Center undertakes clinical investigative research, ensures clinical care, and develops educational programs in coordination with other DVBIC sites/locations. In 2013, the WRNMMC research team enrolled patients in existing studies while developing innovative protocols and collaborative efforts. They also facilitated the reception of the 15 Year Study personnel and equipment into the WRNMMC footprint. The clinical team continues to screen and evaluate new TBI patients while regional care coordinators track patients through the continuum of care. In 2013, the Brain Fitness Centers at WRNMMC and Fort Belvoir Community Hospital doubled their 2012 numbers from 390 to 793 patients served. The regional education coordinator has engaged in outreach opportunities outside of the hospital and surrounding community to educate service members, families, providers, and other key stakeholders. In 2013, the REC reached 10,506 service members, veterans, providers, and family members.

VA Medical Center – Richmond

Richmond DVBIC is located within the Richmond VA Medical Center (RVAMC), a VISN-6 tertiary care center that offers a range of diagnostic and therapeutic services and serves as a national referral center for specialty care in several programs. The RVAMC is also a VHA Polytrauma Center, receiving and treating returning service members and veterans with multiple traumatic injuries sustained in the course of the current armed conflicts. The site has clinical research, care coordination, and education staff. The research core within Richmond DVBIC has continued to screen and recruit for all active protocols. The regional care coordinator had an active caseload of 89 individuals throughout the year, conducting initial evaluations and follow-up consultations at 3-month intervals for two years. The regional education coordinator provided support to over 900 service members, veterans, DoD and civilian providers and family members, through presentations and other events across their catchment area.

VA Medical Center – Palo Alto

DVBIC Palo Alto has been a fundamental part of the success of VA Palo Alto Health Care System. The site continues its clinical investigative research by supporting ongoing research protocols, ensuring continued care coordination integrated with the Polytrauma Systems of Care (PSC) OEF/OIF Program, and developing educational programs and outreach in coordination with other DVBIC sites, the VA PSC, and local community centers. In 2013, the staff collaborated with the PSC to do innovative studies, including one focused on women and TBI. The education team developed and delivered educational opportunities and participated in the Brain Injury Associations for California, Oregon, and Washington, as well as several local groups addressing veterans and brain injury. The regional care coordinator provided support and assistance to the VA PNS and OEF/OIF/OND IntelaCare Project, an innovative healthcare technology project developed for veterans who have sustained TBIs, and had an active caseload of 52 at year's end.

NETWORK SITES

VA Medical Center - Minneapolis

Minneapolis DVBIC is located within the Minneapolis Veterans Affairs Health Care System (MVAHCS), a DVA VISN-23 tertiary care referral center and location of one of the five DVA comprehensive polytrauma centers. The Minneapolis VAHCS undertakes clinical investigative research, care coordination, and education. The research staff has worked to recruit participants for the TBI Model Systems and the Longitudinal Neurotrauma, Transcranial Direct Current Stimulation for Cognitive Control and CTF Protocol studies. The regional education coordinator based at Minneapolis DVBIC conducted educational outreach throughout a nine-state catchment area. The regional care coordinator provided assistance accessing TBI, VA, and civilian provider services to service members, reservists, veterans, and their families and ran teleconferences and presentations to support and promote the program.

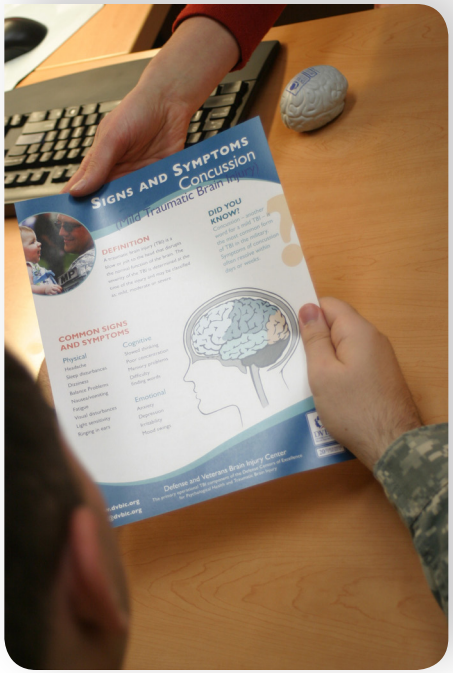
VA Medical Center – Tampa

James A. Haley Veterans' Hospital houses DVBIC Tampa. The hospital is an acute and tertiary medical center that serves the largest number of veterans in the nation. The Spinal Cord Injury, Amputee, and Traumatic Brain Injury programs provide the highest quality of care in the VA by their designation as Clinical Centers of Excellence. The site undertakes clinical investigative research, ensures clinical care, and develops educational programs in coordination with other DVBIC sites/locations. Research staff have created and implemented an advanced access database to identify for enrollment in future studies. The regional education coordinator reached nearly 1,700 service members, civilian and DoD care providers, veterans, and family members through Yellow Ribbon events, REC delivered and facilitated events, and other occasions. The regional care coordinator primarily provided regular follow-up to OEF/OIF/OND service members or veterans who screened positive for TBI regardless of injury location. This follow-up included assessments and facilitating connections to direct service providers who could meet the patient's needs.

VA Medical Center – Boston

The VA Boston Healthcare System (VABHS) provides inpatient and outpatient services to veterans at three campuses and five free-standing clinics. Veterans are evaluated for TBI through our outpatient polytrauma network site. Post-acute polytrauma patients can be managed in our Comprehensive Integrated Inpatient Rehabilitation Program. DVBIC Boston focuses on conducting research on TBI assessment, treatment, and functional outcomes. The site also offers physical medicine and a range of rehabilitative services to veterans with TBI. Current research efforts focus on areas of cognitive and emotional functioning, and post-deployment and community reintegration.

RESOURCES



A soldier receives important information on the signs and symptoms of a concussion during a consultation at the Traumatic Brain Injury clinic at Fort Belvoir Community Hospital. U.S. Army photo by Carlson Gray

Order & Print Materials

Acute Concussion Educational Brochure

Acute Stress Reaction Fact Sheet

Army 2013 Brain Injury Awareness (BIA) Posters

Assessment and Management of Dizziness Associated with mTBI Clinical Recommendations, Reference Card, and Training Slide Deck

Assessment and Management of Visual Dysfunction Associated with mTBI Algorithm Card, Clinical Recommendations, Patient Tool, and Training Slide Deck

Back to School Guide to Academic Success After Traumatic Brain Injury

Complementary and Alternative Medicines (CAM), Modalities and Interventions Fact Sheet

Concussion Management Algorithm (CMA) Pocket Cards and Wallet Cards

Concussion Management Guidance for Garrison Setting (ARMY EXORD 2013)

DVBIC Fact Sheet

Family Caregiver Fact Sheets and Postcards

Family Caregiver PSA

Family Needs Product Line - Addressing Family Needs

Family Needs Product Line - Taking Care of Yourself While Caring for Others

Family Needs Product Line - Talking to Children About Mod/Sev TBI

Family Needs Product Line - Talking to Children About TBI

Concussion/mTBI Information
For Use >1 Month After Injury or at Post Deployment Health Assessment (Not for Acute Period)

HEADS Cards

HEADS Posters

ICD-9 Coding Fact Sheet and Pocket Card

Indications and Conditions for In-Theater Post-Injury Neurocognitive Assessment Tool (NCAT) Testing

Marine 2013 Brain Injury Awareness (BIA) Posters

Military Acute Concussion Evaluation (MACE) Pocket Cards and Wallet Cards

RESOURCES

mTBI Pocket Guide

Neurocognitive Assessment Tool (NCAT) CR Fact Sheet

Neuroendocrine Dysfunction (NED) Screening Post mTBI Clinical Recommendations, Pocket Card, and Training Slide Deck

Neuroimaging Following mTBI in the Non-Deployed Setting Clinical Recommendations, Support Tool (Reference Card), and Training Slide Deck

Signs and Symptoms Fact Sheet (Available in English, Estonian, French, Georgian, German, Italian, Polish, Romanian, and Spanish)

Symptom Management Fact Sheet - Head Injury and Dizziness

Symptom Management Fact Sheet - Headache/Neck Pain

Symptom Management Fact Sheet - Healthy Sleep

Symptom Management Fact Sheet - Improving Memory

Symptom Management Fact Sheet - Mood Changes

TBI Consult Cards

Traumatic Brain Injury (TBI) Mod/Sev Fact Sheet

Web Products

6 Free Military TBI Smartphone Apps for Treatment & Recovery (Brain Injury Rehabilitation)

20 Life-Changing Android Apps for People with Brain Injury (Assistive Tech)

27 Life-Changing iPhone and iPad Apps for People with Brain Injury

About Traumatic Brain Injury (Brain Basics Slideshow)

About Traumatic Brain Injury (Leading Causes of Traumatic Brain Injury)

mTBI Pocket Guide Mobile Application

TBI 201: Overview of TBI for Military Healthcare Providers

Web-based Mild TBI Case Studies

Assessing and Managing Fatigue and Sleep Dysfunction

Assessing and Treating Dizziness and Disequilibrium

Assessing the Individual with Persistent Headaches

Assessing the Individual with Persistent Symptoms

Cognitive and Behavioral Symptom Management

Diagnosing Mild Traumatic Brain Injury

DoD ICD-9-CM Coding Guidance for Traumatic Brain Injury

Management of Hearing and Vision Problems Following mTBI

Mild Traumatic Brain Injury: Putting it All Together Part 1 & 2

Mild Traumatic Brain Injury: Return to Duty/Activity

Use, Administration, and Interpretation of the MACE

RESOURCES

Webinars

The Battle Within: TBI, PTSD, and Violence Risk
Speaker: Dr. Cynthia Boyd, DVBIC-NMC, San Diego

Post-traumatic Headaches in the Military Population: Initial Management and Alternate Approaches
Speakers: Dr. Marc S. Husid and Dr. John L. Rigg, Neuroscience and Rehabilitation Center, Dwight D. Eisenhower Army Medical Center, Fort Gordon, GA

Overview of Imaging Techniques for TBI from Current Standards to Advanced Techniques
Speaker: LTC Gerald York, M.D., Director of Research, Radiology, Co-Site Director, DVBIC - San Antonio Military Medical Center, TX

Intimacy: Sex, Drugs, and TBI
Speaker: Sally P. Cummings, Ed.D., FNP, Concussion Care Clinic, Department of Brain Injury Care, Womack Army Medical Center, Fort Bragg, NC

Acute Severe TBI: Lessons Learned and Prospects for Future Treatment
Speaker: Donald W. Marion, M.D., MSc. Senior Clinical Consultant, Clinical Affairs, DVBIC

Advancing TBI Care for Veterans: Updates from the Polytrauma System of Care
Speakers: Alison Cernich, Ph.D., ABPP, Board Certified in Clinical Neuropsychology, Acting Deputy Director for Veterans Affairs for DCoE; Treven Pickett, PsyD, ABPP, Board Certified in Rehabilitation Psychology, Acting VA Senior Liaison for TBI for DCoE

Assessment of Effort and Validity in Neuropsychological Testing: The Importance of Determining Symptom Credibility
Speakers: Wesley R. Cole, Ph.D., Senior Scientific Director, DVBIC and Neuropsychologist, Department of Brain Injury Medicine, Womack Army Medical Center; Robert Stegman, Ph.D., Clinical Neuropsychologist, Department of Brain Injury Medicine, Womack Army Medical Center, Fort Bragg, NC

ICD-9-Clinical Modification Coding Guidance for TBI within the MHS
Speakers: Lt. Tracie Lattimore, R.N., MSN, N.P.-C N.C., USNR, Deputy Director, Navy Traumatic Brain Injury Programs within Wounded Ill and Injured (M9), U.S. Navy Bureau of Medicine and Surgery (BUMED); Lynne M. Lowe, P.T., DPT, OCS, ORISE Fellow – Knowledge Preservation, Rehabilitation, and Reintegration Division Health Policy and Services, Army Office of the Surgeon General

Coaching Student Veterans and Service Members with TBI
Speakers: Mary R.T. Kennedy, Ph.D., CCC-SLP, Associate Professor, Department of Speech-Language-Hearing Sciences, University of Minnesota, Minneapolis; Don MacLennan, M.A., CCC-SLP, Chief, Speech Pathology Section, Minneapolis VA Health Care System

RESOURCES

TBI Global Synapse Town Hall: Your Information Connection
Speakers: Col. Sidney R. Hinds, M.D., Director, DVBIC; Lt. Cmdr. Cathleen Shields, M.S., CCC-SLP/CBIS, Acting Director of Education, DVBIC; Stephanie N. Maxfield-Panker, P.T., Ph.D., DPT, OCS, TBI Program Director (Acting), Office of the Army Surgeon General, Rehabilitation and Reintegration Division Defense Health Headquarters, Falls Church, VA; Alison Cernich, Ph.D., ABPP, Deputy Director, DCoE

The Role of Integrative Medicine in the Treatment of TBI
Speakers: David F. Drake, M.D., Director, Pain Clinic/Director, Integrative Medicine, Department of Physical Medicine and Rehabilitation, Hunter Holmes McGuire VA Medical Center; Margaret MacDonald, M.D., Senior Scientific Director, Defense and Veterans Brain Injury Center, Fort Carson, CO; Jean-Louis Belard, M.D., Ph.D., M.Ac., Research Advisor for Integrative Medicine, DVBIC.

State of the Science: Clinical, Metabolic, and Pathologic Effects of Multiple Concussions
Speakers: Steven DeKosky, M.D.; J. Clay Goodman, M.D.; David Hovda, Ph.D.; Donald Marion, M.D.

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"We listen to our stakeholders to come up with clinical recommendations and educational tools to give our DoD and VA medical beneficiaries the most current diagnostics and best treatments available. Our research and clinical recommendations not only benefit the military health service system, but also contribute to the civilian medical profession's body of knowledge."

- COL Sidney Hinds II, U.S. Army
DVBIC National Director

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