DCoE 2012

Annual Report

DEFENSE CENTERS OF EXCELLENCE

For Psychological Health & Traumatic Brain Injury

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We often hear about the invisible wounds of war because these are injuries people can't see. At a glance, it isn't apparent that someone has chronic effects of concussion or posttraumatic stress disorder. The person has all four limbs, is not bleeding and has no visible scars, but the scars are there. These injuries are not invisible to family members or close friends or coworkers and they're certainly not invisible to the individual suffering from them. These are important issues to address and there's a lot of work yet to do, but we are making progress and we have a plan to get there.

Richard Ricciardi, Ph.D.

Welcome Letter

I am proud to introduce the 2012 Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) Annual Report. Since opening its doors in 2007, DCoE has experienced tremendous growth and enormous challenges. Each experience and each challenge has provided us with unprecedented opportunities to bring about meaningful improvement in the lives of our wounded warriors and to produce lasting substantive changes in military medicine.

In 2012, we continued to work diligently to ensure DCoE was a functional, disciplined and focused organization. We streamlined our work from six centers into three centers: Defense and Veterans Brain Injury Center, Deployment Health Clinical Center and the National Center for Telehealth and Technology, and three partner centers: Center for Deployment Psychology, Center for the Study of Traumatic Stress and National Intrepid Center of Excellence.

Change is inevitable, as individuals and as an organization. Throughout 2012 we aggressively prepared for the transition to executive agency status under the U.S. Army Medical Research and Materiel Command. Throughout this time of positive change and realignments, we still had a mission to accomplish to improve the lives of our nation's service members, families and veterans by advancing excellence in psychological health and traumatic brain injury prevention and care.

As an organization we have successfully positioned ourselves to analyze and identify psychological health and traumatic brain injury knowledge to accelerate improvements in clinical, educational and research activities to improve the system of care. In just a few short years we have made significant strides — but the journey is not complete. I encourage you to read through the 2012 DCoE Annual Report to gain insights on where we have been and view this information through a forward-looking lens and ask yourself, "What if…?" and "Why can't we…?"

Sincerely,

Paul S. Hammer
CAPT, MC, USN
Director, Defense Centers of Excellence
for Psychological Health and Traumatic Brain Injury

1991-1992

1991

Operation Desert Storm and First Gulf War

The injuries sustained by U.S. service members during Operation Desert Storm focused new attention on the impact of brain injuries in the military and contributed to congressional support for the creation of the Defense and Veterans Head Injury Program (DVHIP) and the Gulf War Health Center.

1991

Congress authorizes funds for the Defense and Veterans Head Injury Program

The initial congressional language in the 2002 Department of Defense Appropriations Bill, calls for $3,233,000 to the Defense Department to "start an initiative for [Defense Department] victims of head and neck injuries." The creation of the Defense and Veterans Head Injury Program grew out of a collaboration between researchers at Walter Reed Army Medical Center and the National Head Injury Foundation (renamed the Brain Injury Association in 1995) that brought the issue to the attention of Congress.

1992

Defense and Veterans Head Injury Program established

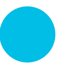
DVHIP opens its doors in 1992 with a three part mission focused on clinical care, research and education. Later renamed the Defense and Veterans Brain Injury Center (DVBIC), it has treated tens of thousands of patients, contributed to more than 100 scientific publications, and delivered dozens of educational products to assist service members, veterans, families and clinical care providers.

War/Conflict

Policy

DCoE Center

DCoE



Collaboration

Partner Center

1995-2003

1995

Gulf War Health Center established

The Gulf War Health Center is located on the grounds of Walter Reed Army Medical Center. In 2001, the Gulf War Health Center is renamed the Deployment Health Clinical Center (DHCC), which is one of three deployment health-related centers created by Congress in the 1999 National Defense Authorization Act.

Photo by Charlie Kershner, used by permission

2001-2003

Operation Enduring Freedom/ Operation Iraqi Freedom (OEF/OIF)

The military sees an increase in the number of service members experiencing symptoms of traumatic brain injury (TBI) as well as psychological health conditions such as posttraumatic stress disorder (PTSD) and depression after the beginning of operations in OEF and OIF. (Between 2001 and 2012, the total number of TBI diagnoses is 266,810, while the number of cases each year rises from 11,580 in 2001 to 32,609 in 2011. As of November 2011 the Armed Forces Health Surveillance Center reported a total of 23,075 non-combat and 86,335 combat cases of PTSD.)

2007

April

Independent Review Group report issued

An Independent Review Group appointed by Defense Secretary Robert Gates, issues its report on rehabilitative care and administrative processes at Walter Reed Army Medical Center entitled "Rebuilding the Trust." The report draws several conclusions about the circumstances that led to problems and makes recommendations about how to improve the quality of care. The findings most directly pertinent to DCoE's establishment were the need to improve and distribute "identification techniques," "comprehensive clinical practice guidelines" and "research and training support" for TBI and PTSD. One of the group's most important general recommendations for how to improve care and reformulate the existing system was the creation of a center of excellence that would focus exclusively on these issues.

U.S. Air Force photo by Staff Sgt. Joel Mease

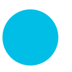
May

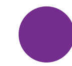
Wounded, Ill and Injured Senior Oversight Committee is formed by the secretaries of defense and veterans affairs

The committee is charged with reviewing and implementing hundreds of recommendations from various task force and committee reports on how to improve the system of care for service members, veterans and their families. It is also charged with developing a process and an organizational structure to review and act on the task force recommendations. Committee officials disaggregate the list of suggested changes into eight lines of action and disseminate responsibility for each to eight teams of military and civilian experts.

Army TBI Task Force report issued

The task force report makes 13 categories of recommendations aimed at improving TBI treatment and care in the Military Health System (MHS), including the creation of a TBI center of excellence. As late as 2003, the task force points out, efforts to identify soldiers with mild TBI remained extremely "fragmented," "locally driven" and "sporadic." There was no single organization, group or plan that could connect the dots across the military services, ensuring a consistently high standard of care and driving the implementation of best practices. Frontline providers also lacked basic diagnostic tools. For example, there was no formal in-theater TBI screening protocol in place until mid-2005. Progress in TBI diagnosis and treatment, the task force summarized, continued to lag behind the improvements made in other areas of combat medicine.





War/Conflict | *Policy* | *DCoE Center* | *DCoE* | *Collaboration* | *Partner Center*

2007

June

Health Affairs "Red Cell" constituted

The Red Cell is a Health Affairs tiger team organized by the oversight committee and includes subject matter experts and a small support staff. The Red Cell is responsible for the second line of action, which calls for them to examine psychological health and TBI issues.

DoD Task Force on Mental Health report

The 95 recommendations of the task force report are referred to the Red Cell for action.

July

Dole-Shalala Commission report issued

The President's Commission on Care For America's Returning Wounded Warriors (also known as the Dole-Shalala Commission) releases its report entitled, "Serve, Support, Simplify." Like the Independent Review Group report issued two months earlier, the Dole-Shalala report notes that the Defense Department "should establish a network of public and private-sector expertise in TBI and partner with the [Department of Veterans Affairs] on an expanded network for PTSD." This would include the dissemination of "existing TBI and PTSD clinical practice guidelines to all involved providers," and "work[ing] with other national experts to develop them" where they do not already exist. The commission recommendations are referred to the Red Cell.

August

Wounded, Ill and Injured Senior Oversight Committee calls for establishment of national center of excellence for TBI and PTSD

The committee issues a memorandum requiring the assistant secretary of defense for Health Affairs and the under secretary for health for the Veterans Health Administration to establish a national center of excellence for TBI and PTSD.

November

Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury established

Deputy Assistant Secretary of Defense for Force Health Protection and Readiness, S. Ward Cassells signs a memorandum requesting the military departments to nominate individuals to staff the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE).

2008

January

Congress passes NDAA FY 2008

Final passage of the National Defense Authorization Act (NDAA) (FY 2008) provides a congressional mandate for the creation of centers of excellence for PTSD and TBI (Subtitle B, Section 1621-24) by the Defense Department.

National Center for Telehealth and Technology established

The National Center for Telehealth and Technology (T2) is established as a directorate of the DCoE headquarters from the Army Behavioral Health Technology Office of Madigan Army Medical Center at Joint Base Lewis-McChord, Wash. T2 leverages technology to improve the health of service members and veterans with psychological health concerns and traumatic brain injuries.

DoD Suicide Event Report (DoDSER) launched

The DoDSER program is a collaborative effort among the Defense Department's Suicide Prevention and Risk Reduction Committee, the services' DoDSER program managers and National Center for Telehealth and Technology. It is the most comprehensive source of information available about military suicides.

Courtesy photo by Sesame Street

April

DCoE and Sesame Workshop collaborate to launch phase two of the Talk, Listen, Connect series for military families

To help young children (ages 2 to 5) cope with the deployment cycle and challenges of a parent in danger, DCoE partners with Sesame Workshop to develop and distribute a series of outreach programs. Programs are available in both English and Spanish, and available for free download on iTunes.

May

Center for the Study of Traumatic Stress (CSTS) publishes first studies on human PTSD brain tissue

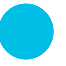
CSTS scientists discover two new critical paths in the neurobiology of PTSD, which may lead to new treatments. Working as the Traumatic Stress Brain Study Group, the collaborators have access to the world's only Brain Bank, which collects post-mortem brain tissue of PTSD patients.

War/Conflict

Policy

DCoE Center

DCoE

 *Collaboration*

Partner Center

2008

June

Groundbreaking ceremony for National Intrepid Center of Excellence (NICoE)

NICoE is created by DCoE to be its clinical arm, which will use an innovative, holistic approach to refer, assess, diagnose and treat those with complicated mild TBI and pyschological health disorders.

August

T2 Launches afterdeployment.org

An interactive website for service members, families and health care providers, afterdeployment.org provides information and solutions for addressing post-deployment adjustment challenges.

September

DVBIC becomes primary TBI operational component for DCoE

The establishment of DCoE as the headquarters element of DVBIC, DHCC and T2, and its collaboration with other Defense Department centers of excellence, is an iterative process and part of a comprehensive response to psychological health concerns and TBI within the Defense Department.

October

DCoE, National Institutes of Health and Department of Veterans Affairs (VA) sponsor first Trauma Spectrum Disorders Conference

The conference focuses on enhancing and promoting collaboration between the agencies to support veterans, service members and their families.

November

DCoE hosts first Warrior Resilience Conference

The conference brings together a cross-disciplinary community of experts to discuss resilience and resilience-based training as a mission readiness factor.

December

DHCC completes rollout of RESPECT-Mil

RESPECT-Mil provides training and other resources to expand screening and treatment options for PTSD and depression in the military primary care setting.

2009

DCoE Outreach Center launched

The DCoE Outreach Center is staffed by health resource professionals who are available 24/7 to answer questions and direct callers to resources for psychological health and TBI.

DCoE and VA host first Suicide Prevention Conference

The conference is a joint effort to enhance understanding and resources for suicide prevention in the military.

Concussion/Mild TBI Guideline Working Group releases clinical practice guidelines for mild TBI in deployed settings

The working group includes DCoE, DVBIC and DHCC leaders as well as health care professionals from across the Defense Department, VA and private sector. The guidelines and algorithms produced by the group serve as a guide for providers to determine best interventions and timing of services for patients.

DCoE launches Real Warriors Campaign

The Real Warriors Campaign is an award-winning effort to address the stigma associated with psychological health care in the military and encourages help-seeking behavior. The campaign features video profiles of service members sharing their experiences about reaching out for care and the positive impact it had on their life.

Sesame Workshop launches Family Connections website to complement "Talk, Listen, Connect" series

The "Family Connections" website serves as an initiative to help children cope with deployments, multiple deployments and injured parents, and allows families and friends to stay in touch through messages, artwork, photos and videos. In addition, the website offers communication tips for parents and videos for children.

December

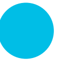
DCoE launches award-winning social media efforts

War/Conflict

Policy

DCoE Center

DCoE

 *Collaboration*

Partner Center

2010

January

Defense Department initiates inTransition

The inTransition program is created to provide support to service members receiving mental health care as they transition between health care systems and providers.

March

T2 activated as a DCoE Center

T2 changes operational status from a DCoE headquarters directorate to a component center.

inTransition shifts to DCoE

DCoE is named the lead agency for implementation of the inTransition program.

Department of Defense releases Directive Type Memorandum (DTM) 09-033, " Policy Guidance for Management of Concussion/Mild Traumatic Brain Injury in the Deployed Setting"

The directive is released through the work of DCoE, DVBIC and other Defense Department organizations to ensure comprehensive evaluation of service members who were exposed to potential concussive events.

August

Transfer of NICoE to U.S. Navy

NICoE is transferred from DCoE to the Department of the Navy for further alignment under the National Naval Medical Center, effective Aug. 10, 2010.

October

T2 launches the first of many mobile applications for psychological health

The T2 Mood Tracker is a mobile app that helps users monitor trends of emotions and behaviors from therapy, medication, daily experiences and changes in their environment.

2011

January

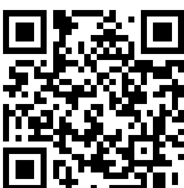
Real Warriors Campaign launches "Game Day" events

The Real Warriors Campaign partners with NFL Players Association to host "Game Day" events at military installations. The events connect former NFL players with service members to discuss common reintegration challenges, and help break down barriers to seeking help for psychological health concerns.

June

The Real Warriors Campaign mobile website launches

The campaign launches m.realwarriors.net, so individuals can access its website features from their smart mobile device.



Scan QR code with a smartphone to download the mobile app.

November

DCoE works with Sesame Workshop and Electric Company to launch Military Families Near and Far

Sesame Workshop rebrands the Sesame Street "Family Connections" website and includes new tools and resources aimed at school-age children. The result of this effort is "Military Families Near and Far," an online space that provides new ways for preschool and school-age children to express themselves, communicate within their own family networks, and stay connected with loved ones.

December

Centers realign

Center for Deployment Psychology (CDP) and the Center for the Study of Traumatic Stress (CSTS) move from DCoE to the Uniformed Services University of the Health Sciences (USUHS). The two centers will continue as collaborative partners. DCoE is now comprised of three centers: DHCC, DVBIC and T2.

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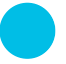
 *Collaboration*
Partner Center

2012

January

MilitaryKidsConnect.org launches

Created by psychologists at T2, the new website helps children of deployed parents cope with stress, changing responsibilities and concern for the safety of their parents.

August

Military Medicine publishes a special issue on psychological health and traumatic brain injury

The special edition of "Military Medicine" was developed through the collaborative efforts of DCoE, CDP, VA, Harvard University, U.S. Navy, Dartmouth College, U.S. Army and USUHS to highlight recent progress in the areas of psychological health and TBI.

September

DCoE and centers receive the Defense Department Joint Meritorious Unit Award (JMUA)

The JMUA is awarded in the name of the secretary of defense to joint activities for meritorious achievement or service, superior to that which is normally expected, for actions in the following situations: combat with an armed enemy of the United States, a declared national emergency, or under extraordinary circumstances that involve national interests.

January 2013

DoD Directive aligning DCoE to the Army approved

DoD Directive 6000.17E designates the secretary of the Army as the DoD executive agent for DCoE, including transfer of control and organizational support from the TRICARE Management Activity director. The directive also "establishes policy and assigns responsibilities to integrate and optimize psychological health and traumatic brain injury to improve health outcomes."

DCoE

The mission of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) is to improve the lives of our nation's service members, families and veterans by advancing excellence in psychological health and traumatic brain injury prevention and care. DCoE serves as the principal integrator and authority on psychological health and traumatic brain injury knowledge and standards for the Department of Defense.

As an integral part of the Military Health System (MHS), DCoE is uniquely positioned to accelerate improvements in psychological health and traumatic brain injury outcomes and policy to impact the continuum of care across the services by promoting refinements, consolidating efforts and eliminating redundancies. Working with the Department of Veterans Affairs (VA) and an extensive network of similarly focused agencies, DCoE seeks to profoundly improve the system of care and serves as the Defense Department's trusted source and advocate for psychological health and traumatic brain injury knowledge and standards.

DCoE is comprised of three centers — Defense and Veterans Brain Injury Center (DVBIC), Deployment Health Clinical Center (DHCC) and National Center for Telehealth and Technology (T2). Each center brings its unique expertise to improving the care of wounded warriors with psychological health or traumatic brain injury concerns.

DVBIC integrates specialized traumatic brain injury research and education across the Defense Department and VA. The center is composed of a network of 17 sites located at military treatment facilities, VA hospitals and two neuro-rehabilitation and community reintegration programs. DVBIC serves as the Defense Department office of responsibility for traumatic brain injury surveillance for the services. DVBIC provides direct evaluation, treatment and follow-up care to wounded warriors with traumatic brain injury. The center conducts traumatic brain injury clinical research, training and education, as well as creates and distributes training and education products.

DHCC supports service members, families and health care providers during overseas operations. The center works to improve deployment-related health care for military personnel and families, and serves as an MHS resource center and catalyst for deployment-related health care innovation, evaluation and research. DHCC carries out its mission by providing health service, conducting outreach and provider education, and conducting research and evaluation to improve health services delivery.

T2 leads the development of telehealth and technology solutions for psychological health and traumatic brain injury concerns to improve the lives of our nation's warriors, veterans and their families. T2 seeks to identify, treat and minimize or eliminate the short- and long-term adverse effects of traumatic brain injury and psychological health conditions associated with military service. To accomplish this, T2 creates and evaluates technologies to support and enhance psychological health and traumatic brain injury recovery within the military community; deploys strategies to provide care in remote or underserved areas; and develops mobile applications, websites, assessments, and screening and treatment tools.

The MHS defines a center of excellence as an organization that focuses on an associated group of clinical conditions and creates value by achieving improvements in outcomes through clinical, educational and research activities. DCoE headquarters and center staff embody this focus in their collaborative scientific approach to the evaluation, analysis and standardization of psychological health and traumatic brain injury information, pathways of care, clinical tools and programs. To advance care, DCoE identifies gaps and prioritizes needs in psychological health and traumatic brain injury research and promotes evidence-based practices and standards. DCoE then translates this research and information to improve clinical and health status outcomes that help guide health care providers treating wounded warriors both in-theater and at home.

DCoE provides psychological health and traumatic brain injury expertise and leadership through close engagement with its strategic partners. The formation of this collaborative network allows DCoE to broaden its reach and bring increased awareness related to psychological health and traumatic brain injury priorities and programs. DCoE works to optimize the quality and efficiency of these programs by conducting thorough analysis to promote efficient, evidence-based programs and standardized processes. As the go-to organization for psychological health and traumatic brain injury within the MHS, DCoE provides resources to the Defense Department, VA, the military services, federal partners, health care providers, service members, veterans and their families to ensure that wounded warriors receive the best care for their needs.

DCoE has identified 17 strategic objectives to guide the organization's work. The ultimate goal in any organizational strategy is to deliver value to stakeholders and customers. This annual report is divided into four chapters that describe programs and accomplishments of the past year in terms of the four "Stakeholder Value and Serving the Customer" objectives from DCoE's strategy map.

Joint Meritorious Unit Award

DCoE was awarded a Joint Meritorious Unit Award by the Defense Department in 2012. The Joint Meritorious Unit Award, awarded in the name of the secretary of defense, is intended to recognize joint units and activities for meritorious achievement or service. The award citation credits DCoE with making "a profound impact on the medical treatment, care and advocacy of our wounded warriors and their families — from innovative educational programs to vast improvements in communications programs to promoting the awareness and availability of programs across the Department of Defense. The scope of these accomplishments is staggering…"

DCoE Strategy Map

View the strategy map on the DCoE website by clicking here.

Improved Clinical and Health Status Outcomes

DCoE improves outcomes in prevention and risk reduction, and the treatment and rehabilitation of service members and veterans with psychological health and traumatic brain injury concerns by providing clinical guidance, tools and education informed by the most current research and evidence.

In 2012, DCoE developed and updated existing state-of-the-science clinical practice guidelines and clinical practice tools to help providers who treat wounded warriors with psychological health and traumatic brain injury concerns.

Substance Use Disorder Tool Kit

Service members with substance abuse problems may experience multiple adverse consequences in their personal and professional lives. They are more likely to experience health, marital, legal and financial problems, and engage in emotional and physical abuse. To address these ongoing concerns within the military population, DCoE, in collaboration with the U.S. Army Medical Command (MEDCOM) and VA, published the “Substance Use Disorder Tool Kit” in May 2012. The purpose of this tool kit is to help health care providers who treat patients who abuse alcohol

or drugs. It ensures providers deliver evidence-based treatment consistent with the Defense Department and VA clinical practice guideline, and makes it easier for providers to share relevant information and resources to support recovery with patients and families. In addition to medical information, the tool kit includes information for providers to educate family members about the family impacts of substance abuse. A tool that aids line leaders in the recognition of substance use disorders in service members and offers guidance on courses of action is expected to be published in the summer of 2013.

Major Depressive Disorder Tool Kit

Many service members and veterans who experience symptoms of depression receive most or all of their care through their primary care physician. The "Major Depressive Disorder Tool Kit," was developed by DCoE, MEDCOM and VA to provide clear, comprehensive descriptions of critical decision points that help providers screen for major depressive disorder. The tool kit guides diagnosis, management of symptoms and referral of patients to mental health specialists. The tool kit also includes simple reference material for providers, patients and their families. It can be used in its entirety or in sections depending on patient needs. To further assist providers using the tool kit, DCoE created the "Major Depressive Disorder Tool Kit: Key Concepts for Primary Providers," which offers brief background information on the clinical practice guidelines for major depressive disorder and an overview of how the materials included in the tool kit can be used to efficiently diagnose, assess and treat depression. A training manual for instructors educating mental health professionals and a one-pager for quick reference to treatments for major depressive disorder are also available.

PTSD Tool Kit

Since 2003, the number of new cases of posttraumatic stress disorder (PTSD) among active-duty service members increased. According to published studies, of the approximately 2.3 million service members deployed in support of Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF), 10 to 17 percent developed significant PTSD symptoms post-deployment. In collaboration with MEDCOM and VA, DCoE developed five PTSD tools scheduled for publication by summer 2013. These tools will provide information and guidance to health care professionals, service members and their families on symptom recognition, diagnosis, treatment options, common co-occurring conditions and recovery.

Opioid Therapy for Chronic Pain Tools

A large number of service members and veterans require management of acute and chronic pain. In partnership with MEDCOM and VA, DCoE created seven guides and fact sheets for providers and patients about pain management with opioid therapy. These tools provide guidance related to effective symptom management, consultation and referral, addiction care, risks of misuse, medication changes, side effects, adjunct treatments and tapering and discontinuation. The tools are scheduled for release in late spring 2013.

Neuroendocrine Dysfunction Screening Post Mild Traumatic Brain Injury Clinical Recommendation and Reference Card

DCoE developed the "Neuroendocrine Dysfunction Screening Post Mild Traumatic Brain Injury Clinical Recommendation" and a corresponding reference card to guide primary care providers of service members who sustain a mild traumatic brain injury. The tools provide medical guidance to evaluate and treat neuroendocrine dysfunction (NED), which can occur as a result of direct trauma or biochemical response that interferes with the normal production and regulation of interrelated hormonal processes. Current literature and expert consensus have identified that from the 15 percent of mild traumatic brain injury patients whose symptoms do not resolve in the usual timeframe, an estimated 15 to 30 percent develop the dysfunction. The tools clarify the indications for post-injury neuroendocrine screening and provide a reference point for neuroendocrine screening following traumatic brain injury. The NED clinical recommendation and reference card include information on the co-occurrence of the dysfunction and mild traumatic brain injury, onset and manifestation of NED symptoms, and an algorithm to inform providers what lab tests are recommended and when to obtain them. Additionally, DCoE created education slides to assist providers who have basic knowledge of mild traumatic brain injury, but who may require additional information on the factors of the dysfunction.

Assessment and Management of Dizziness Associated with Mild Traumatic Brain Injury Clinical Recommendation and Reference Card

While most patients with mild traumatic brain injury completely recover within a few weeks, some individuals experience persistent symptoms such as dizziness. Dizziness is a common symptom following mild traumatic brain injury and if left unresolved or untreated, can have a significant

impact on a service member's quality of life. Approximately 20 percent of patients can present with chronic or recurring episodes of dizziness that require additional examination by a provider. DCoE developed the "Assessment and Management of Dizziness Associated with Mild Traumatic Brain Injury Reference Card," and the corresponding clinical recommendation, to help primary care providers evaluate and manage dizziness symptoms in patients who have been diagnosed with mild traumatic brain injury. The reference card and clinical recommendation provide differentiation between the different types of dizziness, so providers can accurately categorize a patient's symptoms and provide a focused assessment. The clinical recommendation includes information on red flags that require urgent referral to appropriate specialists, medication side effects, patient management and referral options. The reference card provides a listing of focused diagnostic tests and specific comorbid conditions (e.g., migraines, sleep disorders, psychological disorders and visual disturbances). Additionally, training slides corresponding to the clinical recommendation and reference card are available.

Updated Mild Traumatic Brain Injury Provider Resources

The "Mild Traumatic Brain Injury Pocket Guide" mobile application for health care providers gives instant access to a comprehensive quick-reference guide on improving care for patients with mild traumatic brain

Screenshots courtesy of T2

injury. Designed to reflect current clinical standards of care, the mobile app can help improve quality of care and clinical outcomes for patients. The app has been downloaded more than 12,000 times since it was released in October 2011.

To supplement the already popular "Co-occurring Conditions Tool Kit: Mild Traumatic Brain Injury and Psychological Health," T2 created a free mobile application that can be accessed through an iPhone, iPad or Android device to give providers immediate access to critical and up-to-date information. Providers can use the app to identify appropriate interventions and timing of services to more effectively meet the needs and improve outcomes for patients who sustained a brain injury. Additional benefits of the app include increased use of evidence-based treatment recommendations, enhanced provider-patient interactions and appropriate specialty referrals. The mobile application has been downloaded approximately 4,000 times.

U.S. Army photo by Jerry Woller

Provided Leadership

DCoE is the Defense Department lead for psychological health and traumatic brain injury concerns. DCoE engages with strategic partners to increase reach and form a responsive and collaborative network among the Defense Department, VA and communities of interest including medical, academic, research and advocacy.

This network has the ability to impact awareness and help establish policy on recommended and evidenced-based care and treatment, advocate for needed clinical research, and strengthen the culture of support for the military force impacted by these concerns.

DCoE, because of its role within this network, is uniquely positioned to be the principal integrator within the Defense Department to accelerate improvements in policy affecting the continuum of care.

Collaborative Working Groups

DCoE leads and participates in a variety of working groups, which provide a platform to promote communication among the services and organizations to ensure the best use of resources, to avoid duplication, and to improve psychological health and traumatic brain injury care. ***Below is a snapshot of the working groups.***

Psychological Health Quad Service Working Group

A bi-weekly meeting of directors of psychological health from the military services and representatives from DCoE and the office of the assistant secretary of defense for health affairs. The group provides visibility on the latest psychological health policies and programs across the military services and allows for coordination and collaboration of high profile activities.

TBI Quad Service Working Group

DCoE, the military services and other joint organizations with a traumatic brain injury (TBI) focus come together for the TBI Quad Service Working Group. The group's goal is to improve and sustain communication and collaboration throughout the Defense Department on the identification, evaluation and provision of quality care for service members and their families.

National Intrepid Center of Excellence (NICoE) Satellite Working Group

This working group is comprised of representatives from the services and DCoE to create the concept of operations and start planning for NICoE satellite locations.

Chaplain Working Group

DCoE leads a chaplain working group, which meets quarterly to delve into spiritual and behavioral conflicts arising from deployment. Attendees primarily include Defense Department and VA chaplains. Chaplains grapple with difficult issues, and during a time of war, military chaplains must address constructs that deeply challenge common beliefs.

Substance Abuse and Mental Health Services Administration Policy Academy Working Group

The policy academy working group provides leadership and devotes its resources — including programs, policies, information and data, contracts and grants — to the promotion of key messages. These messages include **(1)** behavioral health is essential for health, **(2)** prevention works, **(3)** treatment is effective and **(4)** people do recover from mental and substance use disorders. DCoE provided assistance on Defense Department related components of these efforts.

The Telehealth Working Group

The telehealth working group was established in November 2011 to increase and sustain communication and collaboration on identifying and evaluating opportunities that provide expanded telehealth services across the Defense Department and VA. As a co-chair, T2 leads the group's efforts to improve telehealth by linking services across departments, facilitating access to care in remote areas, promoting the continuity of care between the departments, allowing for possible cost savings and increased efficiencies, and offering advisement on legal and policy issues. The group continues to identify opportunities to expand the joint telehealth program, with an immediate focus on telemental health services, and to optimize joint capabilities between departments.

Fedtel Telemental Health Working Group

T2 serves as chair for the Federal Partners Exploratory Committee on telemental health. Teleconferences cover practices and lessons learned while performing telemental health or working on telemental health issues. Participants have included Agency for Healthcare Research and Quality, Department of State Office of Personnel Management, Indian Health Service, Department of Veterans Affairs, Centers for Disease Control and Prevention, Department of Labor, Department of Health and Human Services, Substance Abuse and Mental Health Services Administration and Health Resources and Services Administration.

International Leadership in Mental Health Work Group

DCoE leads a work group in collaboration with the Australian Institute of Family Studies, Substance Abuse and Mental Health Services Administration, Health and Human Services and RAND to examine the mental health needs of service members and their families in rural and remote locations. As part of this initiative, DCoE is constructing the first Defense Department geospatial map that shows where service members reside relative to their distance to psychological health care access, and has developed a map that shows distribution in the United States of service members who have PTSD and major depression diagnoses.

Leadership Briefings

DCoE presented "An Executive Level Overview of Psychological Health and Traumatic Brain Injury in the DoD: Understanding the Facts and Recognizing the Misconceptions" briefing to approximately 90 newly-appointed executives during two sessions of the APEX Senior Executive Service Orientation. This orientation is required for all new executives to the department and is offered twice a year.

White Papers and Reports to Congress

As a leader in psychological health and traumatic brain injury, it is imperative to keep key stakeholders including leadership, Congress, providers, the research community and the general public informed on advancements in research, programs and practices. To meet these needs, DCoE drafts and publishes white papers as well as reports to Congress on a regular basis. ***In 2012, DCoE published the following reports and white papers:***

- *A Review of Post-Deployment Reintegration: Evidence, Challenges and Strategies for Program Development*
- *Position Paper on Senator Murray Bill to Enhance Defense Department Medical Programs and Activities*
- *National Guard Program Evaluation of the Directors of Psychological Health for Secretary of Defense*
- *An Extensive Review of Existing Prevention Programs on Substance Misuse in the Military*
- *A Comprehensive Literature Review of Recovery Support Programs and Models*
- *Priority Department of Defense Language Appeal FY 2013 Defense Authorization Bill*
- *Review Proposed Amendment for Pilot Program for Treatments*
- *DCoE Review of Draft Statement of Veterans Affairs Testimony*
- *Information Paper on Guided Imagery*
- *DCoE continued the Resilience and Prevention Study, a three-year effort launched in 2010, which focuses on program evaluation and retrospective data analyses of Defense Department resilience and prevention programs. In 2012, the evaluation of the Army's Soldier 360 Leader Comprehensive Fitness Course was completed.*
- ***Report to Congress:** Comparative Effectiveness of Neuroimaging Modalities on the Detection of Traumatic Brain Injury*
- ***Report to Congress:** Report on Research and Treatment of Posttraumatic Stress Disorder: Neuroimaging*
- ***Response to Congressman Cooper Hearing:** Back from the Battlefield: Defense Department and VA Collaboration to Assist Service Members Returning to Civilian Life*
- ***Report to Congress:** Cognitive Rehabilitation Therapy for Traumatic Brain Injury*
- ***Report to Congress:** The Study of Barriers to PTSD Treatment of the Active and Reserve Components*
- ***Report to Congress:** Report on the Institute of Medicine Report "Treatment for Posttraumatic Stress Disorder in Military and Veteran Populations: Initial Assessment"*
- *PTSD Prevention Strategies*
- *Well-being and Its Measurement*
- *Defense Department-wide Incidence of PTSD*

Provided Readily Accessible Knowledge and Trusted Resources

In order to advance the treatment and care of psychological health and traumatic brain injury, it is vital to provide credible and relevant knowledge and resources to key stakeholders including: military leadership, health care providers, researchers, service members, veterans and families. DCoE provides knowledge, educational resources and awareness of support programs in the most effective way possible through multiple channels such as conferences, webinars, video teleconferences, online news and more.

inTransition

The inTransition program bridges the gap for service members with psychological health concerns who are transitioning between behavioral health care systems or providers by providing coaches who are licensed behavioral health care providers trained in military culture. The DCoE-managed program is a collaborative effort between the Defense Department and VA, and provides confidential, free services 24 hours a day, seven days a week. InTransition is voluntary, and program coaches encourage service members to be an active part of their treatment planning process by guiding and educating them on healthy decision-making. The inTransition team informs behavioral health care providers, service members, veterans and their families about the program through Yellow Ribbon events, conferences and presentations worldwide, including video teleconferencing presentations and onsite briefings. InTransition conducted 40 provider trainings by video teleconference that were attended by more than 500 participants.

In 2012, the program received 8,689 calls, of these calls 2,061 became actual intake calls with service members and 97 percent of them accepted services. There were 1,530 coaching cases in 2012, and the program saw a 74 percent increase in services from 2011.

Noteworthy

InTransition saw a **74 percent increase** in services from 2011.

DCoE Outreach Center

The DCoE Outreach Center is available to service members, veterans, military families, health care providers, researchers and the public to provide information and resources regarding psychological health and traumatic brain injury. Trained health care consultants are available 24 hours a day, seven days a week via toll free phone calls, live online chat and email. As the only Defense Department resource center dedicated exclusively to psychological health and traumatic brain injury concerns, the DCoE Outreach Center has collaborative agreements with other Defense Department and VA hotlines and resource centers to ensure service members, veterans and families get a warm hand-off to the agency or program that can best address their needs. The outreach center works closely with Military OneSource and the Military Crisis Line to share resources and make referrals. In November 2012, the DCoE Outreach Center was highlighted on the popular television show, “NCIS,” which led to an increase in call volume of 376 percent that week.

In addition to the DCoE Outreach Center staff, an outreach team at DCoE conducted briefings of resources to 12 groups of reserve component members as part of the Yellow Ribbon Reintegration Program. These transitional briefings provided visibility to more than 6,000 reservists and their family members, and provided resources available to assist them while they transition back to civilian life.

Noteworthy

In November 2012, the DCoE Outreach Center was highlighted on the popular television show, “NCIS,” which led to a **376 percent** increase in call volume that week.

Real Warriors Campaign

The Real Warriors Campaign is a national multimedia public awareness campaign designed to encourage help-seeking behavior among service members, veterans and military families coping with invisible wounds. Launched by DCoE in 2009, the campaign is an integral part of the Defense Department's overall effort to encourage warriors and families to seek appropriate care and support for psychological health concerns and combat the stigma identified in the report by the 2007 Mental Health Task Force.

The Real Warriors Campaign has built relationships and partnered with more than 200 like-minded organizations and programs; earned significant media coverage from a variety of media sources (more than 39,000 media clips garnering more than 3.2 billion impressions) — 100 percent of which has been positive or neutral in tone. The campaign provides practical articles and online resources to service members, veterans and their families. In 2012, the campaign had a specific focus on highlighting the tools and resources available to warriors and families experiencing reintegration challenges. Additionally, the campaign has earned more than 50 industry awards to date, including the Communicator Award in the category of Integrated Campaign — Promotional/Branding.

The Real Warriors Campaign launched the podcast series "Real Warriors, Real Advice," in 2012. The series highlights the importance of seeking care for invisible wounds and offers warriors and military families tools and tips on building and maintaining psychological resilience.

Courtesy photo by Real Warriors Campaign

DCoE Monthly Webinar Series

DCoE continued its monthly webinar series to provide information and facilitate discussion on a variety of topics related to psychological health and traumatic brain injury. The webinars are open to the public, however the target audience is health care providers. This was the first year that DCoE offered continuing education units and continuing medical education accreditation for the majority of webinar topics. As of August 2012, continuing education credits were extended to psychologists who participated in the webinars. More than 6,000 people participated in the 2012 webinar series, nearly tripling attendee numbers from 2011. ***Topics included:***

- *Addressing Alcohol Misuse Among Service Members: The SBIRT Model*
- *Treating Sleep Problems in PTSD and TBI*
- *Identifying Concussion/Mild TBI in Service Members*
- *Children of Deployed Parents: Health Care Provider Strategies for Enhancing Coping Skills*
- *Treating Depression in Primary Care*
- *Intimate Partner Violence: What Health Care Providers Need to Know*
- *Concussion Management in the Deployed Setting: New 2012 MACE and Clinical Algorithms*
- *PTSD 101: Education for the Civilian Health Care Provider Treating Service Members*
- *Managing Suicidal Behaviors*
- *Understanding Psychopharmacology Polypharmacy in Service Member and Veteran Populations*
- *Clinical Use of Mobile Apps in Behavioral Health Treatment*

Noteworthy

More than **6,000 people participated** in the 2012 DCoE webinar series, nearly tripling attendee numbers from 2011.

Mild TBI Web-based Case Studies

In collaboration with the Defense Department and Department of Veterans Affairs, DCoE created Web-based case studies for both military and civilian health care providers who treat service members with mild traumatic brain injury. The series uses real patient vignettes to assist health care professionals in understanding mild TBI and included screening, diagnosing and

managing patient symptoms in the non-deployed setting. One free continuing education unit or continuing medical education credit is awarded to health care professionals for completing the case studies. The American Psychological Association also offers psychologists credit for the series. ***Case studies include the following topics:***

- *Diagnosing Mild TBI*
- *Assessing the Individual with Persistent Symptoms*
- *Use, Administration and Interpretation of the Military Acute Concussion Evaluation Updated September 2012*
- *Assessing the Individual with Persistent Headaches*
- *Cognitive and Behavioral Symptom Management of Mild TBI*
- *Management of Hearing and Vision Problems Following Mild TBI*
- *Return to Duty/Activity After Mild TBI*
- *Assessing and Treating Dizziness and Disequilibrium*
- *Defense Department ICD-9-CM Coding Guidance for TBI*
- *Assessing and Managing Fatigue and Sleep Dysfunction*
- *Mild Traumatic Brain Injury: Putting It All Together Part 1*
- *Mild Traumatic Brain Injury: Putting It All Together Part 2*

Training Effectiveness Tool Kit Revision

DCoE merged all previous training program guidance products into one comprehensive training resource, titled “Training Effectiveness Tool Kit.” This new tool kit includes a training effectiveness document that provides the foundational explanation of training theory and strategy incorporating the industry-standard “Assess, Design, Develop, Implement and Evaluate” (ADDIE) training development model. All previous training products are now organized into modules following the ADDIE model to help training and educational professionals access specific resources of interest. Elements of the “Training Effectiveness Tool Kit” have been downloaded more than 20,000 times.

DCoE Tool Kit Training Manuals

DCoE released clinical training manuals for three DCoE tool kits: "Major Depressive Disorder Tool Kit," "Substance Use Disorder Tool Kit" and "Co-occurring Conditions Tool Kit: Mild Traumatic Brain Injury and Psychological Health." While the tool kits were developed to help providers diagnose patients, they were not created to offer an exclusive course of management, replace clinical judgment or specialty consultation. DCoE developed the complementary manuals to help instructors teach providers to use the tool kits effectively for clinical decision-making. The enhanced instruction includes adult learning principles, tools to encourage learner participation, interchangeable modules to reflect participants' needs and evidence-based tools to assess the impact of instruction on learner knowledge and behavior.

Joint Professional Military Education Tool Kit

DCoE developed the joint professional military education training in support of a special area of emphasis of the chairman of the Joint Chiefs of Staff. This training was designed to educate leaders on the prevalence of psychological health conditions within the joint force and provide ways to enhance Total Force Fitness. The tool kit includes a training manual, slide presentation and a 50-minute Web-based training course. ***The six topic areas related to psychological health emphasized in the tool kit include:***

- *Psychological health as an integral component of Total Force Fitness*
- *Prevalence of psychological health challenges facing the joint force*
- *Techniques to help reduce the psychological impact of combat on service members*
- *How to identify signs and symptoms of psychological distress*
- *Understanding the comorbidities of posttraumatic stress disorder, mild traumatic brain injury, anxiety, depression and substance abuse*
- *Skills necessary to effectively reduce stigma associated with psychological health that is present within the joint force*

Annual DoD/VA Suicide Prevention Conference

In June, DCoE co-hosted the DoD/VA Annual Suicide Prevention Conference, “Back to Basics: Enhancing the Well-Being of our Service Members, Veterans and their Families.” More than 1,100 people including service members, veterans, families, caregivers, social workers and counselors, members of academia, researchers, physicians and clinicians from federal and non-federal agencies came together in Washington, D.C. This year’s conference emphasized the value of and appreciation for active leadership, disciplined practices, strong clinical skills and service accountability. The agenda was designed to reinforce core skills for suicide prevention training so that leaders at all levels and in multiple settings can better support the force and enhance the quality of life for service members, veterans, family members and Defense Department civilians. The conference had three tracks: clinical, research and practical application. Keynote speakers included secretary of defense, secretary of health and human services, assistant secretary of defense for health affairs, vice chief of staff of the Army, assistant secretary of the Army for manpower and reserve affairs, assistant secretary of the Navy for manpower and reserve affairs, assistant secretary of the Air Force for manpower and reserve affairs, deputy assistant secretary of defense for readiness, senior enlisted advisor to the chairman of the Joint Chiefs of Staff and service senior enlisted leaders.

Air Force photo by Senior Airman Christina Brownlow

Fourth Annual Warrior Resilience Conference

DCoE hosted the fourth annual Warrior Resilience Conference, "Restoring Readiness: Individual, Unit, Community and Family" in Washington, D.C., in March 2012. The conference continued to build upon the previous year's theme of Total Force Fitness with an increased focus on the social fitness domain. The conference attracted approximately 700 attendees with more than an additional 400 individual web stream observers. The objectives of the conference were to identify and teach skills to mitigate psychological distress; restore readiness throughout the military life cycle; and provide tools and resources that could be used by leaders, service members, units, families and communities for enhanced resilience in all aspects of military life. There was representation from all of the services. The keynote speakers included the chairman of the Joint Chiefs of Staff, a Medal of Honor recipient, assistant secretary of defense for health affairs, DCoE director and various flag officers.

"Really raised my awareness of the need for me to engage with my veteran patient population at a deeper level to assess their past war related trauma, where they are in the healing process, and what I can do as their provider to help facilitate that healing."

"Will really consider how to approach topic of mental health and physical well-being of military in my practice, not just those returning from recent assignments, but those who have been in service in past."

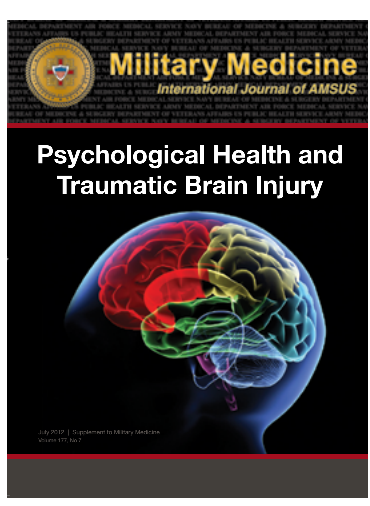
Quotes from American Association of Nurse Practitioners (AANP) members describing a keynote speech by the DCoE director at their 27th Annual Conference

Speakers Bureau

DCoE maintains an active speakers bureau to enhance understanding, increase awareness and provide clinical and educational resources and research available on psychological health and traumatic brain injury. Members of the DCoE Speakers Bureau represent a multidisciplinary group of health care professionals who are devoted to sharing their time and expertise with other military and civilian health care practitioners, federal and state agencies, academic institutions, non-profit organizations and the public. The DCoE Speakers Bureau communicates valuable psychological health and traumatic brain injury knowledge and standards of care through a variety of speaking opportunities around the country to advance excellence in prevention and care for our nation's service members, veterans and families. Through this effort, DCoE has reached audiences ranging in size from several hundred to more than several thousand across the United States and overseas.

Special Issue of Military Medicine

"Military Medicine," the monthly international journal of the Association of Military Surgeons of the United States, the Society of Federal Health Professionals, published a special supplement in August 2012, entitled, "Psychological Health and Traumatic Brain Injury." The edition highlighted the recent progress made in the epidemiology, prevention, screening, diagnosis, treatment and research of posttraumatic stress disorder, depression, substance use disorder and traumatic brain injury. Articles were developed through the collaborative efforts of DCoE, Center for Deployment Psychology, VA, Harvard University, U.S. Navy, Dartmouth College, U.S. Army and Uniformed Services University of the Health Sciences. To complement the publication, DCoE developed and published a series of related podcasts.



Anti-Stigma Efforts

DCoE launched an anti-stigma strategic action that involves the review of service doctrines, policies, procedures and programs to evaluate potential barriers to care for psychological health. If needed, next steps are to formulate recommendations to improve accessibility, availability and acceptability of help-seeking behaviors for psychological health, as well as help establish best practices metrics for monitoring improvements.

The secretary of defense established the Task Force on the Prevention of Suicide by members of the Armed Forces, which generated a number of targeted recommendations related to suicides and mental health issues in the military. DCoE was assigned the lead for responding to four of these recommendations.

To address the first recommendation of stigma, DCoE developed evidenced-based guidelines for stigma reduction campaigns and provided recommendations addressing policy improvements for stigma reduction. Additionally, DCoE staff worked with the Real Warriors Campaign to enhance messaging strategies and collaborated with other service campaigns that disseminate effective anti-stigma messages.

The second recommendation was to develop and implement campaigns to instill values and norms aligned with promoting the well-being, connectedness and psychological and spiritual fitness of service members through the use of well-planned, multi-year communications campaigns It also required developing and providing recommendations that would guide Total Force Fitness initiatives and resilience efforts throughout the Defense Department. DCoE expanded public education efforts supportive of stigma reduction campaigns that focused on help-seeking behaviors and well-being, connectedness, and psychological and spiritual fitness.

The third recommendation focused on service members who hold security clearances. In coordination with the Defense Suicide Prevention Office, a memorandum from the appropriate senior leaders was released to the force, reminding members of the Armed Forces of the policy that changed the language on the government application form for a security clearance. The Defense Department, DCoE, Real Warriors Campaign and the services have all used online and social media channels to inform service members and health care providers of the new practice and policy. The 2008 policy change allowed service members to answer "no" to the question that asks if they have ever received treatment for mental health concerns, if the care they received was "strictly related to adjustments from service in a military combat environment."

DCoE is currently working on the fourth recommendation to "take steps to make 'mental fitness' commensurate with 'physical fitness' within the military culture as a core value of military life. This would ensure that every service member receives a mental fitness assessment and appropriate wellness education as part of his or her periodic heath assessment." DCoE is working to help define mental fitness and its components, as well as to identify current service methods of assessment of mental fitness and ultimately resilience as part of Total Force Fitness review.

Social Media and Online News

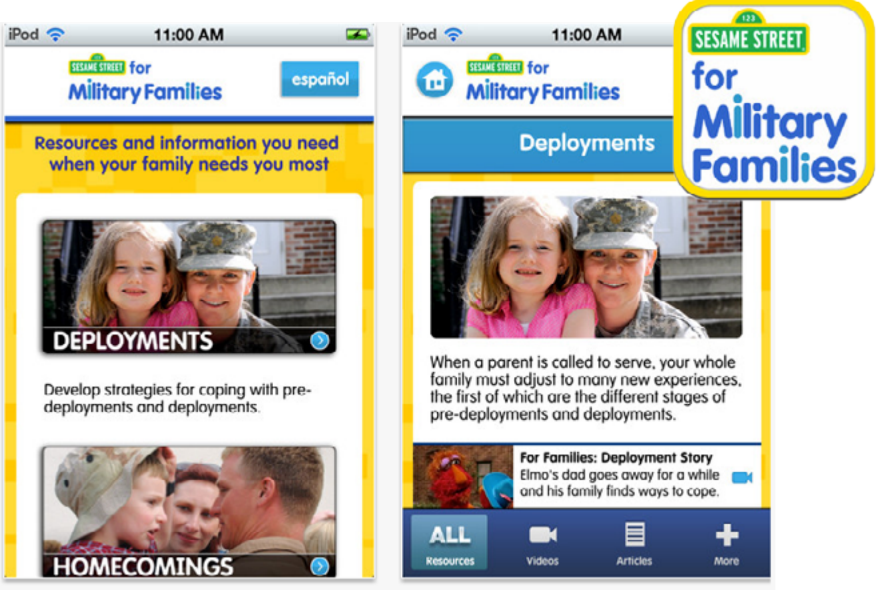
DCoE uses its online newsroom, as well as social media channels including the DCoE Blog, Facebook and Twitter to inform audiences of DCoE programs and resources, information on psychological health and traumatic brain injury, and engage in conversation. DCoE has become known as a trusted resource for warriors and their families coping with psychological health and traumatic brain injury concerns, as well as for health care professionals looking for the most up-to-date information, innovative use of technology and opportunities for additional training. In 2012, DCoE increased its news room audience by 16 percent, DCoE Blog by 35 percent, Facebook fans by 34 percent, and Twitter followers by 63 percent. Both the news room and DCoE Blog added a social media share feature to make it easier for audiences to share useful stories with their online communities. In addition to the extensive relationships with social media leads from the Defense Department, services, VA, MHS and other like-minded organizations, DCoE worked closely this past year with the U.S. Military on Facebook to reach a larger audience and share more information on resources for psychological health and traumatic brain injury. An additional feature launched in 2012 was the “Monthly Twitter Chat with Doc Bender” to accompany monthly blog posts. The Twitter series allowed individuals to ask questions and receive live feedback from a leading psychological health expert.

Noteworthy

In 2012, the DCoE Blog earned the Thoth award from the Public Relations Society of America — National Capital Chapter.

Military Families Near and Far Mobile App

Sesame Workshop has long been dedicated to the well-being of military families and their children. As technology evolves, new ways to help children through challenging transitions have emerged. In 2012, Sesame Workshop and the Electric Company, in conjunction with DCoE, launched the mobile application, “Feel Electric!” The mobile app helps children express themselves by teaching them to identify and communicate their feelings. Through games, a digital diary, story markers and a glossary of emotion vocabulary, children can strengthen their emotional awareness and self-expression skills. “Feel Electric!” is available from Apple iTunes and Google Play. Digital tools for military children create an online community for sharing valuable resources.



Dissemination of Key Materials

To ensure that all audiences from service members to clinicians to policy makers received crucial information on psychological health and traumatic brain injury, DCoE created targeted dissemination plans for products and attended key conferences. In 2012, DCoE distributed materials to various stakeholders including service members, veterans, family members, community members, health care providers, researchers and other federal agencies. DCoE also exhibited information at diverse, targeted conferences across the country and internationally to support providers, service members and military families. In addition to attending and exhibiting at conferences, DCoE subject matter experts were guest speakers or panelists at conferences, thereby increasing awareness of available products and services.

Noteworthy

DCoE distributed approximately **56,000** products.

Military TBI Case Management Resources and Quarterly Newsletter

DCoE provides resources to aid military TBI case managers and providers who support warriors with traumatic brain injury. DCoE publishes the Military TBI Case Management Quarterly Newsletter to share best practices and resources among the military TBI case management community. The content also identifies and shares best practices across the military.

Noteworthy

Since 2011, more than **4,400** copies of the Military TBI Case Management Quarterly Newsletter were downloaded.

Photo by Gloria Montgomery, Fort Hood Warrior Transition Brigade Public Affairs Specialist

VA/DCoE PTSD Post-Doctoral Policy Fellowship

DCoE provided postdoctoral training opportunities to clinical psychology postdoctoral fellows from the VA Medical Center at Baltimore, Md. The fellowship focused on PTSD and traumatic brain injury with emphasis on evidence-based practices for treatment of OEF/OIF veterans. This type of onsite training allows VA fellows to broaden their knowledge of the continuum of care across VA and Defense Department. By engaging in such an experience, the postdoctoral trainees gain knowledge of different treatment resources.

Podcasts

DCoE published a variety of podcasts on the DCoE website in 2012. ***The following are a snapshot of the subjects discussed:***

- *Screening, Diagnosis and Treatment of Depression*
- *Traumatic Brain Injury: Next Steps, Research Needed and Priority Focus Areas*
- *Epidemiology and Prevention of Combat-Related PTSD in OEF, OIF and Operation New Dawn Service Members*
- *Mild Traumatic Brain Injury Screening, Diagnosis and Treatment*
- *Prevention and Care of Combat Related PTSD: Directions for Future Explorations*
- *Next Steps in Addressing the Prevention, Screening and Treatment of Substance Use Disorder in Active Duty and Veteran OEF/OIF Populations*
- *Screening, Diagnosis and Treatment of PTSD*

Optimized Quality and Efficiency of Programs

DCoE optimizes quality and efficiency by identifying psychological health and traumatic brain injury programs that meet measurable program objectives for quality and are cost-effective. Programs are further optimized when they are evidenced-based, promote standardized processes where appropriate and reduce redundancy. Given the clinical complexities and health care costs associated with treating psychological health and traumatic brain injury conditions, DCoE makes an important contribution to the MHS by identifying ways to increase efficiency, while improving quality.

Surveillance Data Documentation Modified

In January 2011, the Blast Exposure and Concussion Incidence Report (BECIR) Module of the Combined Information Data Network Exchange was implemented by U.S. Central Command, in accordance with DTM 09-033, "Policy Guidance for Management of Concussion/Mild Traumatic Brain Injury in the Deployed Setting," to record and track all individuals exposed to potentially concussive events in the deployed environment. On Sept. 18, 2012, Department of Defense Instruction 6490.11, " DoD Policy Guidance for Management of Mild Traumatic Brain Injury/Concussion in the Deployed Setting," was signed into effect retiring DTM 09-033.

BECIR data is collected and subsequently compared to the military's electronic medical record data sources to correlate exposure to actual diagnosis of concussion and to ensure optimum care for the individual. Furthermore, the Army currently links BECIR data to the post-deployment health assessment in the Medical Protection System database in order to inform medical providers of soldiers' involvement in potentially concussive events.

More thorough analysis of the data is done to track trends in severity of injury, trends in delivery of care, trends in medical evacuations as well as identification of high risk groups. Separate analysis by military occupational specialty and unit has been completed to help inform senior leaders of concussion threat and contribute to mitigation strategies.

BECIR Quarterly Report — DCoE produces a quarterly report which presents data from BECIR providing analysis of the reporting variables and historical comparison of previous quarters reported. Below is a list of reports derived from more in-depth analysis using BECIR and other data sources.

- *Non-Deployment Associated TBIs and Mechanism of Injury*
- *Medically Evacuated Mild TBI Incidents by Service (BECIR data)*
- *DTM Data by Event by Country (Iraq – Afghanistan)*
- *DTM-BECIR Annual Surveillance Report (Inaugural for 2011)*
- *Type of Event Exposures for Concussed Service Members (BECIR data)*
- *DTM Unit Type Analysis for the Army, Marine Corps and Navy*
- *DTM Occupational Specialty Analysis for the Army, Marine Corps and Navy*
- *Concussion Care Center Admissions for Mild TBI (BECIR data)*

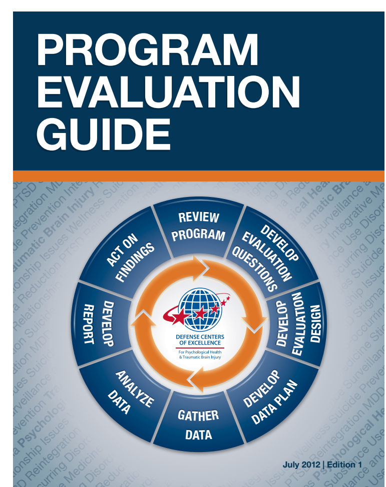
DCoE Program Evaluation

DCoE established a process and capability to institute a culture of effectiveness across Defense Department psychological health and traumatic brain injury programs to include:

- *Created the "Program Evaluation Guide," a step-by-step manual for program managers to prepare for and conduct program evaluations*
- *Presented a one-day workshop, entitled "Are Your Support Programs for Service Members Effective," during the Military Health System 2012 conference*
- *Conducted seven resilience and prevention program evaluations and 10 psychological health and traumatic brain injury program evaluations*
- *Established the Program Evaluation Advisory Council as the internal board to discuss best practices, lessons learned, change management, data requirements, service perspectives related to the assessment and evaluation of psychological health and traumatic brain injury programs.*

Program Evaluation Guide

In 2012, DCoE released the "Program Evaluation Guide," a step-by-step manual for program leaders to prepare and conduct program evaluations. The guide provides means to implement changes to a program and improve outcomes or refine stated goals. This tool aids program managers in meeting the challenge of demonstrating results that are statistically and clinically significant for service members and their families. Additionally, an accompanying slide deck was created to provide an in-depth overview of the guide.



Integrate and Optimize Psychological Health Programs to Improve Outcomes and Enhance Value

DCoE instituted a new initiative to establish an infrastructure at the system, program and patient level necessary to effectively integrate and optimize psychological health care for our service members and their families by July 2017. Specifically, the initiative will provide valid and agreed-upon patient outcome measures to assess and monitor effectiveness of common psychological health clinical practices, programs and pathways. This will also enable tracking of variation in care and clinical improvement. Standardized systems-level performance measures will help the Defense Department

understand how well the psychological health system is operating and what systematic improvements may be needed. Additionally, a systematic, standard approach and platform will be created to review, monitor and evaluate psychological health programs to ensure that these programs are efficient, effective and consistently meet senior MHS leadership intent at all practicing locations. Lastly, there will be a systematic and scalable way to efficiently demonstrate, test, adapt, refine and roll out novel psychological health care delivery models that target evolving MHS challenges and goals across the services with their input and collaboration.

Psychological Health Effectiveness Initiative

DCoE was directed by Presidential Executive Order, "Improving Access to Mental Health Services for Veterans, Service Members, and Military Families," (Executive Order No. 13625, 2012); by the Defense Department FY2013 Agency Priority Goal to "improve effectiveness of behavioral health programs" by Sept. 30, 2013; and by the deputy secretary of defense, to conduct the Psychological Health Effectiveness Initiative to determine the impact of clinical and non-clinical psychological health programs across the Defense Department over a five-year period from FY2013 through FY2017. DCoE will report the initiative's findings to the White House (pursuant to the Executive Order), Office of Management and Budget, and Office of the Secretary of Defense Cost Assessment and Program Evaluation (OSD/CAPE). DCoE has been tasked to provide outcome-based findings to OSD/CAPE to bolster data-driven programmatic decisions by Defense Department leadership.

DCoE validated an initial list of all relevant psychological health programs, including those within military treatment facilities, installations, operational and training forces and TRICARE settings. DCoE will continue to validate new programs as they develop and is coordinating with designated leaders in the military services to validate and update information about each program.

Psychological Health and Traumatic Brain Injury Concept Submission

DCoE welcomes input from community groups, agencies, programs, individuals and other organizations on research ideas, evidence-based services, and new or expanding resources for service members and their families related to psychological health and traumatic brain injury. The DCoE Concept Submission Program collects information and findings from medical, academic, research and advocacy assets of the military services, the VA, HHS and other federal agencies, as well as research from academic institutions. In 2012, DCoE reviewed 44 programs, treatments, devices and research ideas. DCoE does not award contracts, provide research grants, or offer other forms of financial support, and it does not purchase programs, services or products through the concept submission process. The program is designed to screen for merit and evidence, and create an exchange of knowledge.

U.S. Marine Corps photo by Lance Cpl. Jacob Barber

Consultative Services

DCoE specialty care provides consultative services and technical assistance to program managers, clinicians and administrators across the system. In 2012, DCoE engaged with 28 specialty care programs across MHS, responding to a wide range of issues, concerns and questions related to access to care, quality of care, data collection, analysis and management. It was imperative to create an established foundation for program monitoring and evaluation. Site visits were conducted at Fort Belvoir, Va., Fort Carson, Colo., Fort Benning, Ga., Fort Hood, Texas, Camp Pendelton, Calif., Balboa Naval Hospital and Walter Reed National Military Medical Center to provide information and share knowledge about program effectiveness. Additionally, DCoE provided ongoing consultation to specialty care programs at Fort Carson, Fort Benning, and Fort Bliss, Texas, to improve the measurement of clinical treatment outcomes. Consultative services were provided for the stand-up of new programs to include dual diagnosis programs, as well as consultation to the National Guard Bureau as part of the program evaluation initiative.

RAND Studies

In 2012, DCoE funded three RAND studies that cover the following topics: **(1)** Family Resilience in the Military: a project that aims to identify and evaluate existing programs, models and policies related to family resilience in the military, psychological health of families and TBI-related family functioning; **(2)** A three-year Deployment Life Study, which began in 2010 and aims to

Photo by Spc. Charles W. Gill

identify the antecedents, correlates and consequences of family readiness by collecting longitudinal data from military families; **(3)** Research on Suicide Prevention, which resulted in ***(a)*** "Responding to Military Suicides: A Resource Guide for Military Leaders," ***(b)*** "Suicide Prevention Program Evaluation Tool Kit" for program managers, and ***(c)*** "Understanding Chaplains' and Non-commissioned Officers' Role in Preventing Suicide Survey," which aims to identify factors that may help chaplains and non-commissioned officers in preventing suicides.

DCoE completed an extensive literature and program review both within the Defense Department, VA and civilian sectors of successful peer-to-peer support programs. Currently, peer support is widely used in both formal and informal programs and has been found to have a positive impact on individuals with shared diseases, conditions or situations. This review examined the effectiveness of peer support programs for reducing suicides, operational stress and aiding recovery. Although there is very little research regarding the effectiveness of peer-to-peer programs in the military, peer support is widely cited in civilian research as being beneficial for decreasing stress, increasing resilience and supporting recovery. DCoE is currently updating its original peer-to-peer paper to further highlight different models for peer support, (e.g., mentorship, peer surveillance, peer support recovery groups, peer support hotlines and embedded trained peers) to investigate which models might hold the most promise within military settings. Since the completion of the first report and its posting on the DCoE website, the original paper was consistently one of the top five most downloaded DCoE products. It not only generates many questions from service leads about how to best leverage peer support, but also serves as a reference for information about potentially applicable peer-to-peer models worth considering within military environments.

DCoE Centers

Defense and Veterans Brain Injury Center (DVBIC)

Congress established DVBIC in 1992 to integrate specialized traumatic brain injury research and education across the departments of Defense and Veterans Affairs. DVBIC is composed of a network of 18 sites located at military treatment facilities, VA hospitals and two neuro-rehabilitation and community reintegration programs in support of service members, veterans, families and health care providers. The DVBIC network exists to serve as a leveraging consortium for the Defense Department and VA.

Photo courtesy of National Center for Telehealth and Technology

Deployment Health Clinical Center (DHCC)

For more than 15 years, DHCC has worked to improve deployment-related health care. DHCC seeks to transform military health care delivery systems from a disease management model to a population-based collaborative care model through health systems research, program implementation support at military treatment facilities and program evaluation services.

National Center for Telehealth and Technology (T2)

T2 leads the development of telehealth and technology solutions for psychological health and traumatic brain injury to improve the lives of our nation's warriors, veterans and their families. In 2008 the Defense Department established T2 to design, build, test and evaluate available and emerging technologies to support and enhance psychological health and traumatic brain injury recovery in the military community. The center also works to help minimize the stigma that may keep people in the military from seeking help.

DVBIC Defense and Veterans Brain Injury Center

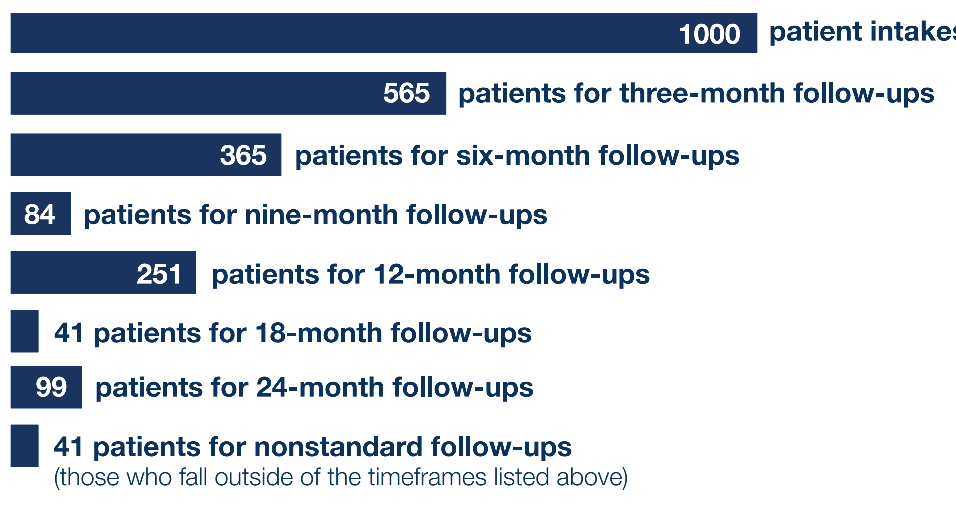
DVBIC's extensive collaborations allow for clinical innovation and research along the entire continuum of care of traumatic brain injury: from initial injury, whether deployed or in garrison, through medical evacuation to acute and post-acute medical settings, rehabilitation, and ultimately a return to family, community and work or continued duty. ***DVBIC personnel:***

- *Conduct traumatic brain injury clinical research, training and education*
- *Provide traumatic brain injury evaluation, treatment and follow-up care*
- *Create and distribute traumatic brain injury training and education products*
- *Serve as the Defense Department-designated office of responsibility for traumatic brain injury surveillance for the services*

2012 Accomplishment Highlights

DVBIC providers cared for service members with all severity levels of traumatic brain injury. In addition to speech, occupational and physical therapy, neurology and neuropsychology, DVBIC personnel also provide non-medical yet vital services.

Regional care coordinators located throughout the U.S. help ensure that service members who are changing duty stations or moving to the VA system transition smoothly and receive care and treatment if and as needed. They follow up with service members at several points post-injury to offer connections and resources. ***In 2012, DVBIC regional care coordinators handled:***



Regional education coordinators serve as outreach experts for DVBIC. They speak at Defense Department, VA, public health and training events; participate in fairs, Yellow Ribbon Reintegration Program events and other activities; provide information and generate awareness about traumatic brain injury; and provide assistance to service members. ***Here are key DVBIC regional education coordinator statistics:***

- *Delivered 461 presentations/trainings/briefs to reach 51,942 people*
- *Facilitated 282 presentations/trainings/briefs reaching 13,451 people*
- *Staffed 148 exhibits or resource tables at conferences and events where more than 67,000 people stopped by the table*
- *Conducted 12 exhibits or resource tables at United States Army Reserve Regional Support Command Yellow Ribbon Reintegration Program events reaching 8,518 people. Twenty traumatic brain injury briefs were also provided at Yellow Ribbon events*
- *Conducted six exhibits or resource tables at National Guard Yellow Ribbon Reintegration Program events reaching 2,911 people*

Military Acute Concussion Evaluation Updated

In 2006, DVBIC leaders created the Military Acute Concussion Evaluation (MACE) tool as an easy-to-use, durable card for combat medics and corpsmen to guide them through the evaluation of a service member suspected of having had a concussion. The MACE was updated several times, but there was increasing concern that some service members were memorizing word lists on the memory portion of the MACE and that the tool was not user friendly. In the fall of 2011, the surgeon general of the Army encouraged DVBIC to undertake a major revision of the MACE. A workgroup led by DVBIC and composed of members of DVBIC, DCoE and representatives of each of the services was assembled. In early 2012, the workgroup completed a fourth revision of the MACE that now includes six versions of the cognition/memory test, much clearer guidance for when to stop or to continue with the MACE, simplified instructions on how to obtain the information for each part of the MACE adjacent to the place where that information is to be obtained, and a balance test in the neurologic examination. The new release in February 2012 of MACE version 4.0 has been widely disseminated to all branches of the military and can be obtained free of charge through the DVBIC website.

Quarterly TBI Surveillance Report

DVBIC's surveillance function supplies the TBI world-wide numbers to multiple stakeholders via online publication. Additionally, DVBIC provides a Direct and Purchased Care report, a quarterly report from the Office of Surveillance to provide an overview of the TBI-related medical encounters, both direct and purchased care for all service members in the continental United States (excludes Guam and Puerto Rico) as well as outside the continental United States. Both surveillance efforts feed the report and are provided to service points of contact.

Research

DVBIC has 65 active research protocols to include:

- ***"Head to Head" Study:*** Phase one of this study, determining test-retest reliability of four commercially-available computerized neuropsychological assessment tools (NCATs), is complete. Enrollment is ongoing for phase two, which will test the validity of the four NCATs.

- ***DVBIC Research 15-Year Longitudinal Study:***
    - The Natural History of TBI within a Military Cohort — this 15-year study will improve our understanding of the natural history of recovery from TBI in a military cohort by developing a data repository that contains information related to service members' health/medical status, quality of life and health care needs.
    - Health Related Quality of Life in Caregivers of Service Members with Military Related Traumatic Brain Injury — this is a longitudinal evaluation of the effect of caring for a service member with TBI on the caregiver's overall health and well-being.

- ***The Study of Cognitive Rehabilitation Effectiveness in Mild TBI (SCORE!):*** This study will evaluate the effectiveness of cognitive rehabilitation in OEF/OIF service members with a history of mild TBI and persistent cognitive complaints. A supporting study to SCORE!, the Imaging Support of the Study of Cognitive Rehabilitation Effectiveness for mild TBI (iSCORE) will investigate longitudinal structural and functional neuroimaging changes over time that correlate with outcomes following the trial of cognitive rehabilitation. The SCORE! and iSCORE studies are ongoing and collecting data, with the SCORE! study enrolling more than 50 percent of the target number of participants in 2012.

- ***ProTECT III — Progesterone for the Treatment of TBI:*** This trial will determine if progesterone, a hormone normally found in the human body, is useful in limiting the amount of brain damage from TBI. DVBIC is participating in this national, multi-center trial through a protocol that is ongoing at the DVBIC site at Brooke Army Medical Center in San Antonio.

Online Efforts Redesigned, Expanded

DVBIC redesigned its organizational website in 2012 and maintained its sponsored sites, ***Brainline.org*** and ***BrainlineMilitary.org***. ***2012 multimedia highlights include:***

- *Launched Brainline.org and BrainlineMilitary.org as mobile sites*
- *Brainline.org won four awards; BrainlineMilitary.org received the best Military Mobile Site award*
- *Distributed more than 764,500 educational items through the websites*
- *Began in-theater distribution of Warfighter Sleep Kits to service members diagnosed with traumatic brain injury and a co-occurring sleep condition*
- *Began a webinar series, in partnership with DCoE, for medical providers, offering CE/CME credit*
- *Created an updated version of the TBI Signs and Symptoms fact sheet in English and eight other languages including Spanish, German, Romanian, Georgian, Estonian, French, Italian and Polish*
- *Developed the 2012 editions of the Military Acute Concussion Evaluation, Concussion Management Algorithms and Acute Concussion (mild TBI) educational brochure*
- *Developed a Moderate/Severe TBI fact sheet*
- *Developed the Family Needs line of brochures to address the following areas:*
    - Addressing Family Needs
    - Taking Care of Yourself while Caring for Others
    - Talking with Children about TBI
    - Talking with Children about Moderate or Severe TBI
- *Revised the Dizziness Symptom Management fact sheet based upon a new clinical recommendation*
- *Revised HEADS concussion card based on updated information from Defense Department instruction*
- *Developed two online training courses:*
    - "Identifying and Treating Military Traumatic Brain Injury"
    - "Deployment-Related Traumatic Brain Injury and Associated Co-Morbid Conditions"

DVBIC Website Receives WebAward

The DVBIC website, dvbic.org, won a 2012 WebAward for "Outstanding Achievement in Web Development" from the Web Marketing Association's annual WebAward Competition.

DVBIC Publications

DVBIC personnel produced 27 peer-reviewed publications in 2012, which highlighted research and clinical practice. In this list, the names of DVBIC personnel are bolded.

Belanger H.G., Vanderploeg R.D., Soble J.R., Richardson M., & Groer S. (2012). Validity of the Veterans Health Administration's traumatic brain injury screen. *Archive Physical Medical Rehabilitation*, *93*(7), 1234-9.

Cooper D.B., Chau P.M., Armistead-Jehle P., **Vanderploeg R.D.**, & Bowles A.O. (2012). Relationship between mechanism of injury and neurocognitive functioning in OEF/OIF service members with mild traumatic brain injuries. *Military Medicine, 177*(10), 1157-60.

Eastvold A.D., **Walker W.C.**, Curtiss G., **Schwab K., & Vanderploeg R.D.** (2012). The differential contributions of post-traumatic amnesia duration and time since injury in prediction of functional outcomes following moderate-to-severe traumatic brain injury. *Journal of Head Trauma Rehabilitation*.

Eastvold A.D., **Belanger H.G., & Vanderploeg R.D.** (2012). Does a third party observer affect neuropsychological test performance? It depends. *Clinical Neuropsychology, 26*(3), 520-41.

Finkel A.G., Yerry J., Scher A., & Choi Y.S. (2012). Headaches in soldiers with mild traumatic brain injury: findings and phenomenologic descriptions. *Headache, 52*(6), 957-65.

French L.M., Lange R.T., Iverson G.L., Ivins B., Marshall K., & Schwab K. (2012). Influence of bodily injuries on symptom reporting following uncomplicated mild traumatic brain injury in U.S. military service members. *Journal of Head Trauma Rehabilitation 27*(1), 63-74.

Griffin J.M., Friedemann-Sánchez G., Jensen A.C., Taylor B.C., Gravely A., Clothier B., Simon A.B., Bangerter A., **Pickett T.**, Thors C., Ceperich S., Poole J., & Van Ryn M. (2012). Invisible side of war: families caring for U.S service members with polytrauma. *Journal of Head Trauma Rehabilitation*, *27*(1), 3-13.

Huang M.X., Nichols S., Robb A., Angeles A., **Drake A.,** Holland M., **Asmussen S.**, D'Andrea J., Chun W., Levy M., Cui L., Song T., Baker D.G., **Hammer P.**, McLay R., Theilmann R.J., Coimbra R., Diwakar M., **Boyd C., Neff J.**, Liu T.T., Webb-Murphy J., Farinpour R., **Cheung C.,** Harrington D.L., Heister D., & Lee R.R. (2012). An automatic MEG low-frequency source imaging approach for detecting injuries in mild and moderate TBI patients with blast and non-blast causes. *Neuroimage, 61*(4), 1067-82.

Lange R.T., Brickell T.A., French L.M., Merritt V.C., **Bhagwat A., Pancholi S., & Iverson G.L.** (2012). Neuropsychological outcome from uncomplicated mild TBI, complicated mild TBI, and moderate TBI in U.S. military personnel. *Archives of Clinical Neuropsychology, 27*(5), 480-94.

Lange R.T., Iverson G.L., & Brubacher J.R. (2012). Clinical utility of the protein S100B to evaluate traumatic brain injury in the presence of acute alcohol intoxication. *Journal of Head Trauma Rehabilitation, 27*(2), 123-34.

Lange R.T., Iverson G.L., Brubacher J.R., Madler B., & Heran M.K. (2012). Diffusion tensor imaging findings are not strongly associated with postconcussional disorder 2 months following mild traumatic brain injury. *Journal of Head Trauma Rehabilitation, 27*(3), 188-98.

Lange R.T., Pancholi S., Bhagwat A., Anderson-Barnes V., & French L.M. (2012). Influence of poor effort on neuropsychological test performance in U.S. military personnel following mild traumatic brain injury. *Journal of Clinical and Experimental Neuropsychology, 34*(5), 453-66.

Lange R.T., Pancholi S., Brickell T.A., Sakura S., Bhagwat A., Merritt V., & French L.M. (2012). Neuropsychological outcome from blast versus non-blast: mild traumatic brain injury in U.S. military service members. *Journal of the International Neuropsychological Society, 18*(3), 595-605.

Livingston S.C., Goodkin H.P., Hertel J.N., Saliba E.N., **Barth J.T.**, & Ingersoll C.D. (2012). Differential rates of recovery after acute sport-related concussion: electrophysiologic, symptomatic, and neurocognitive indices. *Journal of Clinical Neurophysiology*, *29*(1), 23-32.

Lucas S., Hoffman J.M., Bell K.R., **Walker W.C.**, & Dikmen S. (2012). Characterization of headache after traumatic brain injury. *Cephalgia*, *32*(8), 600-6

Marshall K.R., Holland S.L., Meyer K.S., Martin E.M., Wilmore M., & Grimes J.B. (2012). Mild traumatic brain injury screening, diagnosis and treatment. *Military Medicine, 177*(8 Suppl), 67-75.

Meterko M., Baker E., Stolzmann K.L., Hendricks A.M., Cicerone K.D., & **Lew H.L.** (2012). Psychometric assessment of the Neurobehavioral Symptom Inventory-22: the structure of persistent postconcussive symptoms following deployment-related mild traumatic brain injury among veterans. *Journal of Head Trauma Rehabilitation, 27*(1), 55-62.

Meyer K.S., Boakye M., **Marion D.W.** (2012). Effects of non-neurological complications on traumatic brain injury outcome. *Critical Care, 16*(3), 128.

Miller K.J., Ivins B.J., & Schwab K.A. (2012). Self-reported mild TBI and post-concussive symptoms in a peacetime active-duty military population: effect of multiple TBI history versus single mild TBI. *Journal of Head Trauma Rehabilitation.*

Nakase-Richardson R., Whyte J., Giacino J.T., Pavawalla S., Barnett S.D., Yablon S.A., Sherer M., Kalmar K., Hammond F.M., Greenwald B., Horn L.J., Seel R., McCarthy M., Tran J., & **Walker W.C.** Longitudinal outcome of patients with disordered consciousness in the NIDDR TBI Model Systems Programs. *Journal of Head Trauma Rehabilitation, 29*(1), 59-65.

Silva M.A., Donnell A.J., Kim M.S., & **Vanderploeg R.D.** (2012). Abnormal neurological exam findings in individuals with mild traumatic brain injury versus psychiatric and healthy controls. *Clinical Neuropsychology, 26*(7), 1102-16.

Sullivan K.W., Quinn J.E., Pramuka M., Sharkey L.A., & **French L.M.** (2012). Outcomes from a pilot study using computer-based rehabilitation tools in a military population. *Studies in Health Technology and Informatics, 181, 71-7.*

Tate D.F., Shenton M.E., & Bigler E.D. (2012). Introduction to the brain imaging and behavior special issue on neuroimaging findings in mild traumatic brain injury. *Brain Imaging and Behavior, 6*(12), 103-7.

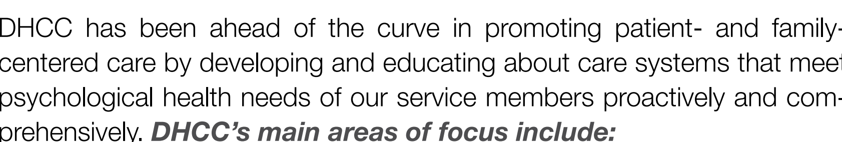
Walker W.C., **Nichols M.**, McDonald S., Ketchum J.M., & Cifu D.X. (2012). Identification of transient altered consciousness induced by military-related blast exposure and it's relation to post-concussion symptoms. *Journal of Head Trauma Rehabilitation*.

Watanabe T., Bell K.R., **Walker W.C.**, & Schomer K. (2012). Systematic review of interventions for post-traumatic headache. *PM&R, 4*(2), 129-40.

Wortzel H., Arciniegas D., Anderson C.A., **Vanderploeg R.**, & Brenner L. (2012). A phase I study of low-pressure hyperbaric oxygen therapy for blast-induced post-concussion syndrome and posttraumatic stress disorder: a neuropsychiatric perspective. *Journal of Neurotrauma* — Letter to the Editor.

Vanderploeg R.D., Belanger H.G., Horner R.D., Spehar A.M., Powell-Cope G., Luther S.L., **Scott S.G.** (2012). Health outcomes associated with military deployment: mild traumatic brain injury, blast, trauma and combat associations in the Florida National Guard. *Archives of Physical Medicine and Rehabilitation, 93*(11), 1887-1895.

DHCC Deployment Health Clinical Center



DHCC has been ahead of the curve in promoting patient- and family-centered care by developing and educating about care systems that meet psychological health needs of our service members proactively and comprehensively. ***DHCC's main areas of focus include:***

- *Provide health services*
- *Conduct outreach and provider education*
- *Conduct research, evaluation and program implementation support for health services delivery process improvement*

2012 Accomplishment Highlights

The Re-engineering Systems of Primary Care Treatment in the Military, more commonly referred to as RESPECT-Mil, is an innovative collaborative care model where primary care providers screen all their patients for PTSD and depression and manage their psychological health care in the primary care setting. ***Milestones include:***

- *RESPECT-Mil implemented six new sites increasing the program to 39 installations*
- *One million primary care visits were screened for PTSD and depression*
- *Of screened visits, 13.3 percent have been positive and 46.4 percent are associated with a depression or possible PTSD diagnosis*

RESPECT-Mil is transitioning into the Patient Centered Medical Home — Behavioral Health. A tri-service working group is blending two models, adding social workers and psychologists as internal behavioral health consultants to the RESPECT-Mil continuity of care model, which uses registered nurse care facilitators in primary care clinics. Sixty-five internal behavioral health consultants were trained and are now operating in clinics.

The DHCC director has served as a subject matter expert for media interviews, print articles, webinars and panel discussions about psychological health concerns and their treatment in the military. In particular, the director participated in "Common Ground: The Media, the Military, and Post-Traumatic Stress: A Workshop for Journalists" in November 2012 at the National Press Club in Washington, D.C.

Education and Outreach

In March 2012, DHCC sponsored an innovative public health project at Walter Reed National Military Medical Center specifically designed for substance abuse prevention in our military community. The "Rum and Vodka" project consisted of a dramatic reading centered around a young man who experiences problems at work, issues at home and financial difficulty as a result of his drinking. The reading was followed by a moderated, interactive audience and panel discussion. This project identified an issue faced by many service members, families and military units. "Rum and Vodka" encourages early intervention and identifies practical solutions for addressing and changing behaviors. The event generated much interest from high-level leadership and resulted in requests for 42 additional performances.

In May 2012, DHCC sponsored "Building a Network of Support," an event that featured a wounded warrior, who is a New York Times best-selling author, and his story of resilience and recovery to encourage the use of supportive services to reach optimal levels of psychological health and wellness.

Research

DHCC research efforts strive to support clinical, scientific and policy goals. The center is engaged in a wide-range of projects designed to scientifically evaluate health services for post-deployment medical concerns. ***Active research protocols include:***

STEPS UP is a $15 million randomized effectiveness trial testing several enhancements to the RESPECT-Mil and patient-centered medical home models for the management and treatment of PTSD and depression in active-duty service members. These enhancements add to existing models by offering evidence-based Web and telephone therapies, additional care management training in problem solving, behavioral activation and motivational interviewing, and the option for telephone care management. The trial launched at all six data collection sites: Joint Base Lewis-McChord, Wash., Fort Bliss, Texas, Fort Carson, Colo., Fort Campbell, Ky., Fort Stewart, Ga., and Fort Bragg, N.C. To date, more than 475 service members have been enrolled.

DESTRESS-T is a randomized controlled efficacy trial of telephonic cognitive-behavioral therapy for PTSD. The study received full Institutional Review Board review and approval of study protocol at Walter Reed National Military Medical Center and Uniformed Services University of the Health Sciences. Efforts are underway to hire clinical staff, and enrollment is anticipated to start in spring 2013.

DESTRESS-PC is a randomized trial of an online early intervention for combat-related PTSD in primary care. Data collection was completed, data analyzed, and the study was closed out, with reports sent to National Institute of Mental Health and Defense Department funding agencies. Results from the study were presented at meetings for International Society of Traumatic Stress Studies and American Public Health Association. A manuscript is currently in production for publication.

DHCC disseminated research findings on innovative methods for screening, treating and transforming systems of primary care treatment producing more than 30 presentations and publications.

Specialty Care Program Implementation Support

The **Tri-service Integrator of Outpatient Programming Systems (TrIOPS)** initiative is designed to identify and describe the scope, nature and effectiveness of post-deployment psychological health specialty care programs in the MHS. TrIOPS staff engaged with more than 25 specialty care programs in an effort to synchronize and optimize the quality of care to improve outcomes. The team provided direct guidance on use of evidence-based curricula, standard outcome measures and methods for determining program effectiveness.

The TrIOPS staff established a one-year joint evaluation project with the Trauma, Risk and Resiliency Postdoctoral Fellowship, Warrior Resilience Program in San Antonio, Texas, to assist their program to build evaluation capacity at inception. This consultation model in development is also being used for the specialty care program at Fort Benning, Ga., and has the potential for wider application across the MHS in the future. The TrIOPS team also developed a relationship with the U.S. Army Medical Department Patient Administration Systems and Biostatistics Activity, and it took the lead for the revision of the Intensive Outpatient Program/Partial Hospitalization Program Chapter in the Army Behavioral Health Coding and Scheduling Manual.

DHCC Publications and Presentations

Peer-Reviewed Publications

Gadermann A. M., **Engel C. C.**, Naifeh J. A., Nock M. K., Petukhova M., Santiago P. N., . . . & Kessler R. C. (2012, August). Prevalence of DSM-IV major depression among U.S. military personnel: meta-analysis and simulation. *Military Medicine*, *177*(Supplement), 47-59. PMID: 22953441.

Hawkins J., Nacev V., et al. (2012). Evidence-based screening, diagnosis and treatment of substance use disorders among veterans and military service personnel. *Military Medicine*, *177*(Supplement).

Liu X. & **Engel C.C.** (2012, December). Predicting longitudinal trajectories of health probabilities with random-effects multinomial logit regression. *Stat Med, 31*(29), 4087-4101. doi: 10.1002/sim.5514 PMID: 22825754.

Nacev, V. (2012). Diagnosis and treatment of service members: implications for health service psychologists. *National Register*, 38, 14-18.

Quigley K. S., McAndrew L. M., Almeida L., D'Andrea E. A., **Engel C. C.**, Hamtil H., & Ackerman A. J. (2012, June). Prevalence of environmental and other military exposure concerns in Operation Enduring Freedom and Operation Iraqi Freedom veterans. *Journal of Occupational and Environmental Medicine*, *54*(6), 659-664. doi:10.1097/JOM.0b013e3182570506. PMID: 22588478.

Ursano R. J., Benedek D. M., & **Engel C. C.** (2012, December). Trauma informed care for primary care: the lessons of war. *Annals of Internal Medicine, 157*(12), 905-906. doi: 10.7326/0003-4819-157-11-201212040-00542. PMID: 22965876.

Books and Book Chapters

Bates M.J., Bradley J.C., Bahraini N., & Goldenberg M.N. (2012). Clinical management of suicide with military and veteran personnel. In R.I. Simon & R.E. Hales (Eds.), *Textbook of suicide assessment and management (2nd ed.)* (pp. 405-451). Washington, D.C.: American Psychiatric Publishing.

Bowles S.V., Pollock L.D., **Moore M.**, MacDermid Wadsworth S.M., Anagnostopoulos V., Sun K.K., Campise M., Mueller W.P., Freeland D., Tarney M., Brognon K., Brogdon J., Alvarado A.A., & **Bates M.J.** (2012). Building resilience in the military family during and following deployment. In N.D. Ainspan & W.E. Penk (Editors) *When the warrior comes home: a family guide for transition from the front line to the home front* (p.p. 79-99). Annapolis, MD: Naval Institute Press.

Campbell J., Greenberg J., & **Weil J.** (2012). Confronting mild-TBI co-occurring PTSD symptoms in combat deployed service members. In J. Tsao (Ed.), *Traumatic brain injury: a neurologic approach to diagnosis, management and rehabilitation*. New York, NY: Springer.

Liu, X. (2012). *Survival analysis: models and applications*. Hoboken, NJ: Wiley .

T2

National Center for Telehealth and Technology

T2 works to establish best practices and quality standards for the treatment of psychological health conditions and traumatic brain injury across the Defense Department. ***T2's main areas of focus include:***

- *Seeks to identify, treat and minimize or eliminate the short- and long-term adverse effects of traumatic brain injury and psychological health conditions associated with military service*
- *Creates and evaluates technologies to support and enhance psychological health and traumatic brain injury recovery in the military community*
- *Explores and tests new innovative technologies such as virtual worlds, artificial intelligence, and augmented reality which can decrease cost and improve health*
- *Creates health care policy and procedures, and develops approaches for standardizing practice and technology guidelines that improve and insure connectivity through the services and VA.*
- *Develops strategies to improve access to care through convenient mobile technologies and websites, and is leveraging the large and growing popularity of smartphone use by service members*

2012 Accomplishment Highlights

Using standard and innovative solutions, T2 recommends, coordinates and manages the development of an integrated Defense Department telehealth system for the provision of quality, patient-centric psychological and traumatic brain injury health care services. In 2012, T2 produced the Defense Department's first strategic plan for telemental health and related telehealth activities.

T2 produced the fourth Department of Defense Suicide Event Report (DoDSER) Annual Report. The DoDSER standardizes suicide surveillance efforts across the services to support the Defense Department's suicide prevention mission. Historically, all the service branches used idiosyncratic suicide surveillance systems. In January 2008, the DoDSER was launched as a Defense Department solution to monitor all branches of the military. The DoDSER program is a collaborative effort among the Defense Department's Suicide Prevention and Risk Reduction Committee, the services' DoDSER program managers and T2. The DoDSER is used for a variety of suicide behaviors including suicides, suicide attempts and other suicide-related behaviors (e.g., deliberate self-harm or some cases in which only suicidal ideation is documented).

Website Development

T2 launched ***MilitaryKidsConnect.org***, an online community for military children (ages 6-17) that provides access to age-appropriate resources to support children from pre-deployment, through a parent's or caregiver's return.

Traffic to T2 websites has been on the rise, attesting to the increasing value that service members and their families assign to T2 offerings. ***In 2012:***

- *T2health.org recorded more than 55,000 unique visitors*
- *MilitaryKidsConnect.org counted more than 102,000 unique visitors*
- *AfterDeployment.org brought in more than 60,000 unique visitors*

Technology Enhancement Center

The Technology Enhancement Center, which opened Sept. 19, 2011, completed approximately 65 tests with 1,000 volunteers in 2012, improving the usability of T2's Web and mobile application user interfaces. The Technology Enhancement Center is the first Defense Department usability lab for health technology solutions.

Mobile Apps

New mobile applications, developed for service members, significant others and providers can help users cope with psychological health concerns and aid providers in diagnosis of PTSD and traumatic brain injury.

PE Coach

PE Coach is the first mobile application that supports elements of an evidence-based psychotherapy for PTSD. PE Coach was developed by T2 in collaboration with VA and Center for Deployment Psychology to assist providers in overcoming certain barriers to the implementation and dissemination of prolonged exposure therapy and to improve patient adherence to this treatment. Prolonged exposure therapy is one of the most effective evidence-based treatments for PTSD; however, there exist significant barriers for providers implementing this treatment and for patients adhering to it.

LifeArmor

This multi-topic application was derived from AfterDeployment.org to provide the user with knowledge and tools to cope with the many challenges faced by today's service members. The 17 topics covered in the LifeArmor app include sleep, depression, relationship issues and post-traumatic stress and more. Brief self-assessments help the user measure and track their symptoms, and tools are available to assist with managing specific problems. Videos relevant to each topic provide personal stories from other service members, veterans and military family members.

Positive Activity Jackpot

Positive Activity Jackpot provides suggestions for daily positive activities. Based on positive event scheduling, the active component of behavior activation, this mobile app helps with depression and self-harming behaviors, and can be used by individuals without any mental health difficulties as well.

BioZen

BioZen was developed as a pilot project to study the feasibility of using smartphones to receive signals from biosensor devices. BioZen is one of the first mobile applications to provide users with live biofeedback data from multiple wearable body sensors covering a range of biophysiological signals and display it on a mobile phone.

T2 Mood Tracker Update

The T2 Mood Tracker, originally released in 2010, now boasts expanded capabilities that offer an enhanced experience for both users and providers. The app allows users to monitor their moods on six pre-loaded scales: anxiety, stress, depression, brain injury, post-traumatic stress and general well-being. However, custom scales may also be created as desired. Users can rate their moods by swiping a small touch-screen bar to the left or to the right, and the ratings are then displayed on time-lapse graphs. Notes can also be recorded to document daily events, changes in medication, and treatment that may accompany or provoke mood changes. Working together, all of these features produce an accurate body of information that helps users and health care providers in making treatment decisions.

Breathe2Relax Update

At the end of 2012, Breathe2Relax was highlighted on the Dr. Oz Show. Following this promotional spot, Breathe2Relax counted more than 20,000 downloads in a single day.

Dissemination

T2 distributes its products through a variety of methods including conferences, on-site briefings, presentations at Yellow Ribbon Reintegration Programs and pre-deployment events.

- *Delivered 24 presentations at events from the American Telemedicine Association Annual Meeting and Exposition located in San Jose, Calif. to the DoD/VA Suicide Prevention Conference in Washington, D.C.*
- *Hosted five briefings for distinguished visitors including the under secretary of the Army, senior military leaders and staff delegations.*
- *Presented at three National Guard Yellow Ribbon Reintegration Program events reaching more than 2,600 people*
- *Staffed two exhibits and resource tables at local pre-deployment events*

Pre-deployment Telebehavioral Health Training

T2 provided in-person telebehavioral health training designed to provide deploying behavioral health professionals with the hands-on knowledge and skills necessary to deliver telebehavioral health services in theater. T2 conducted both quantitative and qualitative evaluations during and immediately following deployment. Thirty-six service members participated in and provided feedback on the pre-deployment training session. Twenty-seven of the 28 service members contacted provided valid feedback during the in-theater assessments. The in-person training was translated into the "Consolidated Telemental Health Telebehavioral Health Video-Teleconference" training course package providing an overview of the steps taken to conduct an in-person training activity, develop content and slide presentations and provide other training document templates (course agenda, marketing brochure) that can be used for future telebehavioral health training courses.

Social Media

T2 continues to leverage social media as an important platform for interacting with its audiences. The study, "Soldiers' Personal Technologies on Deployment and at Home," conducted at T2, shows that social networking is highly used by service members at home and in theater. According to the statistics, after email and search engines, service members use the Internet for social networking more than anything else. ***Some social media highlights include:***

- *T2 launched a new blog focused on mobile health*
- *Currently T2 is developing a MilitaryKidsConnect Facebook game in order to help connect deployed service members with their children*

Research

Virtual Reality Exposure Therapy Study

T2 was funded to execute a randomized, controlled trial comparing virtual reality exposure to prolonged exposure therapy for PTSD. This study recently completed year three of five and has enrolled 119 soldiers to date. Virtual reality exposure is one of the most promising innovative technology interventions currently under investigation to support the psychological health of warriors.

In-home Study

In-home telebehavioral health interventions can reduce many of the barriers that might prevent those in need from pursuing or accessing care. This study will establish the feasibility, safety and clinical efficacy of such treatments to support their broad dissemination. Participants are active

service members, National Guard members, reservists and veterans recruited at Madigan Army Medical Center, Wash., and the Portland VA Medical Center, Ore. Participant enrollment began in June 2012. Data collection is expected to be complete by August 2013. T2 will recruit 120 participants, and anticipates completion of 108 participants (54 per treatment group). Data analysis and the final report are scheduled to be completed by January 2014.

CONTACT/INTRuST

Since the start of combat operations in Afghanistan and Iraq, there is a significant increase in the numbers of service members with symptoms of traumatic brain injury, most related to blast injuries to the head. Self-management of mild traumatic brain injury via telephonic counseling has proven successful among civilians at reducing the effects of symptoms. Individualized scheduled telephone support, which has never been tried with service members, provides injury-related education, problem solving skills and focused behavioral strategies for issues (e.g., anxiety, depression) that commonly occur with mild traumatic brain injury. This project is a large scale effort to see if individualized scheduled telephone support can improve the general well-being of service members who have returned home from Afghanistan or Iraq with mild traumatic brain injury. The study is being conducted by the University of Washington in collaboration with T2 and is funded for four years by a grant from the Injury and Traumatic Stress Consortium. Enrollment in the study began August 2011. As of February 2013, 129 participants had been recruited towards a July 2013 goal of 400 from two sites.

T2 Publications

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