

## To DVBIC Site Directors:

Colleagues:

Earlier this year at our strategic planning meeting attended by senior leaders from DVBIC, the DoD, and the VA; there were several recommendations regarding further enhancement of communication.

One recommendation included responding to the increasing requests from our website for a newsletter directed to DVBIC supporters. This recommendation and public request was met earlier this year with the release of the quarterly "DVBIC Brainwaves" newsletter.

Another recommendation that came from site directors was to emphasize enhanced communication in the context of our growth and increased missions. Several suggestions emerged to allow for greater visibility of key initiatives and developments extending across all our core missions. One of these recommendations included providing an annual written summary of key initiatives and developments to site directors and other key stakeholders. This report is meant to address this request.

As many of you are aware, Dr. Warden's medical condition required her stepping down earlier than planned. This created a year of incredible challenge for me to step in as national director. I again want to personally thank all of you for the tremendous support given me over the past year through this time of transformation. The most exciting aspects of this duty has been when I have had the opportunity to visit our sites and see the energy and enthusiasm of our team all working together with a focus on providing the best state-of-the-art care to our wounded warriors. These efforts are having a tremendous impact. They have been positively recognized by the RAND report, the Institute of Medicine, NATO allies, and a variety of commissions as summarized in the report.

Having had the opportunity to travel to many of our sites, what is more evident to me than ever before is that the real strength and secret of our success is the dedication of our DVBIC people. I am honored to be able to work with this incredible worldwide team and am very grateful for all that you do.

Sincerely,

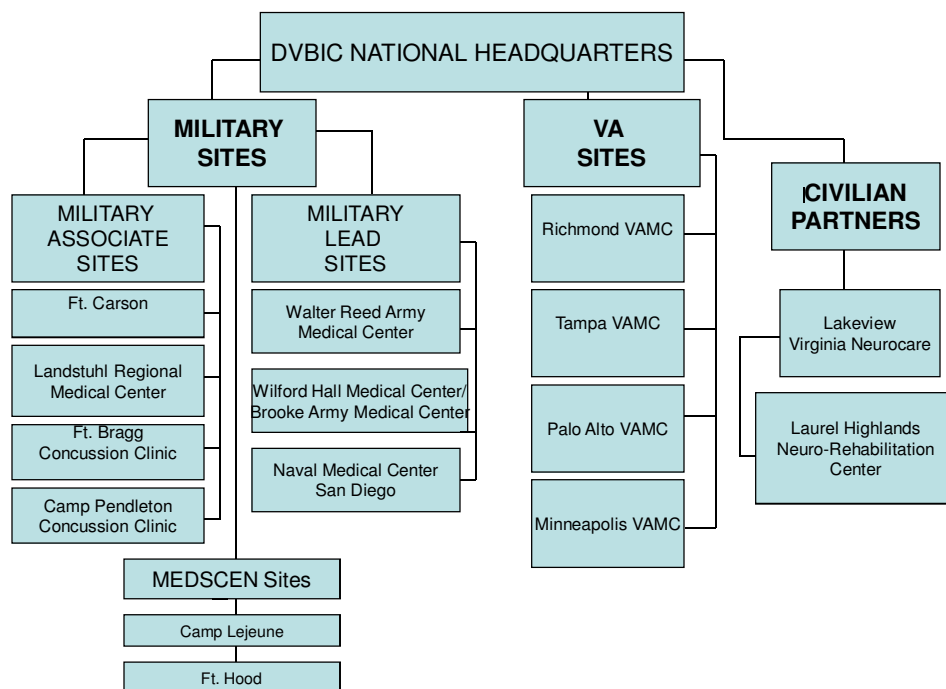
Michael S. Jaffee, M.D.

Col (s), USAF, MC, FS

National Director

## Introduction / Background:

The Defense and Veterans Brain Injury Center (DVBIC) is a broadly based, multifaceted, multi-site program created and funded by Congress as a collaboration between all branches of the Department of Defense (DoD) and Veterans Affairs (VA) with the combined designated core missions of enhancing traumatic brain injury (TBI) clinical care standards and initiatives, research, and education for the Service Members, Veterans, and their families. DVBIC currently provides clinical care at 16 sites across the United States and Europe. The newest sites added in 2008 include our clinical sites at Camp LeJeune, North Carolina and Ft. Hood, Texas. Research efforts are ongoing at 13 of these sites. The DVBIC organizational structure is depicted in the figure below.



## Unique Strengths

DVBIC has spent the past year re-focusing on the aspects that have been most vital to our meeting our mission. These continue to be focusing on the basics which are our core strengths.

1. Unique collaboration between the VA and DoD.
  - a. Our program has been used as a model as senior policy leaders consider how to achieve greater partnerships between the DoD and VA for other fields of medicine.
  - b. Participation from all DoD components facilitates inter-service coordination
2. Multi-disciplinary / Trans-disciplinary approach providing objectivity
  - a. The team approach allows us to always focus on objective best evidence and avoids potential influences from agenda or bias specific to a particular discipline
3. Model of coordination and collaboration
  - a. A collaborative team approach fosters greater participation from all stakeholders and avoids any complications of perceived turf or command and control.

4. Combination of clinical / educational initiatives within same organization as research initiatives
  - a. This allows for clinicians to better inform pragmatic research needs and the latest research to more rapidly improve clinical care

### **Major Expansion of Mission and Increased Coordination:**

2008 was a year of incredible growth for DVBIC with significant increases in responsibility. This includes the addition of a fourth core mission from the Office of the Secretary of Defense / Health Affairs (OSD/HA) as well as the designation as the primary operational TBI component of the newly established Defense Centers of Excellence (DCoE) for Psychological Health and Traumatic Brain Injury. To meet these challenges, we have put an increased emphasis on communication and coordination.

#### **Addition of Fourth Core Mission of Force Management by OSD/HA**

There are a number of initiatives we were assigned over the past year which has designated us either a DoD office of responsibility or a DoD executive agent. The office of the Secretary of Defense / Health Affairs designated DVBIC as the DoD office of responsibility for DoD TBI Surveillance for all services in addition to designating DVBIC office of responsibility for the DoD predeployment cognitive testing program. Both of these programs are summarized in this report. In addition to our prior designation and continued responsibility as executive agent for the DoD TBI registry, the additional executive agency designations for many congressionally mandated TBI research and educational programs are summarized in the below table and summarized in the appropriate section. It has been an honor to witness the transformation of DVBIC from serving as consultants and TBI subject matter experts to becoming operational offices of responsibility. We welcome the challenge.

#### **Summary of DVBIC High Level Mandates**

<b>Program</b>	<b>DVBIC Status</b>
DoD TBI Surveillance	Office of Responsibility per OSD/HA
DoD TBI Registry	Executive Agent per NDAA
DoD Predeployment Neurocognitive Testing	Office of Responsibility per OSD/HA
Independent Study of Automated Neurocognitive Tests	Executive Agent per OSD/HA
TBI Family Caregiver Panel and Curriculum	Executive Agent for Congressionally mandated program
15 Year Longitudinal TBI Study	Executive agent of Congressionally mandated Longitudinal Study

#### **Primary TBI Component of the Defense Centers of Excellence**

In recognition of its past accomplishments, DVBIC was invited to serve as the primary TBI operational component of the Defense Centers of Excellence. We are delighted to have this opportunity as it helps

provide DoD-wide distribution platforms that help support the increasing missions from the Office of the Secretary of Defense and Congress as summarized above. DVBIC is the only affiliated component of DCoE whose primary mission is TBI and is the only affiliate to be designated a primary operational center. We are honored to have these distinctions and welcome this affiliation and enhanced support from DCoE as their services are developed.

### **Increased Communication**

#### **1. VA Central Office:**

We are delighted for the increased coordination and collaboration we have had with VA Central Office to better coordinate our initiatives and assure the most effective collaboration. We are currently working with VA Central Office to have dedicated VA professionals assigned to interface directly with DVBIC Headquarters in addition to the stellar teams at our VA locations.

#### **2. Office of Secretary of Defense / Health Affairs (OSD/HA):**

In the context of our increased responsibilities, we have been committed to regular coordination with OSD/HA and service representatives from each branch. These initiatives range from formal quarterly reports to biweekly coordination meetings with designated representatives from each branch of service.

## **External and Internal Validation of DVBIC Initiatives**

In a year marked by increased scrutiny of initiatives and care of our wounded warriors, we have been fortunate to have had some tremendous validation of our initiatives. These have included: specific recommendations from the Institute of Medicine (IOM); coordination with NATO allies; and independent commissions and reports.

### **NATO and International Endorsement:**

A NATO exploratory meeting on mild TBI was convened this year in Paris, France. DVBIC was honored to have two of the three U.S. delegates selected. Participating NATO countries shared that many of our allied countries had adapted the DVBIC-developed in-theater screening tool, the Military Acute Concussion Evaluation (MACE) and the in-theater Clinical Practice Guidelines (CPGs) for the use of their military. Countries that consulted with DVBIC to establish their TBI care system include the United Kingdom and Canada.

### **Army TBI Task Force**

The Traumatic Brain Injury (TBI) Task Force Report Recommendation Summary (January 2008), was drafted to provide the DoD with an update on the status of TBI care. DVBIC was mentioned throughout the information paper. Excerpts are as follows:

- Utilize the Defense and Veterans Brain Injury (DVBIC) model of a joint/interagency network for TBI.
- Evaluate the impact of expansion of DVBIC sites to all MTFS.
- High quality and correct educational products have consistently come from the Defense and Veterans Brain Injury Center (p. 2)
- Extensive clinical research in DoD on TBI has been performed by or in collaboration with the DVBIC. That organization has presented and published most of the contemporary knowledge about TBI in the military during the past 5 years. (p. 17)

**Institute of Medicine Report on TBI:**

The IOM released a report entitled, *Gulf War and Health, Volume 7: Long-term Consequences of Traumatic Brain Injury* (December 4, 2008). This report included a number of recommendations for the DoD. Many of these recommendations correlated with newer DVbic initiatives and in some cases, the recommendations included usage of specific tools that have been developed by DVbic. The below table summarizes these recommendations.

Recommendation	DVbic Contribution to Recommendation
<p>The committee recommends that the Department of Defense use the Brief Traumatic Brain Injury Screen and the Military Acute Concussion Evaluation for every soldier who has a history of blast exposure (even of low-intensity blast exposure).”</p>	<p>BTBIS and MACE both developed by DVbic</p> <p>BTBIS has been adapted and is now included in PDHA and DVA TBI Screens.</p> <p>MACE is widely distributed throughout theater. OTSG provider survey indicates good use of tool in concussion evaluation</p>
<p>The committee recommends that the Department of Defense and the Department of Veterans Affairs support prospective, longitudinal studies to confirm reports of long-term or latent effects of exposure to blasts. Those studies should examine the consequences of blast-induced neurotrauma, recovery timeline, and any factors that improve or worsen outcomes.”</p>	<p>DVbic designated as executive agent for Congressionally Mandated 15 Year Longitudinal Study of TBI</p> <p>DVbic remains the Executive Agent for the DoD TBI Registry</p>
<p>“The committee recommends that the Department of Defense and the Department of Veterans Affairs support research on animal models of blast-induced neurotrauma.</p>	<p>DVbic working collaboratively with several agencies on the following blast studies:</p> <ul style="list-style-type: none"> <li>• DVbic in conjunction with AFIP has developed a TBI research center that will have the ability to facilitate animal model research and translational research with particular emphasis on the neurobiology of blast injury.</li> <li>• Helmet sensor study</li> <li>• Breachers study</li> <li>• Blast TBI Imaging Study (Acute)</li> </ul> <p>Military Blast-related TBI: a study of neuroanatomical and neurobehavioral sequelae and low cost interventions</p>
<p>The committee recommends that the Department of Veterans Affairs include, in the development of the Traumatic Brain Injury Veterans Health Registry (hereafter referred to as “the registry”), other service members who could provide a valid comparison for the analysis of outcomes. Comparison groups should be made up of injured persons without traumatic brain injury or blast exposure, uninjured deployed veterans, and uninjured non deployed but previously active-duty veterans.</p>	<p>DVbic named as primary DoD collaborator on the DVA Registry and is contributing to its development.</p>
<p>In an effort to understand the long-term outcomes of traumatic brain injury, including consequences that might be related to blast, the committee recommends that all deployed military personnel undergo predeployment neurocognitive testing. The committee also recommends postdeployment neurocognitive testing of representative samples of military personnel (including those with traumatic brain injury, those with other non-TBI injuries,</p>	<ul style="list-style-type: none"> <li>• DVbic Office of Responsibility for Predeployment Neurocognitive testing. (&gt;150,00 SMs tested to date)</li> <li>• DVbic completed post-deployment</li> </ul>

and uninjured service members without blast exposure).” (pg 10)	neurocognitive studies <ul style="list-style-type: none"> <li>• OSD/HA designated DVBIC as office of responsibility to perform independent Head to Head Study of Automated Neurocognitive Tests for post-injury evaluation</li> </ul>
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**RAND Report:**

The recent RAND report on Invisible Wounds of War: Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery (2008) evaluated DoD educational initiatives and resources and gave special recognition and kudos to DVBIC’s products including specific mention of their accuracy and quality as well as appropriateness of risk communication.

- “One of the DVBIC goals is to ensure expert case management and individualized, evidence-based treatment to each patient in order to maximize function and decrease or eliminate TBI-related disability. Working across agencies, the DVBIC provides outreach, educational resources and treatment services to help each TBI patient return to duty, work and the community.” (page 358)
- "Another area for improvement is the development of appropriate strategies and materials to educate the military community, service providers, and families about mild TBI. Materials developed for more-severe brain injury can misguide or unnecessarily alarm those suffering from only mild TBI.
- Military leadership, medical providers, service members, and families need to understand signs and symptoms of mild TBI and the importance of documentation, general guidelines in the management of mild TBI, and the expected course of TBI-related impairments and recovery. The Defense and Veterans Brain Injury Center has been increasing its outreach and training to meet this need." (page 324).

**Independent Review Group**

- “The Defense and Veterans Brain Injury Center provides information on traumatic brain injury care and offers educational material for providers and family members.” (p. 22)
- Some efforts have been made to identify traumatic brain injury in the combat theaters. LtCol (Dr.) Michael Jaffee, United States Air Force, instituted a traumatic brain injury study while deployed to Balad Air Base, Iraq in 2006 and started training providers at 3rdArmy Medical Command facilities in Iraq.” (p. 20)
- “The DVBIC was formed ‘to serve active duty military, their dependents, and veterans with traumatic brain injury (TBI) through state-of-the-art medical care, innovative clinical research initiatives and educational programs.’ 50 The DVBIC has multiple sites, across the U.S. and is headquartered at Walter Reed Army Medical Center.” (p. 17)

**Summary of DVBIC accomplishments by mission:**

The following summarizes DVBICs major projects and accomplishments from 2008 by core mission beginning with the new fourth core mission of Force Management. This is not a comprehensive listing of all the initiatives and programs conducted regionally by each of our 16 sites.

**Force Management**

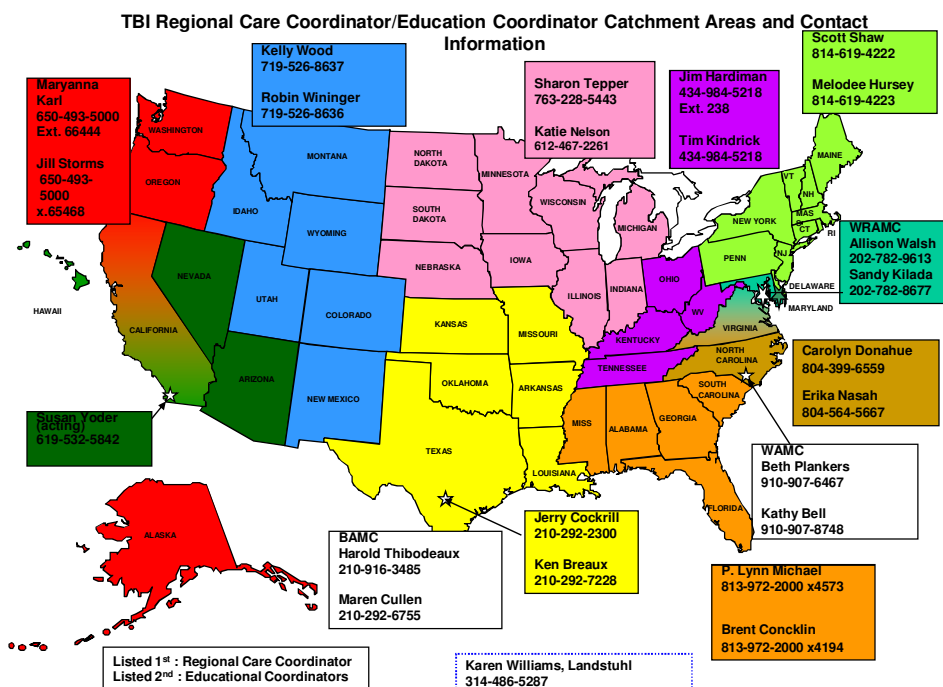
- TBI Surveillance: DVBIC named as the DoD office of responsibility by OSD/HA for developing/maintaining TBI database allowing capture of 25 variables on each patient with TBI. As the executive agency, DVBIC continues to work closely with the Armed Forces Health Surveillance Center and representatives from each branch of service to revise and upgrade surveillance methods and ensure accurate reporting. This included identification of standard International Coding of Disease (ICD)-9 coding of traumatic brain injury.

- Neurocognitive Assessment Tool Testing (NCAT): DVBIC named office of responsibility by OSD/HA for oversight of predeployment neurocognitive testing. This includes operational aspects as well as ensuring a comprehensive evaluation program.
  - Operational: Facilitate service compliance through coordination with Automated Neuropsychological Assessment Metrics Operations Center (ANAM OPS) and regular coordination with representatives from each branch of service. This includes facilitating implementation guidance and coordinating resources. To date, over 150,000 service members have been tested.
  - Evaluation: OSD/HA designated DVBIC as office of responsibility to perform independent Head to Head Study of Automated Neurocognitive Tests. Enlisted the support of the National Academy of Neuropsychology to appoint an oversight panel to assure that study design and analysis is unbiased. The study is evaluating at least five commercial, computerized neurocognitive tests in both the deployed setting as well as CONUS to determine sensitivity and specificity against a clinical 'gold standard' battery of neuropsychological instruments in TBI-related cognitive dysfunction.

### **Clinical Standards and Initiatives Mission**

- Clinical Practice Guidelines
  - Evaluation and Management of Concussion in the Deployed Setting CPG: Consensus conference held August 2008 revises previous deployed setting CPGs. In addition to national experts, DoD participants were appointed by the Surgeon General offices of each branch and included current deployed assets. Product was finalized and approved by Joint Chiefs and COCOMs. Adapted by USCENTCOM and Joint Theater Trauma System (JTTS) in November 2008 for immediate use.
  - Clinical Guidance for Acute and Subacute Evaluation and Management of Concussion in CONUS: Consensus conference with tri-service, VA, and academic representation held in January 2008 focusing on the acute and subacute management of patients. The recommendations were compiled into a guidance document and the materials approved for immediate release by Health Affairs (HA) in May 2008. Dissemination and education regarding use continues.
- Minimally Conscious International Workgroup:
- DVBIC sponsored and facilitated an international workgroup to develop a state-of-the-art pilot program for TBI patients who are minimally conscious. Feasibility report and recommendations for establishment of program was provided to senior leadership of DoD and VA. Senior leadership from VA and DoD used recommendations to expand and upgrade the VA Emerging Consciousness programs.
- Assisted Living Projects: DVBIC is congressionally mandated to work with VA to provide age-appropriate assisted living programs to severely injured TBI patients.
  - Pilot Program: Development of pilot program targeted for TBI patients utilizing the newest advances in assistive technology. Anticipated enrollment beginning February 2009.
  - VA program to contract assisted living services throughout country – DVBIC provided SMEs to VA workgroup evaluating existing assisted living programs to accept TBI eligible patients from the VA.
- TBI Care Coordination Program-
  - Initiated and stood up only DoD and VA program to track all TBI patients evacuated from OIF/OEF for any reason and ensure appropriate follow-up. Serves as TBI

resource repository and provides care coordination to injured service members. This program has served as primary TBI resource to other broader care coordination systems. Program has expanded to include 14 regions across the country as illustrated in the figure below.



## TBI Telemedicine

- Virtual TBI Clinic: DVBIC established the first DoD virtual TBI clinic to provide remote screening, assessment and management of TBI. Program is being integrated with AMEDD Tele-TBI initiative, as well as AF and Navy efforts to address similar resource issues. The DVBIC vTBI Clinic is able to accept patients at select North Atlantic Regional Medical Command sites and continues to evolve available services.
- TBI.consult@us.army.mil: Electronic consult service for providers encountering TBI patients in theater. Responses are generated by trained TBI clinicians usually within 4 hours of receiving consult.
- Personal Tele-rehabilitation using mobile Care (mCare) system: Program introduced for National Guard and reserve units. This program uses cell phones technology to enhance cognitive support through increased monitoring and communication between service member with TBI and their platoon sergeant or case manager. This is a joint venture with Telemedicine and Advanced Technology Research Center (TATRC) together with video teleconferencing technology utilizing personal computers specifically targeting returning service members from rural and medically underserved areas.
- Web based social networking - DVBIC is developing online TBI resources, web applications, and user forums which will allow patients, family members and providers to share common experiences and discuss challenges that relate to TBI in an environment that supports healing and personal growth.
- Clinical transition of polytrauma patients: DVBIC continues to support clinical transition of polytrauma patients between military and VA sites as needed by allowing interactive video communication between clinical teams, patients and families in remote locations.
- Use of cell phones to enhance cognitive support – joint venture with Telemedicine and Advanced Technology Research Center (TATRC) together with video teleconferencing technology utilizing

personal computers specifically targeting returning service members from rural and medically underserved areas.

### **Education Mission:**

- Family Caregiver Panel: DVBIC named as office of responsibility for oversight of the TBI Family Caregiver Panel that is developing a Family Caregiver curricula.
- 2<sup>nd</sup> Annual TBI Training event for Military Healthcare Providers: Over 800 providers representing 25 medical specialties attended this conference in Washington, DC (September, 2008). DVBIC sponsored the event and set the agenda of speakers and topics ranging from the care of those with severe to mild TBI, from acute care to community settings. Evaluations were positive with comments indicating clinicians were better equipped to care for military TBI following the conference.
- Brainline - [www.brainline.org](http://www.brainline.org) was launched in September 2008 as a collaboration with WETA to provide information on preventing, treating and living with traumatic brain injury. The sites focus is primarily civilian patients, families and providers. Links are available for military relevant information.
- America's Heroes at Work sponsored by the Department of Labor was launched August 2008 and designed to educate and encourage employers to hire veterans who have sustained a TBI and/or PTSD. DVBIC has co-branded TBI related information on their website. Americas Heroes at Work is launching a supported employment project for veterans in January 2009 on which DVBIC is collaborating.
- Partnered to develop first-ever post-doctoral fellowship in TBI – located at Boston VA
- United States Air Force Center of Excellence for Medical Multimedia – DVBIC provided subject matter experts and patient contacts for the development of a module on TBI.
- United States Army Proponency Office for Rehabilitation and Reintegration: provided subject matter experts from several DVBIC sites to develop a sophisticated series of TBI web based training modules for military personnel at all levels of responsibility.

### **Research Mission**

- 15 Year Longitudinal TBI Study: DVBIC named executive agent for study mandated by Congress to determine the long-term consequences of combat-related TBI.
- TBI Registry: DVBIC remains DoD office of responsibility for research database that records over 200 parameters on each TBI case as part of an ongoing registry project mandated by Congress. In 2008, was named by congress as the primary DoD point-of-contact to coordinate TBI registry elements with the National Institute of Disability Rehabilitation Research (Model Systems) and the VA to assure that TBI databases allow for comparative research.
- MACE Validation Study: Study to validate the use of the Military Acute Concussion Evaluation (MACE) in an austere environment. Study recently funded by Congressionally Directed Medical Research Programs (CDMRP) and is currently at IRB pending review.
- Longitudinal Study of Mild TBI: Study to evaluate the validity of the TBI screening tool used at large military bases, within the Post Deployment Health Assessment, and by the Department of Veterans Affairs (DVA). Study was funded by CDMRP and is currently at Fort Bragg IRB pending review.
- CDMRP studies on the effects of blast waves on biological and CNS tissue.
- Helmet mounted Sensor Study-Sensors prototype being finalized by Medical Research & Materiel Command (MRMC). Sensors to be placed in paratrooper helmets.

- Institute of Soldier Nanotechnology (ISN) - DVBIC collaborating on several projects with this group at Massachusetts Institute of Technology (MIT) for example rapidly deployable and combat field deployable drug packaging, development of model for associated electromagnetic pulses secondary to IED blasts, development of test material capable of mitigating blast shockwaves.
- DVBIC-Armed Forces Institute of Pathology TBI Research Center: Laboratory and infrastructure set up in conjunction with the Armed Forces Institute of Pathology focusing on translational applications of biophysics and neuropathology. The lab offers advanced imaging to include 7T and 9.4T MRI machines with the ability to perform cutting edge MR microscopy. The lab has obtained a CARS microscope which will allow for in vivo studies of the effects of blast on the brain. There is only one other such advanced instrument in the federal government at the National Institute of Standards and Technology (NIST). This collaboration has also led to initiating development of a DoD TBI Brain Bank with the enhancement of the whole brain imaging and focused pathological examination using a 40 cm 4.7T Bruker Magnetic Resonance Spectrometer. Development of novel MR associated infrastructure together with the University of Florida, Gainesville specifically an MR compatible split Hopkinson pressure bar.
- Other ongoing TBI Studies (single site and multi-center)
  - Characterization/Pathophysiology of TBI: Genetics/proteomics, TBI biomarkers, Breachers study.
  - Complications of TBI: Imaging Findings related to Blast- DTI study, pituitary dysfunction, auditory dysfunction, and PTSD with TBI.
  - Pharmacologic Intervention: sertraline, methylphenidate, Omega-3

## **Publications**

Authors from the DVBIC network have contributed over 20 articles or textbook chapters to peer-reviewed journals and publishers in 2008. These include two chapters to the well-known Textbook of Traumatic Brain Injury (in press) and several articles related to the screening of combat-related TBI, the Automated Neurocognitive Assessment Measure (ANAM) and other treatment modalities. In addition, DVBIC experts have led educational courses at national meetings to include the American Academy of Neurology and have also been invited as guest editors for the Journal of Neurocritical Care and the Journal of Neurorehabilitation.

Some of the more notable contributions in 2008 include: special issue of the Journal of Rehabilitation Research and Development edited by one of our site directors, Dr. Lew, which focused on TBI issues which featured articles from a variety of DVBIC sites covering many aspects of rehabilitation of TBI patients. At the end of the year, we were delighted by the release of an eagerly awaited multi-center randomized controlled trial of cognitive rehabilitation which was published in the Archives of Physical Medicine and Rehabilitation. A special issue of the Journal of Brain Trauma Rehabilitation focusing on TBI in OIF/OEF edited by a DVBIC site director, Dr. French, includes research from a variety of sites and is scheduled for publication as the Jan/Feb 2009 issue. In addition, an article describing the methods and techniques for the most advanced computerized simulation of brain and blast interface developed by the DVBIC partnership with the Massachusetts Institute of Technology and the Institute of Soldier Nanotechnology has been accepted for publication.

## Summary of DVBIC Collaborations

Our collaborations have extended significantly beyond the DoD and the VA. This year we interacted and collaborated with multiple different cabinet-level departments and received letters of appreciation and citations from four of these departments this year.

- DoD
  - Liaison to the Defense Health Board and TBI subcommittee
  - Office of Secretary of Defense / Health Affairs
  - Office of Joint Chiefs of Staff
  - Defense Centers of Excellence
  - Defense Advanced Research Projects Agency (DARPA)
  - United States Air Force
    - Center of Excellence for Medical Multimedia: provided subject matter experts and patient contacts for the development of TBI related materials.
    - Tri-service working committees.
    - Air Force Research Laboratory
    - Expeditionary Medical Support (EMED) School
  - United States Army
    - Proponency Office for Rehabilitation and Reintegration: provided subject matter experts from several DVBIC sites to develop educational materials for providers, patients and commanders.
    - Army Medical Department (AMEDD) Schoolhouse
    - Medical Research and Materiel Command
      - Blast Executive Agency
      - Telemedicine and Advanced Technology Research Center (TATRC)
      - Walter Reed Army Institute of Research (WRAIR)
      - United States Army Aeromedical Research Laboratory (USAARL) and helmet design as Personal Protective Equipment
      - Program Executive Office (PEO) Soldier and Soldier Survivability
    - Congressionally Directed Medical Research Programs (CDMRP) / JPIP
  - United States Navy
    - Bureau of Medicine and Surgery (BUMED)
  - Uniformed Services University of Health Sciences
    - Center for Regenerative Medicine
- Federal
  - Veterans Affairs
    - DoD/VA International Coding of Disease (ICD) TBI Coding Committee: workgroup established recommendations for ICD coding of TBI to facilitate tracking, continuity and appropriate care.
    - DoD/VA mTBI Evidence-based work-group: DVBIC clinicians participated in the workgroup to develop evidence-based guidelines for the evaluation and management of mTBI.
    - VA International Symposium on TBI
    - VA State of the Art Conference
  - Department of Health & Human Services: DVBIC cosponsored symposium on the use of deep brain stimulation in the treatment of TBI.

- National Library of Medicine (NLM): Providing expertise to the NLM to develop web-based TBI assessment for first responders of disasters utilizing personal data devices
    - National Institutes of Health (NIH) and National Institute of Neurologic Disorders (NINDS): co-sponsored several TBI related events.
    - Center for Information Technology (CIT) at NIH
    - Centers for Disease Control : partnered on educational initiatives and provide CPG review
    - Social Security Administration: provided subject matter expert testimony at hearings
  - Department of Education
    - National Institute on Disability and Rehabilitation Research (NIDRR): coordinating evaluation techniques to facilitate comparison
  - Department of Labor
    - Americas Heroes at Work
  - Inter-Agency Federal TBI Research Group
- Academic/Professional
  - American College of Radiology & SIEMENS: Collaborations for the research and development of imaging tools and techniques
  - American Association of Neuroscience Nurses (AANN): DVBIC funded and authored the “Nursing Management of Patients with Severe TBI” for AANN’s Clinical Practice Guidelines Series. The guidelines have recently been submitted to guidelines.gov for inclusion in the national evidence-based medicine database.
  - University of Virginia
  - Uniformed Services of the Health Sciences University
  - MIT
  - Oklahoma University
  - University of Pittsburgh Medical Center
  - University of Texas together with Wilford Hall – PET study on military mild traumatic brain injury
  - University of Manitoba – Nanotechnology of convection enhanced drug delivery
  - National Academy of Neuropsychology
- International
  - Japan:1<sup>St</sup> Annual US/Japan Goodwill Exchange
  - United Kingdom: Numerous meetings with medical command. Sharing of the MACE for screening of concussion in theater.
  - Israel: Invited for military medical exchange with Shores Conference
  - ROK: Invited for military medical exchange with ROK Surgeon General delegation
  - NATO: Two DVBIC personnel named to three person US Delegation to NATO Exploratory Team on mTBI
  - International Symposia on TBI and Psychiatric Comorbidities: DVBIC co-sponsored this event with the Congressional Brain Injury Task Force.
  - Co-sponsor of national meeting of International Brain Injury Association held in Lisbon, Portugal

- Athletics
  - National Football League (NFL): conference to examine research, clinical and educational areas as it relates to concussion. Also allowed discussion on similarities/differences between sports and blast related concussion.
  - Professional Golf Association: partnered for wounded warrior golf tournament
  
- Arts
  - Kennedy Center for the Arts: DVBIC working with VSA Arts at the Kennedy Center in pilot program utilizing the arts in the recovery of TBI.

## DVBIC Validation and Endorsements



*"The military now has more thorough reporting mechanisms, requiring that anyone affected by a blast or blunt trauma in theater go through an evaluation and screening. We have a single TBI registry and a single point of responsibility – the Defense and Veterans Brain Injury Center – to consolidate all TBI-related incidents and information."*

**Dr. Robert M. Gates, Secretary of Defense**



*"Thank you for DVBIC Staff's extensive efforts in support of our wounded service members."*

**RADM David J. Smith, Joint Staff Surgeon  
(medical advisor to the Joint Chiefs of Staff)**



*"We are fortunate to have the experienced collaborations of DVBIC as the primary operational TBI component of DCoE, with their continued track record of success."*

**BG Loree K. Sutton, MC, USA, Director of DCoE**

## Metrics Summary

Below is a summary of some key metrics.

Metric	Outcome
Number of OIF/OEF patients evaluated &/or treated since 1 January, 2003	8,837
Number of peer-reviewed manuscripts presented in 2008	20
Number of educational tools presented/delivered in 2008	28,862

## DVBIC Contracts and Subcontracts

At each MTF and VA site, we have a site director who is either GS or an active duty officer to assure that DVBIC activities are fully coordinated with the hospital and that all local requirements and obligations are fully met. In fulfilling our mission, we utilized a variety of contractors.

- Henry M Jackson Foundation
- Medical Technical Solutions
- Amdex
- Palo Alto Institute of Research
- Defense Web
  - CDFP
- Griffin, York & Krause
- Virginia NeuroCare, Inc.
- Swank Healthcare
- WETA
- MEDRED LLC
- Minneapolis Veterans Research Center
- Virginia Commonwealth University
- Hiram G. Andrews
- Army Research Lab

## **Preliminary Plans for 2009**

### Overall Objectives:

- I. Transforming from a network recognized for excellence as summarized in 2005 Journal of Brain Trauma Rehabilitation (Cope et al.) to a DoD executive agent and office of responsibility for many TBI programs and initiatives.
- II. Leveraging increased resources and services from Defense Centers of Excellence (DCoE) to meet new challenges as a DoD office of responsibility and assure coordination with DCoE component centers to include the National Intrepid Center of Excellence currently in development.
- III. Further expansion of network to additional Military Treatment Facilities and VA facilities as identified by senior DoD and VA leaders at DVBIC strategic planning session.

### Some anticipated projects include:

1. Evaluation of DoD Neuropsychological Computerized Assessment Testing program
2. DoD executive agent to coordinate with VA in navigating update of ICD codes for TBI
3. Evaluation of outcomes from DoD TBI Regional Care Coordination program
4. Expansion of DoD Virtual TBI Clinic program
5. Expansion of DoD TBI Registry and coordinating with VA and NIDDR Model Systems
6. Facilitate and Consult on development of civilian TBI networks for eligible service members and veterans
7. Continue commitment to needs of family members of TBI patients through launch and evaluation of DoD Family Caregiver curriculum
8. Accepting patients to high-tech Assisted Living pilot program
9. Conduct first-ever multi-site randomized controlled trial of methylphenidate
10. Launch first cohort of congressionally-mandated 15-year longitudinal study
11. Further development of DVBIC-AFIP TBI Research Center to conduct preclinical evaluations and further development of DoD Brain Bank.
12. Application of DVBIC-MIT/ISN advanced computer model for brain-blast interface
13. Interfacing with vestibular experts and Vision Center of Excellence as well as serving as a clinical network for the USUHS Center for Neurosciences and Regenerative Medicine

## **Summary**

With more than fifteen years of service and productivity, DVBIC continues to enhance the research and care related to traumatic brain injury. Keys to organizational success include engaging tri-service participation in important activities, utilizing DoD, VA, and certain civilian facilities as sites, and finally, maintaining a combination of operational, clinical and research missions. As the primary operational TBI component of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury, DVBIC will continue to expand and integrate TBI related programs across the DoD and VA and we trust that our new partnership with the Defense Centers of Excellence will facilitate the same continued successes in 2009.

As we enter the bicentennial year of the birth of Abraham Lincoln, let us hope in that 2009 we can continue to live by his words and “let us, to the end, dare to do our duty”.