OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable Ike Skelton
Chairman, Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

The enclosed report for calendar year 2009 includes descriptions of the activities for which funds were expended, a statement of the Department's priorities relating to the prevention, diagnosis, research, treatment, and rehabilitation of TBI and PH, including PTSD, and an assessment of the progress made toward achieving those priorities. We apologize that this report was delayed by our extensive coordination process.

Thank you for your continued support of the Military Health System.

Sincerely,

Charles L. Rice

Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable Howard P. "Buck" McKeon
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable Carl Levin
Chairman, Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable John McCain
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable James H. Webb
Chairman, Subcommittee on Personnel
Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable Lindsey O. Graham
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable Susan Davis
Chairwoman, Subcommittee on Military Personnel
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

Dear Madam Chairwoman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable Joe Wilson
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable Daniel K. Inouye
Chairman, Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable Thad Cochran
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable Daniel K. Inouye
Chairman, Subcommittee on Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Enclosure:
As stated

cc:
The Honorable Thad Cochran
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable David R. Obey
Chairman, Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Sincerely,

Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable Jerry Lewis
Ranking Member

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1200

JUN 29 2010

HEALTH AFFAIRS

The Honorable Norm Dicks
Chairman, Subcommittee on Defense
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

This letter is in response to Section 1634(b) of the National Defense Authorization Act for Fiscal Year 2008, which requires the Secretary of Defense to submit an annual report setting forth the amounts expended by the Department of Defense during the preceding calendar year on activities relating to the diagnosis, treatment, and rehabilitation of members of the Armed Forces with traumatic brain injury (TBI) and psychological health (PH) concerns, to include post-traumatic stress disorder (PTSD).

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Charles L. Rice, M.D.
President, Uniformed Services University of the Health Sciences
Performing the Duties of the Assistant Secretary of Defense (Health Affairs)

Enclosure:
As stated

cc:
The Honorable C. W. Bill Young
Ranking Member

Report to Congress
On Expenditures for Activities on Traumatic Brain Injury and Posttraumatic Stress Disorder for 2009

In Accordance with Section 1634 (b) of the National Defense Authorization Act For Fiscal Year 2008

Table of Contents

1.0 Introduction

1.1 Background

Traumatic brain injury (TBI) and the effects of military deployments on psychological health (PH), including posttraumatic stress disorder (PTSD), have gained greater visibility throughout the Department of Defense (DoD) and the Department of Veterans Affairs (VA). As a result, DoD, in coordination with VA and with the support of Congress, has increased attention on programs and initiatives designed to improve the diagnosis, treatment, and rehabilitation of members of the Armed Forces with TBI and PH concerns.

Since the first infusion of TBI and PH funding in the Fiscal Year (FY) 2007 Supplemental Appropriation, DoD has initiated and sustained more than 150 projects to address the recommendations outlined in various task forces and commissions (such as the President's Commission on Care for Returning Wounded Warriors, also known as the Dole-Shalala Commission, and the DoD Task Force on Mental Health). The appropriated funds for TBI and PH have enabled DoD to rapidly implement improvements in its consistency and capability responding to TBI and PH conditions across the full continuum of care within DoD. Efforts have focused on collaborative development and improvement of programs dedicated to prevention, protection, identification, diagnosis, treatment, recovery, research, and rehabilitation of Service members and veterans with TBI and PH concerns.

1.2 Purpose of this Report

This report is the second annual submission in response to specific requirements defined in Section 1634 (b) of the National Defense Authorization Act (NDAA) for FY 2008. Last year's report identified DoD priorities for TBI and PH in seven areas:

- Access to Care
- Quality of Care
- Resilience
- Transition
- Screening and Surveillance
- Leadership and Advocacy
- Research

The identified actions in the following subsections address each of the seven priority areas and provide detailed descriptions of completed actions, followed by a subsection for in-progress and planned actions. The unfulfilled actions under the seven priority areas will carry to the next annual submission for discussion. This report addresses TBI and PH conditions, including PTSD, as follows:

- The following funding tables contained in this section outline expenditures from FY 2007/2008 (Table 1), FY 2008 (Table 2), FY 2009 (Table 3) and FY 2010 (Table 4);
- Amounts allocated to the Defense and Veterans Brain Injury Center (DVBIC) (Section 2.0);
- Priorities, amount expended, and an assessment of select outcomes for activities relating to the prevention, diagnosis, research, treatment, and rehabilitation of TBI and PH concerns, including PTSD, in Service members during the years supported by the FY 2009 Appropriation (Section 3.0);
- Assessment of outcomes and progress made to date (Section 4.0); and
- Caring for patients with TBI and mental health (MH)[1] issues as captured in the Mental Health Accounting System (Section 5.0).

[1] Throughout this report, the terms mental health (MH), behavioral health (BH), and psychological health (PH) appear in various contexts. For purposes of this report, the following definitions help distinguish the difference in use of the terms:

mental health (MH) – clinically related treatment for a disorder

behavioral health (BH) – behaviors that are observable (e.g., alcohol, spousal, or substance abuse), and may include mental health

psychological health (PH) – overall psychological well-being, including mental health

TABLE 1: FISCAL YEAR 2007/2008 ($ millions)

	Appropriated Operations & Maintenance (O&M) [1]	Appropriated Research Development Test & Evaluation (RDT&E) [2]	Reprogrammed RDT&E [2]	Reprogrammed Procurement [3]	Total
Appropriated Amounts	$ 600.0	$ 300.0			$ 900.0
Less: O&M Extended to FY08/09	$ (75.0)				$ (75.0)
Less: O&M Reprogrammed to RDT&E and Procurement	$ (70.5)		$ 58.8	$ 11.7	
Less: Statutory withhold for Small Business Innovation Research (Small Business Act, Title15, U.S. Code (USC, Section 638)		$ (7.5)	$ (1.5)		$ (9.0)
Net Funding	$ 454.5	$ 292.5	$ 57.3	$ 11.7	$ 816.0
Amount Obligated	$ 416.0	$ 292.5	$ 57.3	$ 11.7	$ 777.5
Percentage of Net Funding Obligated	92%	100%	100%	100%	95%

[1] O&M funding as of September 30, 2008.

[2] Research Development Test and Evaluation funding as of September 30, 2009. RDT&E funds are FY 2007/2008 and continued to obligate through FY 2008.

[3] Procurement funding as of September 30, 2009. Procurement funds are FY 2007/2008 and continued to obligate through FY 2009.

TABLE 2: FISCAL YEAR 2008 ($ millions)

	O&M Funding [1]	Appropriated RDT&E [2]	Reprogrammed RDTE [2]	Reprogrammed Procurement [3]	Total
FY 2008 Supplemental Appropriation - RDT&E (portion of $273.8 appropriated for Battle Casualty/ Psychological Health Research)[3]		$ 114.0			$ 114.0
Reprogrammed from WII-SOC			$ 13.7	$ 7.2	$ 20.9
Total Available FY 2008 Funding		$ 114.0	$ 13.7		$ 127.7
Amount Obligated		$ 114.0	$ 13.7	$ 0.0	$ 127.7
Percentage of Net Funding Obligated		100%	100%	0%	100%

[1] O&M funding as of September 30, 2008.

[2] Research Development Test and Evaluation funding as of September 30, 2009. RDT&E funds are FY 2008 and continued to obligate through FY 2009.

[3] Procurement funding as of December 31, 2009. Procurement funds are FY 2008 and continued to obligate through FY 2010.

TABLE 3: FISCAL YEAR 2009 ($ millions)

	O&M Funding [1]	Appropriated RDT&E [2]	Appropriated Procurement [3]	Total
FY 2009 Supplemental Bridge Funding	$ 300.0			$ 300.0
FY 2009 Appropriation	$ 210.0	$ 90.0		$ 300.0
FY 2009 Supplemental Funding		$ 75.0	$ 20.0	$ 95.0
FY 2007/2008 Funding Extended to FY 2008/2009	$ 75.0			$ 75.0
FY 2009 Less: Statutory withhold for Small Business Innovation Research (Small Business Act , 15, U.S.C. 638)		$ (1.9)		$ (1.9)
Pending Reprogramming for Army Suicide Study with National Institute for Mental Health	$ (10.0)			$ (10.0)
Total Available FY 2009 Funding	$ 575.0	$ 163.1	$ 20.0	$ 758.1
Amount Obligated	$ 532.3	$ 28.9	$ 0.5	$ 561.7
Percentage of Net Funding Obligated	93%	18%	3%	74%

[1] O&M funding as of September 30, 2009.

[2] Research Development Test and Evaluation as of December 31, 2009. RDT&E funds are FY 2009 and continued to obligate through FY 2010.

[3] Procurement funding as of December 31, 2009. Procurement funds are FY 2009 and continued to obligate through FY 2011.

TABLE 4: FY 2010 ($ millions)

	O&M Funding[1]	Appropriated RDT&E [2]	Procurement	Total
FY 2010 Appropriation	$ 650.1	$ 120.0		$ 770.1
FY 2010 Less: Statutory withhold for Small Business Innovation Research (Small Business Act , 15, U.S.C. 638)		$ 0.0		
Total Available FY 2010 Funding	$ 650.1	$ 120.0		$ 770.1
Amount Obligated	$ 44.3	$ 0.0		$ 44.3
Percentage of Net Funding Obligated	7%	0%		6%

[1] O&M funding as of December 31, 2009.

[2] Research Development Test and Evaluation funding as of December 31, 2009. RDT&E funds are FY 2010 and continued to obligate through FY 2011.

2.0 Amounts Allocated to DVBIC

DVBIC serves Active Duty Service members, their dependents, and veterans with TBI through state-of-the-art medical care, innovative clinical research initiatives, and educational programs. In 2007, DVBIC became the TBI operational component of Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE). DVBIC obligated 100 percent of the $34.25 million in Operations and Maintenance funding, and $1.7 million in Procurement funding it received in FY 2009. For FY 2010, DVBIC is allocated $36.62 million in Operations and Maintenance funding.

3.0 Priorities, Amount Expended, and an Assessment of Outcomes Related to Improving Diagnosis, Treatment, and Rehabilitation for TBI and PH (including PTSD)

The plan for implementing the TBI and PH strategies is founded on seven strategic goals to transform the system of care addressing TBI and PH concerns for Service members and their families.

3.1 Access to Care

The primary objective of the access to care initiative is to ensure Service members and their family members have timely access to comprehensive health care related to TBI or PH concerns. This involves improved staffing and innovative delivery strategies including outreach and prevention services, primary-care-based

psychological health services, improved primary care capability for TBI, specialty psychological healthcare, specialized TBI care, and improved inpatient care.

3.1.1 Funding for Access to Care

	FY 2009 *	FY 2010 **	
	Obligated (K)	Funded (K)	Obligated (K)
TBI	$60,202	$80,487	$9,006
PH	$163,113	$229,025	$18,734

* As of September 30, 2009

** As of December 31, 2009

3.1.2 Description of Outcomes for Access to Care

DoD has emphasized a focus on ensuring Service members and their families have timely access to comprehensive PH services, and that Service members have timely access to PH services in deployed settings. The military Services received funding to hire providers in accordance with an interim MH staffing model that was created early in FY 2008. Between the second quarter of 2008 and the second quarter of 2009, the number of MH staff increased by 1,697 in DoD military treatment facilities (MTFs) and by 4,592 in the DoD TRICARE purchased care network.

Although efforts to increase providers have shown progress, challenges in meeting established hiring goals exist due to increased demand for MH services and a possible shortage of MH providers in DoD, particularly in historically underserved areas. To help mitigate this issue, DoD entered into a Memorandum of Agreement with the Department of Health and Human Services to use uniformed Public Health Service (PHS) mental health providers. More than 70 PHS officers have been hired as a result of this agreement.

To improve recruiting and retention, DoD established a MH recruiting and retention strategy to help develop new programs to attract and retain uniformed and civilian MH professionals. A Health Profession Incentive Working Group convened to ensure that incentives and special pays are adjusted annually to maximize retention of shortage skill sets. Additionally, DoD developed a policy for the "Implementation of Special Pay for Health Professions Officers (HPOs)" published on July 23, 2009, allowing DoD to offer MH professionals special pay and bonuses in an effort to recruit and retain them. The Services also began to aggressively recruit and retain MH providers to ensure better access.

VA offers a robust agency-wide Human Resources training program, which includes training at selected locations across the country, and it has extended this training to DoD. As part of this training effort, a joint DoD/VA recruiting

conference was held in July 2009 with 150 participants. Part of the training focuses on the communications tools and processes necessary to manage relationships with potential candidates and keep them updated throughout the hiring process.

DoD completed a review of current and new behavioral health (BH) and MH treatments and therapies for inclusion under TRICARE, based on established standards of care. Treatments are reviewed annually to permit updates for incorporation for coverage under TRICARE. As a result of the 2009 review, TRICARE published "A TRICARE Guide: Understanding Behavioral Health: Common Concerns, Helpful Resources, and How Your Benefits Work for You." This guide intends to help Service members understand and destigmatize PH issues, as well as know when to seek care. The guide provides valuable information about TRICARE benefits, guidelines regarding referrals and authorization for care, and who to contact for help. There is also information about conditions, symptoms, and possible warning signs.

TRICARE initiated the BH Provider Locator and Appointment Assistance Service, which is accessible on-line and by telephone. DoD's routine access standard of seven days for initial MH specialty care is for Active Duty Service members and TRICARE Prime beneficiaries (i.e., enrolled Active Duty family members, retirees and their family members), including wounded, ill, and injured Service members. [2] Entering FY 2009, 20-30 percent of Service members returning from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) deployments reported some form of psychological distress; the number referred for further evaluation or treatment has increased to 50 percent over the past year; and the percentage of those referrals who are subsequently seen and recorded as a visit, while variable, has reached as high as 70 percent.

As a key resource for the utilization of advanced technological TBI and PH care, DoD's National Center for Telehealth and Technology (T2) at the DCoE recommends, coordinates, and manages an integrated DoD telehealth system that uses a range of standard and innovative solutions. T2 works to set up the infrastructure and then partners with the Services and the TRICARE Regional Offices (Managed Care Support Contractors) who are responsible for providing direct health care services. This will extend the reach of the Services to underserved military beneficiaries, particularly the Reserve Component and those in historically underserved areas, by leveraging the Services, TRICARE, VA, and

[2] TRICARE Prime is a managed care option available in the North, South and West Regions, in areas known as Prime Service Areas, to all beneficiaries who are not entitled to Medicare due to age (65). Enrollment is required to participate in TRICARE Prime. When enrolled in TRICARE Prime, a primary care manager (PCM) is assigned, who provides most of the enrollee's care. PCMs make specialist referrals and coordinate with a regional contractor for authorization, find a specialist in the network and file claims on the enrollee's behalf. With TRICARE Prime enrollment, there are time and distance standards for care including wait times for urgent, routine, and specialty care.

civilian provider partnerships. DoD provides training to, coordination for, and oversight of a national network of systems delivering psychological healthcare via technologies. DoD collaborated with the VA's National Center for PTSD in three states – Massachusetts, California, and Hawaii – in the creation of Afterdeployment.org, a Web-based portal focused on post-deployment issues and the PH needs of Service members and their families. In coordination with stakeholders, DoD developed and published common access standards for DoD and VA MH services. DoD established a chartered Federal Priority Workgroup on Telehealth and Technology in February 2009 that meets monthly. To further assist telehealth treatment, a telemental health standard of care was created through the Office of the Chief Medical Officer.

To increase treatment following TBI, DoD through the Services has continued to develop its TBI programs. Targeted education and training of healthcare providers has continued to increase treatment capabilities at the MTFs. For those TBI providers and their patients located at remote military medical centers, the DVBIC Virtual TBI (vTBI) Clinic provides TBI screening, assessment, consultation and care via video teleconference. The vTBI Clinic is organized like a traditional clinic with multiple specialties (e.g., neurology, neuropsychology, pain management, rehabilitation, etc.) working together to meet the unique needs of each patient. Unlike traditional TBI clinics, however, direct specialty care is provided at a distance using interactive video teleconference through the collaborative assistance of local primary care providers. The DVBIC vTBI Clinic is part of a nationwide effort to increase access to specialty care and assist large military bases with Service member surges following deployment. The ability to provide remote neuropsychological assessment and headache management services has been the focus of vTBI Clinic initial operations at Fort Knox, Kentucky, and the Marine Corps Base at Quantico.

The DVBIC Office of Telemedicine also expanded the TBI consult service to include weekend on-call coverage by neurologists, neurosurgeons, and other TBI specialists able to assist deployed providers in the assessment and treatment of Service members with TBI. More than 65 e-mail consultations took place in 2009 addressing return-to-duty issues, TBI assessments, symptom management and care.

3.1.3 Description of Actions Planned for Access to Care

Although DoD is in the process of finalizing the policy memorandum for the integration of BH professionals into primary care facilities, the Services have already developed and begun implementing their plans to place BH professionals into primary care facilities.

The Center for Naval Analyses (CNA) completed the Psychological Health Risk Adjusted Model for Staffing (PHRAMS) in April 2009. CNA will submit the

sponsor review of the report, including research and information memorandums, and the PHRAMS application to DoD's office of Clinical and Program Policy in early 2010. The final model will provide a better understanding of actual staffing requirements and will help guide the Services in making appropriate adjustments to their hiring strategies.

DoD's T2 center at the DCoE, in partnership with Department of Veterans Affairs Pacific Islands Health Care System and Tripler Army Medical Center, set the stage to deploy a novel telecommunicaions capability to American Samoa. A modified shipping container, outfitted with three fully functioning telecommunicaitons offices, can bring TBI and PH assistance to eligible DoD beneficiaries.

3.2 Quality of Care

The primary objective of the Quality of Care initiative is to ensure that Service members and their families receive the best possible care by developing and publishing evidence-based clinical practice guidelines (CPGs) as well as clinical management guidelines in the absence of conclusive evidence. Another objective is to ensure availability of clinical training, tools, equipment, and guidance needed for state-of-the-art care.

3.2.1 Funding for Quality of Care

	FY 2009 *	FY 2010 **	
TBI	$12,581	$65,720	$732
PH	$20,615	$74,736	$1,028

* As of September 30, 2009

** As of December 31, 2009

3.2.2 Description of Outcomes for Quality of Care

In November 2007, DoD established the DCoE to maximize the health and care of Service members, veterans, and their families in all areas related to TBI and PH. This joint organization works with a collaborative network involving other federal agencies, academia, and public-private partners to lead clinical efforts toward developing excellence in practice standards, education and training, and comprehensive direct care for our military community with TBI and PH concerns. DoD has targeted its efforts in developing healthcare strategies for both TBI and PH through a comprehensive plan of care directed at each health condition and includes TBI care across the spectrum, beginning with prevention and early identification through treatment, rehabilitation and reintegration.

DoD and VA partnered in publishing CPGs for the management of mild TBI (mTBI) to be used to provide standardized treatment algorithms for

multiservice/multiagency use in support of efforts toward quality healthcare delivery. To improve early identification and rapid treatment of mTBI, DoD is working to update its mTBI CPGs for the deployed setting. These protocols mandate a medical evaluation following an event that may result in injury.

As a result of NDAA 2008 legislation, DoD began directing baseline pre-deployment neurocognitive testing through the Neurocognitive Assessment Tool (NCAT) program. The main objective of the NCAT program is to better inform return-to-duty determinations in the field following a possible TBI. Currently, DoD is using Automated Neurocognitive Assessment Metrics (ANAM) as the testing tool for this program. The capability to compare the baseline pre-injury neurocognitive scores (pre-deployment) with the post-injury scores can better inform and enhance the quality of clinical decision-making. DVBIC was named the office of responsibility within DoD for this project to facilitate multi-service collaboration and a Service workgroup was convened to establish protocols for implementation of this program.

As of December 31, 2009, baseline testing was obtained on 455,191 deploying Service members. Across Services, baselines are being obtained on 65 percent of deploying personnel. The percentage of Service members receiving baseline assessments before deployment has increased with the development of the program. DoD is in the final phase of developing an automated, supported system to support the DoD NCAT tool. Beta tests of the product are underway and the completed product is set for release to the Services in 2011, depending on testing results. This enterprise implementation will make NCAT results part the Service member's medical record and facilitate making baselines available for post injury comparison.

In PH care, DoD, through the DCoE, partnered with the existing VA/DoD Evidenced-Based Working Group (VA/DoD EBWG) to support the existing process of developing CPGs for PH (in FY 2009, contributing to CPGs for Bipolar Disorder, Major Depressive Disorder, Substance Use Disorders, and the ongoing revision of the PTSD CPG). A process was developed to identify the existing gaps in care, undertaking a comprehensive survey of the existing CPGs, noting limited guidance for those affected by co-occurring PH conditions. As a result, DoD adopted a means of filling these gaps in care through the development of independent guidance and the evaluation of existing external guidance, such as clinical guidance for mTBI and co-occurring PH conditions. DoD adopted a plan to develop provider guidance for areas unaddressed in the existing guidelines literature. DoD has augmented the existing process for the development of corresponding clinical support tools (e.g., patient handouts, provider pocket cards, algorithms, etc.) and initiated development of clinical support tools for Major Depressive Disorder, coordinating closely with the VA/DoD EBWG.

DoD, through DVBIC, holds an annual TBI military training conference, which in the past three years has provided education on the latest research and state-of-the-art tools and techniques for the assessment and management of TBI to more than 2,400 military and veterans healthcare providers. DVBIC partners with the Center for Deployment Psychology (CDP), which is a part of the Uniformed Services University of the Health Sciences (USUHS) and a component center of DCoE, 8-10 times each year to provide 4-6 hours of TBI education to TRICARE civilian MH providers. In 2009, DoD distributed more than 100,000 TBI education products for clinicians, patients and families. DVBIC currently has 13 Regional Education Coordinators based at MTFs, four VA Polytrauma Centers, and two civilian locations that provide on-site education for Service members, veterans, and families and who visit military and veterans sites throughout their region to provide education and materials. In addition, each of the Services continues to develop and improve its training and educational efforts as they relate to TBI.

DVBIC facilitated DoD collaboration with the VA on efforts with the National Center for Health Statistics (NCHS) to revise the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM), Volumes 1 and 2, codes for brain injuries, which resulted in the recent official approval of several changes. The ICD is the standard system of medical coding for all known diseases and health problems. Due to the prevalence of TBIs sustained by Service members deployed in support of OEF/OIF and the clinical challenges of TBI faced by healthcare providers, DoD and VA proposed changes that would allow better tracking of the number of TBIs sustained by Service members, the severity of injuries, and course of recovery after injury. The revised ICD-9-CM guidance for coding TBIs was recently published in AHLTA (the military's electronic health record).

3.2.3 Description of Actions Planned for Quality of Care

DoD continues to enhance and develop common training curricula for clinical providers across the Military Health System (MHS) and through the civilian care network in an effort to ensure standardized, quality care. These curricula will deliver consistent and effective training and education programs for a variety of audiences. Multiple agencies have established training curricula, such as CDP, which trains deploying providers within DoD, other federal agencies, and the civilian sector in the use of state-of-the-art, evidence-based treatments for PTSD and other PH conditions. CDP reports training 1,391 providers in empirically supported treatments for PTSD during FY 2009.

DoD and VA continue to work on additional coding changes related to TBI, which focus on cognitive and memory codes. If the NCHS accepts these changes at its March 2010 meeting, the joint DoD/VA effort will be complete and ready for implementation after October 2010.

The National Intrepid Center of Excellence (NICoE) is currently under construction and scheduled to open in summer 2010. Funded through non-DoD charitable contributions, this facility will be an advanced treatment, therapy, referral, rehabilitation, and reintegration support facility for Service members and veterans with TBI, PTSD, or complex PH concerns. Additionally, the NICoE will conduct research, test new protocols and provide comprehensive training and education to patients, providers and families while maintaining ongoing telehealth follow-up care across the country and throughout the world.

3.3 Resilience

Resilience promotion encompasses solid prevention and mitigation and is most pertinent to PH, although leaders can influence TBI prevention through enforcement and oversight of safety programs. This strategic goal focuses on the full continuum of PH to produce individuals who are more resistant to the stresses of deployment and combat. By using individually targeted approaches consistent with the Services' cultures and organizations, DoD will strengthen the PH of individual Service members and their families, while simultaneously strengthening individuals' bonds within their units and communities.

3.3.1 Funding for Resilience

	FY 2009 *	FY 2010 **	
	Obligated (K)	Funded (K)	Obligated (K)
TBI	$503	$0	$0
PH	$29,587	$56,970	$2,075

* As of September 30, 2009

** As of December 31, 2009

3.3.2 Description of Outcomes for Resilience

In May 2009, DoD launched a national outreach campaign, "Real Warriors, Real Battles, Real Strength," to combat the stigma around PH conditions and treatment and encourage psychological resilience. This public information campaign solicits the involvement of DoD, VA, and the general population to foster a culture of support for PH. Additionally, DoD is leveraging technology by implementing other interactive Web sites such as Afterdeployment.org, an Internet-based project focused on PH issues often experienced after deployment. Along with its emphasis on 24-hour access, the site allows for anonymous access in an effort to attract those to seek care who might otherwise avoid PH services.

The Services have created or expanded numerous programs to minimize the effect of deployments and have recognized that deployments affect more than the Service member. Services have implemented supporting initiatives to target each

Service's individual culture. The following paragraphs provide a short summary of the programs implemented throughout DoD and the Components.

DoD has contracted with the independent production company, "Theater of War Productions, LLC," to present "Theater of War," dramatic readings of Sophocles' Ajax and Philoctetes to military communities throughout the United States. These ancient plays timelessly and universally depict the psychological and physical wounds inflicted upon warriors by war. By presenting these plays to military audiences, DoD seeks to destigmatize psychological injury and open a safe space for dialogue about the challenges faced by Service members, veterans, and their caregivers and families. Each reading is followed by a town hall style audience discussion that is facilitated with the help and input of military community members. Presentations of "Theater of War" at multiple military installations to date have received rave reviews by Service and family members from all ranks, including a number of flag officers. Feedback strongly indicates it is achieving its de-stigmatizing and cathartic goals.

The Army's Resiliency Program, "Battlemind Transition Office," is a preventive approach intended to strengthen individual Service members, their families, their units and communities and enhance their ability to cope with stress. The Army has enhanced its "Marriage and Family Therapists Program," focusing efforts on soldiers who have returned from deployments with PTSD or depression symptoms and who have been identified by family members as destructive to a healthy functioning family.

The Naval Center for Combat and Operational Stress Control was established at the National Naval Medical Center in San Diego to offer PTSD-specialized knowledge and intervention, research support, and an interactive Web site. The Center will house a library for operational stress control content and best practices and will assist Service members and their families to achieve optimal psychological well-being and function.

The Air Force developed the Landing Gear Program, a pre- and post-deployment education program to enhance resiliency through risk factor education, symptom recognition, de-stigmatization of PH, and promotion of a culture that encourages individuals to actively notice if co-workers are becoming overwhelmed. The Services have developed DVDs and Web-based tools for patients, patient families and providers on prevention, screening, recognition, and treatment of deployment related PH issues.

The National Guard Bureau established the State Directors of Psychological Heath (DPH) program. The State DPH advises the Commander on relevant TBI and PH issues and helps establish essential linkages to support services for members who are demobilizing and returning to Reserve status. State DPHs will reside at each of the 54 Joint Force Headquarters, and Army National

Guard and Air National Guard Headquarters to act as the focal point for coordinating the psychological support for National Guard members and their families. To address transition issues for Reservists and their families, the Navy deployed Outreach Coordinators for the U.S. Naval Reserve into the field to provide outreach, support, and intervention.

3.3.3 Description of Actions Planned for Resilience Going Forward

Following the launch of the Real Warriors Campaign, DCoE established a monitoring process to collect data on the campaign's outreach tactics. This process includes compiling information regarding detailed Web site metrics, number, and tone of media stories, partnership requests, and social networking metrics.

By the end of August 2010, "Theater of War" is scheduled for presentation to military audiences at more than 50 military sites. "Theater of War" performances are conducted for military audiences nationwide at military sites, suicide prevention conferences, Service academies, war colleges, and medical schools. "Theater of War" is planning to conduct more than 100 performances in 2010.

DoD plans to develop family-focused education materials for TBI and PH, is leading a workgroup that attends to the needs of families, and is developing resource materials for TBI and PH issues and concerns, outreach strategies, and special challenges faced by military families. To address the needs of family caregivers of Service members and veterans who sustained a moderate or severe TBI, Congress mandated the development of a Family Caregiver Curriculum. DVBIC facilitated the writing of the curriculum by a White House-appointed panel of experts. This panel met Federal Advisory Committee Act requirements and thus operated as a subcommittee of the Defense Health Board. The product "Traumatic Brain Injury: A Guide for Family Caregivers of Service Members and Veterans" will be delivered to DoD in late spring 2010. Additionally, DoD is collaborating with The United Service Organizations to address the TBI and PH informational needs of Service members and their families.

DoD continues its partnership with the Sesame Street Workshop's award-winning "Talk, Listen, Connect" initiative that first launched in July 2006 with the PBS special "When Parents are Deployed," providing resources and emotional support to military families with young children coping with the challenging transitions in their lives, such as deployments. A second special, "Coming Home: Military Families Cope with Change," addresses family-related issues when parents come home changed due to combat-related experiences. A third release in the series will air in April 2010 as a PBS special, titled "When Families Grieve," in conjunction with the Month of the Military Child and Month of the Young

Child, and will be part of a multimedia, bilingual (English and Spanish) outreach kit for national distribution immediately following the April airdate.

3.4 Transition of Care

The objective of this goal is to improve the quality and effectiveness of treatment through transition and coordination of care across DoD, VA, and civilian networks for all duty statuses (Active and Reserve). This includes ensuring rapid and effective information sharing to support continuity of care and support across all levels.

3.4.1 Funding for Transition of Care

	FY 2009 *	FY 2010 **	
	Obligated (K)	Funded (K)	Obligated (K)
TBI	$0	$0	$0
PH	$7,948	$12,338	$169

* As of September 30, 2009

** As of December 31, 2009

3.4.2 Description of Outcomes for Transition of Care

Together, DoD and VA have partnered and continue to partner with private entities to open assisted living facilities to provide services and support to help individuals with TBI. The facilities will assist Service members with TBI to return to duty, work, and community.

DoD initiated a 5-year pilot program to assess the effectiveness of providing assisted living services for veterans with TBI. This has included the development of an age-appropriate, TBI-specific pilot program of Assisted Living using assistive technology combined with a multi-disciplinary approach at one of nine state-owned comprehensive rehabilitation facilities. This program has received state licensure and is undergoing review for accreditation by the Commission on Accreditation of Rehabilitation Facilities. Nineteen patients were treated by this program in 2009. In addition, DVBIC is coordinating with VA Central Office to enroll eligible participants in other parts of the country with civilian assisted living facilities. Four patients were placed at these civilian facilities through the end of the FY 2009 and VA Central Office is actively working to identify facilities for further placement.

Through DVBIC, DoD executes the TBI Regional Care Coordination program. DVBIC currently serves 14 geographic regions across the United States and one in Europe. Regional Care Coordinators (RCCs) are physically stationed at various MTFs, VA Polytrauma Centers and civilian sites within these geographic regions; but, RCCs also cover the surrounding geographic catchment

area in addition to their primary location. The RCCs provide outreach and support to Service members, veterans and their families to facilitate access and connection to the full scope of available TBI resources as close to home as possible. RCCs continuously network with other case managers; within DoD, VA and civilian health care systems; and within resources throughout their catchment areas in order to maintain an updated directory of TBI services.

3.4.3 Description of Actions Planned for Transition of Care

Service members' MH needs are often not met adequately when transitioning from one geographic location to another, particularly in underserved areas, and this can lead to their disengagement from treatment. DoD is developing the "inTransition" program to address the recommendations of the DoD Task Force on Mental Health to maintain continuity of care across transitions between MTFs and affiliated healthcare systems (e.g., VA, TRICARE). DoD will fund and implement "inTransition" beginning in FY 2010.

The success of the "inTransition" program will depend on substantial cooperation across the MHS as the assigned coaches coordinate their services with clinical leadership, familiarize themselves with other networks of care and services available, and provide close interface with Service members. As part of their contractual requirements, "inTransition" program administrators will educate providers and potential participants about the program and proactively promote the "inTransition" program and their services throughout the MHS, provider networks, and partner agencies.

3.5 Screening and Surveillance

The primary objective of the screening and surveillance initiative is to promote the use of consistent and effective assessment practices along with accelerated development of electronic tracking, monitoring, and management of TBI and PH concerns. DoD is incorporating screening and surveillance initiatives into the lifecycle health assessment process as screening tools are developed and validated.

3.5.1 Funding for Screening and Surveillance

	FY 2009 *	FY 2010 **	
	Obligated (K)	Funded (K)	Obligated (K)
TBI	$30,255	$25,623	$5,657
PH	$19,485	$15,993	$757

* As of September 30, 2009

** As of December 31, 2009

3.5.2 Description of Outcomes for Screening and Surveillance

DoD has created many screening and surveillance tools, measures, and assessments to improve recognition of PH and TBI healthcare needs. To implement better screening and surveillance programs related to both TBI and PH, DoD continues implementation of the Periodic Health Assessment (PHA), and has incorporated questions related to TBI and PH in the Pre-Deployment Health Assessment (pre-DHA), the Post-Deployment Health Assessment (PDHA), and the Post-Deployment Health Reassessment (PDHRA) forms. These requirements ensure that Service members at risk for TBI and PH problems are assessed for health problems at key phases in the deployment life cycle. Additionally, DoD has created the DoD Suicide Event Report (DoDSER), Military Pathways, and the Automated Tools and Outcome Measures (ATOM) programs.

The PHA is an annual assessment for each Service member and involves a self-reported health status filled out by the Service member followed by a face-to-face review and health exam by a credentialed provider. The pre-DHA, PDHA, and PDHRA provide a review of a Service member's health status, allow the Service members to share any concerns, and identify any needed clinical evaluations either before or after deployment. The pre-DHA must be scheduled within the 60 days preceding a Service member's deployment date. The PDHA occurs no later than 30 days before return from deployment or no later than 30 days after return, and the PDHRA occurs three to six months after return from contingency operations. As such, according to Health Affairs Policy, all of the Services have implemented the PHA, pre-DHA, PDHA, and PDHRA for all Active Duty, Reserve, and National Guard Service members. The Services report quarterly on these assessments to the Deputy Assistant Secretary of Defense for Force Health Protection and Readiness (FHP&R). Between January 1, 2003, and December 31, 2009, more than 1.6 million Service members completed a pre-DHA, more than 1.5 million completed a PDHA, and almost 950 thousand completed a PDHRA. These screening and assessment tools will continue to be evaluated and monitored regularly under guidelines established in the Health Affairs Policy, "Deployment Health Quality Assurance Program."

TBI screening occurs at several points and locations to include in theater, at Landstuhl Regional Medical Center for all Service members evacuated from theater for battle or non-battle injuries and illnesses, during the PDHA/PDHRA process, and upon entry into the VA health system. Positive screens are not diagnostic of TBI but do trigger a clinician interview for further evaluation. These numerous screening opportunities enable the identification of those Service members who require intervention. The end goal is to minimize those Service members who are first identified during the PDHA/PDHRA and the VA screening and to ensure early identification in theater.

To improve suicide prevention, in January of 2008, DoD launched the DoDSER, a sophisticated Web software system that allows the military to capture

detailed information about suicide events. The DoDSER enables DoD-level data collection and reporting of suicide events and risk/protective factors. This information will keep senior leaders current on risk factor data across all Service branches. Historically, each Service used idiosyncratic suicide surveillance systems. The first annual DoDSER report was released in January 2010.

DoD also has a mental health self-assessment program, "Military Pathways," underway that offers Service members and their families the opportunity to take anonymous PH and alcohol use self-assessments on-line, over the telephone, and through special events held at installations. DoD designed and implemented "Military Pathways" to offer Service members and their families the opportunity to identify their own symptoms and access assistance before a problem becomes serious. The self-assessments address PTSD, depression, generalized anxiety disorder, alcohol use, and bipolar disorder. After completing a self-assessment, individuals receive referral information that includes services provided by TRICARE, Military OneSource, and VA Vet Centers. DoD is also exploring other protocols that would involve both a component of early screening, monitoring, and re-assessment of PH concerns following potentially traumatic events.

For military PH, DoD has continued support for the Automated Tools and Outcome Measures program that develops, supports, and disseminates the Automated Behavioral Health Clinic (ABHC) tool, and other automated PH tools that collect and standardize PH information on issues that include PTSD, depression, anxiety, anger, and alcohol use. The ABHC is a software system custom-tailored to the unique business practices of military clinics. It can be adapted to any mental health clinic wishing to benefit from a standardized, fully automated patient check-in, treatment, or outcome process. The ABHC has two Web portals of entry, one for patients and one for providers. Both portals are available via a secure Internet connection. Information about the patient's medical history, childhood trauma, mental health stigma, marriage quality, combat exposure, family, and military career are collected. Future plans include increased integration across DoD, sub-specialty clinic customization, and increased functionality, such as provider assignment of modules, home availability, ad-hoc reporting, DoDSER integration, and AHLTA connectivity.

Furthermore, DoD has coordinated with stakeholders through DCoE to co-sponsor a common data elements workshop to help formulate common research and surveillance definitions that will provide a standardized method of reporting the extent of relevant problems. Additionally, the Services have improved their tracking and data collection through systems (e.g., the Marine Corps Wounded, Ill and Injured Tracking System.)

3.5.3 Description of Actions Planned for Screening and Surveillance

DoD's planned actions related to improving screening and surveillance of Service members for TBI and PH concerns include linking administrative records with VA, expanding use of ABHC and improving the PDHA and PDHRA.

Linking administrative records with VA involves collecting and linking operational and health data to advance treatment practices for TBI and PH. Performance measures, measure definitions, planned completion date, and office of primary responsibility assignments are being finalized.

DoD continues to develop the ABHC as a common platform for TBI and PH screenings through DCoE. The ABHC is a software application for behavioral health patient assessments. The Armed Forces Health Surveillance Center will receive data collected through the ABHC and DoD will work to validate clinical screening and assessment instruments deployed in the ABHC platform.

To fully examine the quality of the PDHA and PDHRA, DoD will complete two pilot studies that examine the utility and validity of population-based post-deployment assessments. Once the data and scientific summary reports from these pilot studies are released and analyzed, DoD will use the results to inform discussions and create follow-on actions regarding the utility of institutionalizing post-deployment neurocognitive assessments within the DoD life-cycle assessment model. Additionally, DoD will create a multi-Service working group to determine revisions for the pre-DHA, PDHA, and PDHRA forms. DoD also plans to use established working groups to address PDHRA archiving concerns identified in a November 2009 Government Accountability Office report. Finally, DoD has reviewed the content areas covered under the PHA, pre-DHA, PDHA, and PDHRA, and is evaluating the need for modifications.

3.6 Leadership and Advocacy

A priority of DoD is to strengthen and maintain a culture of leadership and advocacy, creating a supportive environment, free of stigma, for Service members and veterans in need of clinical care for PTSD or other mental health concerns, as well as TBI. Taking care of people is a leadership responsibility, and the program encompasses this responsibility at every level of leadership, with special emphasis on families and the community environment.

3.6.1 Funding for Leadership and Advocacy

	FY 2009 *	FY 2010 **	
	Obligated (K)	Funded (K)	Obligated (K)
TBI	$30,255	$8,271	$0
PH	$171,219	$171,219	$6,152

* As of September 30, 2009

** As of December 31, 2009

3.6.2 Description of Outcomes for Leadership and Advocacy

DCoE's mission is to be the leader in prevention, resilience, identification, treatment, outreach, rehabilitation, and reintegration programs for TBI and PH to ensure DoD meets the needs of the nation's military communities, Service members, and families. DCoE has reached full operational capability.

The Office of the Deputy Assistant Secretary of Defense for Clinical and Program Policy (C&PP) reviewed current oversight and administrative policies and procedures regarding command referrals. C&PP is establishing new procedures for command notification and command referrals via the policy, "Revising Command Notification Requirements to Dispel Stigma in Providing Mental Health Care to Military Personnel."

3.6.3 Description of Actions Planned for Leadership and Advocacy

DoD plans to establish a pilot program to assess the effectiveness of DoD-wide leadership training core curricula's impact on PH. Based on the results of the assessment, DoD plans to fully implement PH curricula by July 2010 in all DoD-wide leadership training.

3.7 Research and Development

The overall goal of TBI and PH research programs is to prevent, mitigate, and treat the effects of traumatic stress and TBI on function, wellness, and overall quality of life for Service members, as well as their caregivers and families. Key priorities of the research programs complement ongoing DoD initiatives to ensure the health and readiness of our military forces, and to support DCoE in its efforts to advance and spread knowledge, enhance clinical and management approaches, and facilitate other vital services to best serve the needs of Service member families impacted by TBI or PH concerns.

To establish key research priorities and needs in the current scientific literature, the Department follows a fair and rigorous process of review similar to that of other federal funding agencies, such as NIH. A panel composed of renowned experts (e.g., scientists and clinicians) and disease survivors, identify the priorities for the year.

These priorities focus on areas that will move the field of research forward, and may include needs for knowledge of the disease, unfunded or underfunded approaches to preventing, diagnosing, treating, or curing the disease, or resources needed to conduct research (such as support for new investigators, training for future investigators, biospecimen networks with clinical databases, proteomic and/or genomic microarray databases, or other resources). To address these priorities, requests for research proposals are carefully drafted to solicit proposals from investigators to research the priorities. Submitted proposals are peer reviewed by a panel of renowned experts and disease survivors to evaluate both proposed budget and the science of each submission. Proposals are compared against others in the specialty field in order to identify proposals with the greatest programmatic relevance, those that most completely address the year's priorities, as well as disease relevance, and innovation, among other factors.

DoD initiated multiple individual research projects as well as three multidisciplinary consortia to fill knowledge needs in the TBI and PH fields. These three consortia have been very productive since awarded in 2008. The PTSD/TBI Clinical Consortium has approved eight clinical trials for immediate execution. Those trials include:

- "The Effects of Telephone Follow-up on Outcome for Military Personnel with Mild TBI/PTSD";
- "Brain Indices of Risk for PTSD after Mild TBI";
- "A Randomized Clinical Trial of Glyburide for TBI";
- "Proof-of-Concept Trial of Ganaxolone in PTSD";
- "Randomized Control Trial of Methylphenidate, Galantamine and Placebo for the Treatment of Cognitive Complaints and Deficits in TBI and/or PTSD";
- "A Pilot Safety and Feasibility Study of High Dose Left Prefrontal Transcranial Magnetic Stimulation to Rapidly Stabilize Suicidal Patients with PTSD";
- "Initial Randomized Controlled Trial of Acceptance and Commitment Therapy for Combat-related Distress and Impairment"; and
- "Tianeptine (JNJ39823277) in the Treatment of Chronic Post-traumatic Stress Disorder."

The PTSD Multidisciplinary Research Consortium is at various stages of regulatory approval, patient enrollment, and study execution for 14 studies, including:

- "Causal Modeling, Meta-Analysis, and Predictors of Trajectory for the Omnibus Dataset";

- "Mental Health in the Context of War: Genetic and Environmental Factors";
- "Longitudinal Examination of Changes in Hypothalamic Pituitary Adrenal Axis Response to Stress in Military Subjects";
- "Neuroimaging Studies of PTSD and PTSD Treatment among combat veterans";
- "Prevalence of Fibromyalgia in PTSD Patients and Family Members";
- "The Impact of the Treatment of PTSD on Comorbid Insomnia and Pain";
- "Mechanisms of Vulnerability to PTSD: The Role of Early Life Stressors";
- "Outcomes of Prolonged Exposure and Cognitive Processing Therapy for the Treatment of Combat Operational Stress Reactions in Deployed Settings";
- "Secondary Prevention of PTSD and Chronic Pain after Traumatic Orthopedic Injury: A Randomized Clinical Trial";
- "Individual PE vs. Couples' Cognitive-Behavioral Therapy for Combat-Related PTSD";
- "Prolonged Exposure Therapy for PTSD in Burn Patients";
- "Alcohol Use Disorder in PTSD Patients Treated with SSRI's";
- "Cognitive Processing Therapy for Combat-Related PTSD"; and
- "Prolonged Exposure for PTSD among OIF/OEF Personnel: Massed vs. Spaced Trial."

The TBI Multidisciplinary Research Consortium has approved two protocols, and 11 animal studies are in progress. The protocols include observation and intervention clinical trials to improve the diagnosis of mTBI, and characterizing and rehabilitating mTBI using temporally adaptive, functional Magnetic Resonance Imaging. The animal studies focus on characterization of animal models of mTBI and development of new and innovative treatment strategies for mTBI, including 10 individual collaborative projects (five projects on neuroprotection and five projects on regeneration). Extracts describing each of the consortia and other PH/TBI focused awards can be found at: *http://cdmrp.army.mil/*.

Cooperating with the National Institute of Neurological Disorders and Stroke (NINDS), VA, and the National Institute on Disability and Rehabilitation Research (NIDRR), DoD participated in a workshop on PH/TBI Research and Surveillance to help develop common data elements and reach consensus on definitions, metrics, outcomes and instrumentation. Common data in PH/TBI research allows better comparisons to be made across studies. The results of this workshop will include

guidelines and a database of data elements made available on the NINDS Common Data Elements Web site at: *http://www.nindscommondataelements.org/*.

3.7.1 Funding for Research and Development

	FY 2007	FY 2008		FY 2009 *		FY 2010 **	
	Obligated (K)	Funded (K)	Obligated (K)	Funded (K)	Obligated (K)	Funded (K)	Obligated (K)
TBI	$ 146,250	$79,452	$79,452	$163,100	$28,900	$120,000[1]	$0
PH	$ 146,250	$34,636	$34,636				

[1]Includes appropriated Congressional add ($90M) as well as Overseas Contingency Operations Supplemental add ($75M), less Small Business Innovation Research withhold. Amounts funded for TBI and PH research will be updated once the acquisition process is completed.

*FY 2009 numbers as of September 30, 2009

**FY 2010 numbers as of December 31, 2009

3.7.2 Description of Outcomes for Research and Development

In FY 2009, DoD initiated individual research projects as well as multiple clinical consortia to fill knowledge needs in diagnosis and treatment of TBI and PH concerns, becoming one the world's leading sponsors of such research. Extracts describing each of the awards can be found at: *http://cdmrp.army.mil/*.

3.7.3 Description of Actions Planned for Research and Development

To fully support reduction of suicide risk factors in the military, DoD initiated a $10 million reprogramming action from the operations and maintenance funds appropriated to the Defense Health Program for TBI and PH. These dollars will be used by the Army to conduct a suicide prevention study with the National Institutes of Health.

To further develop advances in regenerative medicine, a $70 million partnership was established between the Uniformed Services University of the Health Sciences and the National Institutes of Health to form the Center for Neurosciences and Regenerative Medicine.

To better understand long-term sequelae and outcomes of TBI, DVBIC facilitates the congressionally-mandated 15-year longitudinal study of combat TBI. DVBIC is collaborating with the Uniformed Services University Department of Preventive Medicine and Biometrics in this endeavor.

DoD oversees the coordination and publication of a Research Strategy Plan that includes a long-term plan for TBI and PH research. The plan details the necessity of a database that will document research initiatives across all Services and the corresponding funding for the initiatives. DoD has developed a spending plan for the FY 2009 Congressional Special Interest program and will publish

Broad Area Announcements for those projects. The following list enumerates the research needs in TBI and PH research that have been publicized.

3.7.4 Traumatic Brain Injury and Psychological Health Research Needs:

- Identification/validation of risk factors associated with PTSD and co-morbid conditions that can be used to develop improved metrics and tools for assessment of combat-related psychological health disorders.
- Identification of risk factors for the safety of deployment of Service members for multiple tours.
- Identification of barriers to treatment for PH issues and TBI, especially for Service members returning to the civilian community from their Reserve and National Guard status.
- Basic research aimed at improving understanding of psychological resilience in military populations that can be used to develop and/or validate novel strategies to reduce psychological health disorders.
- Validated resilience-building interventions demonstrating improved or enhanced mental health and/or well-being.
- Studies of novel and early interventions using mono-, adjunctive, or combination therapeutic approaches for combat-related psychological health disorders.
- Basic research on the biological mechanisms that underlie human emotional reactions to combat stress and associated clinical symptoms or disorders.
- Basis of neuropsychiatric disorders associated with combat-related PTSD and TBI.
- Studies to examine cellular re-growth and interconnection strategies and therapies in the central nervous system (brain and spinal cord).
- Investigation of basic mechanisms of cellular re-growth.
- Examination of pharmaceutical or other approaches to neural re-growth and injury including, blast-related cell damage and resulting effects on neurological response.
- Research on evidence-based prevention and rehabilitation strategies for TBI, PTSD, and co-occurring conditions encompassing cognitive, motor, emotional, psychological, and sensory functioning.
- Research to improve rehabilitative approaches to the treatment of PTSD, TBI, and co-morbid conditions. Research must employ rigorous validation criteria to assure safety and efficacy, and proper control groups and sham conditions where appropriate. Therapeutic approaches must be applicable to use in the military population. Approaches of interest include:

  - "Activity-based" physical therapy
  - Computer-based approaches
  - Complementary or alternative medicine approaches
  - Combination therapies
- Research to develop biomedically-valid computational models of blast-related TBI that can be used to design, build, and test personal protection systems, such as combat helmets, and combat vehicle crew protection systems that prevent blast-related TBI. Support studies that take an end-to-end approach that combines appropriate animal injury and/or post-mortem human studies (PMHS) with computational modeling, and which include model validation. Blast-related TBI mechanisms of interest include:
  - Blunt force impact
  - Blast overpressure
  - Acceleration
  - Force transference
  - Combinations of the above
- Basic research to advance our knowledge in support of treatments to slow/stop loss of vision and hearing following injury, treatment and mitigation of sensory system dysfunction associated with TBI and war-related injuries, and ocular drug delivery.
- Applied research to support the development of strategies for the diagnosis, treatment, and mitigation of dysfunction associated with TBI and war-related injuries, and the restoration of sensory systems (including regeneration and tissue repair following traumatic injury).
- Research on treatments for traumatic brain injury-associated visual dysfunction, including treatments to slow or stop loss of vision in traumatic optic neuropathies, computational models of mechanisms of primary blast injury to the eye and vision system, methods to test visual dysfunction in the presence of cognitive impairment, and treatments for blast and burn injury to ocular structures.
- Applied research directed toward strategies for rehabilitation in patients with complicating factors (e.g., TBI, PTSD, and other co-morbidities).
- Rapid implementation of clinical trials to assess the efficacy of cognitive rehabilitative therapy for TBI for members or former members of the Armed Forces.
- Applied research leading to evidence-based, standardized evaluation criteria for suicidal patient intake and improved cognitive behavioral intervention as a treatment for suicidality.

- Applied research leading to accelerated cognitive behavioral therapy for combat-related PTSD.
- Applied research leading to enhanced methods to prevent health risk behaviors (e.g., accidents and tobacco use) and improved methods for the diagnosis and treatment of PTSD in the presence of other co-morbid mental health problems (e.g., depression, anger, grief, and guilt)
- Applied research leading to improved methods to enhance psychological resilience (e.g., environmental enrichment, yoga, and other complementary alternative medicine methods, positive psychology interventions, and enhancement of traditional training).
- Applied research leading to improved, evidence-based family and community resilience programs and methods to maintain strong relationships during deployment/extended separation.
- Research into the ability to identify and characterize mechanisms of TBI, particularly mild TBI.
- Far Forward Diagnosis and Treatment of TBI: Research into noninvasive diagnostic techniques to detect cellular or functional damage, pharmacologic or other agents (e.g., "neutraceuticals") for neuroprotection or treatment, and techniques to reduce structural and functional neurologic damage after TBI.
- Epidemiology of TBI and of mild TBI/concussion in military operations.
- Applied research leading to the identification and characterization of mechanisms of TBI.
- Applied research leading to improved clinical management practices for early intervention in TBI including but not limited to identification and evaluation of the best practices for therapeutic management of TBI.
- Improved therapeutics for TBI.
- Clinical rehabilitative-treatment trials focused on:
  - Sleep disturbances;
  - Mood and anxiety disorders;
  - Affective dysregulation; and
  - Chronic pain.

4.0 Assessment of Outcomes and Progress Made

4.1 Psychological Health

DoD and the Services are implementing responses to the recommendations of multiple commissions and panels on PH. Suicide prevention is a particular focus of PH efforts, especially in light of data suggesting that the rate of suicides in the military has increased during the war.

DoD has actively recruited new, qualified MH providers, both to MTFs and the TRICARE network. The PHS is arranging for MH providers to work with DoD. DoD is conducting ongoing program evaluation of resilience and early intervention programs such as: OSCAR (Marines), Battlemind (Army), Landing Gear (Air Force), FOCUS (Navy), installation-level PH coordination by Army Health Promotion Officers, and pre-deployment resiliency training for combatant units at Fort Hood. The multimedia public education Real Warriors campaign combats stigma associated with seeking PH care. Clinical care guidance and practice guidelines are published annually for PH conditions to address gaps in existing guidance. The DCoE Outreach Center connects Service members and families to resilience-building and prevention resources. Afterdeployment.org and Military Pathways provide MH education and self-assessment tools to the military community.

PH issues in the military continue to have high visibility and ongoing congressional attention, including a number of new PH-related legislative mandates inserted into NDAA 2010. The topic continues to attract media interest and calls for action by special interest groups. Suicide rates remain high despite active suicide prevention programs in each Service. The PH of Service members and their families is a key issue for DoD, especially in light of the many unique challenges posed by exposure to repeated combat and operational situations and the need for timely, evidence-based treatments.

In FY 2009, DoD developed an investment strategy and review process for supplemental appropriations totaling $165 million for new research on TBI and PH, with significant resources allocated for telemental health delivery. The NICoE is a state-of-the-art facility funded through non-DoD charitable contributions and is scheduled to open in June 2010 for evaluation, treatment, and long term follow-up of TBI and PH patients. In June 2010, DCoE will conduct a state-of-knowledge summit to provide the DCoE network of stakeholders a forum for collaboration and sharing of current PH and TBI knowledge. DoD Suicide Prevention Task Force members nominated by the Secretary of Defense and approved by the White House met in September 2009. The “inTransition” program will assign a one-on-one coach during periods of transition to Service members receiving mental health care.

PH research continues to be fast-tracked to assist our Service members, with close collaboration between the line, medical, and research communities. Key areas of promise include evidence-based clinical treatment, suicide prevention, and the impact of PH on families. The establishment of a Director of Psychological Health at all levels of the chain-of-command is a key component of our PH efforts.

4.2 Traumatic Brain Injury

Mandatory concussion screening occurs at four levels to maximize treatment opportunities for Service members who have sustained concussion: in-theater,

Landstuhl Regional Medical Center (all medically evacuated personnel), PDHA and PDHRA.

Clinical care instructions have been developed for all levels of TBI severity and cover both the deployed and the non-deployed environment. Efforts to educate medical providers are continuous, including the Third Annual TBI Military Training Conference, held in September 2009 and attended by more than 800 DoD clinicians.

The quality of DVBIC research was recognized in the 2009 DoD mTBI Technical Report conducted by the Survivability/Vulnerability Information Analysis Center for the United States Army Medical Research and Materiel Command that stated: "The DVBIC now plays a central role in performing and advancing research that will directly benefit military Service members and veterans with TBI." The RAND report recognized DVBIC educational products for clinical accuracy and appropriateness of risk communication. DVBIC members have been selected to represent the United States on the NATO mTBI Committee. Several NATO allies have adapted the Military Acute Concussion Evaluation (MACE) and the DVBIC CPG for use by their countries. The December 2008 Institute of Medicine report on Blast TBI endorsed DoD adaptation of DVBIC clinical tools such as the MACE and the Brief TBI screen.

TBI research continues to be fast-tracked to assist our Service members, with close collaboration between the line, medical, and research communities. Two key areas of promise include blast detection and clinical treatment.

5.0 Caring For Patients Within the Military Health System as Routinely Captured in the Base Military Health Accounting System

The table in Section 5.3 shows both the TBI and PH costs for FY 2009, reported annually in the MHS by cohort beginning in 2003. The cohort year identifies the first year in which patients were diagnosed with the condition. The costs reflected correspond only to those individuals who meet the criteria of the sub-table (e.g., any diagnosis is TBI, or any diagnosis is PH).

5.1 Funding for Traumatic Brain Injury

The lack of preciseness in International Classification of Diseases and Injuries–Version 9 (ICD-9) codes for TBI presents challenges to accurately glean cost data from medical systems. However, data pulled via commonly used ICD-9 proxy codes for Service members who incurred TBI and had deployed in support of OEF/OIF provided visibility into how much the MHS has expended on TBI diagnosis, treatment, and recovery of this population. The estimated cost for direct and purchased care in FY2009 was almost $40 million for cases where TBI was the primary diagnosis, about $99 million where TBI was one of any diagnoses, and nearly $470 million for any care after initial TBI diagnosis. Annual data are portrayed in the table in Section 5.3.

5.2 Funding for Psychological Health

The scope of PH is very broad and includes programs ranging from preclinical to transitional health programs and services, as well as family, leadership, and community education and training. The estimated cost for direct and purchased care in FY2009 was almost $218 million for cases where PH was the primary diagnosis, about $375 million where PH was one of any diagnoses, and nearly $1.4 billion for any care after initial PH diagnosis. Annual data are portrayed in the table in Section 5.3.

5.3 Costs in Fiscal Year 2009 for Formerly Deployed Service members with a Diagnosis of TBI or PH

Estimated Costs for PH

Primary Diagnosis is PH

Cohort (FY)	FY 2009
FY 2003	$ 13,757,474
FY 2004	$ 20,246,192
FY 2005	$ 23,647,353
FY 2006	$ 20,605,321
FY 2007	$ 30,395,307
FY 2008	$ 50,977,780
FY 2009	$ 58,168,576
Total	*$ 217,798,002*

Any Diagnosis is PH

Cohort (FY)	FY 2009
FY 2003	$ 22,455,551
FY 2004	$ 35,110,016
FY 2005	$ 39,025,890
FY 2006	$ 35,050,172
FY 2007	$ 50,332,200
FY 2008	$ 81,518,689
FY 2009	$ 111,378,797
Total	*$ 374,871,316*

Any Care After Initial PH Diagnosis

Cohort (FY)	FY 2009
FY 2003	$ 110,636,747
FY 2004	$ 165,773,782
FY 2005	$ 182,964,394
FY 2006	$ 159,982,330
FY 2007	$ 213,626,881
FY 2008	$ 297,876,953
FY 2009	$ 259,466,761
Total	*$ 1,390,327,847*

Any Prescriptions Filled After Initial PH Diagnosis

Cohort (FY)	FY 2009
FY 2003	$ 9,562,771
FY 2004	$ 13,919,287
FY 2005	$ 14,646,559
FY 2006	$ 13,033,719
FY 2007	$ 15,956,589
FY 2008	$ 18,467,958
FY 2009	$ 10,803,960
Total	*$ 96,390,842*

Estimated Costs for TBI

Primary Diagnosis is TBI

Cohort (FY)	FY 2009
FY 2003	$ 86,474
FY 2004	$ 124,176
FY 2005	$ 156,075
FY 2006	$ 603,984
FY 2007	$ 5,666,943
FY 2008	$ 8,590,161
FY 2009	$ 24,563,122
Total	*$ 39,790,935*

Any Diagnosis is TBI

Cohort (FY)	FY 2009
FY 2003	$ 161,527
FY 2004	$ 350,480
FY 2005	$ 1,077,346
FY 2006	$ 1,509,455
FY 2007	$ 10,529,164
FY 2008	$ 25,449,152
FY 2009	$ 60,010,845
Total	*$ 99,087,969*

Any Care After Initial TBI Diagnosis

Cohort (FY)	FY 2009
FY 2003	$ 4,073,131
FY 2004	$ 9,429,137
FY 2005	$ 15,295,982
FY 2006	$ 22,250,593
FY 2007	$ 62,929,364
FY 2008	$ 161,375,140
FY 2009	$ 194,216,787
Total	*$ 469,570,134*

Any Prescriptions Filled After Initial TBI Diagnosis

Cohort (FY)	FY 2009
FY 2003	$ 346,635
FY 2004	$ 725,187
FY 2005	$ 1,081,555
FY 2006	$ 1,815,548
FY 2007	$ 3,740,228
FY 2008	$ 8,774,756
FY 2009	$ 5,584,960
Total	*$ 22,068,868*

* Data for Service members who had deployed in Operations Enduring Freedom or Iraqi Freedom.
* TBI based on diagnosis codes 800-801,803-804,850-854,310.2,950.1-950.3,907.0,959.01,V15.5.
* Psychological health based on diagnosis codes 5-309,311-319,V40,V61-V62,V11,V91,E950-959, V154, V652, V655, , V701-V702, 99551, 99582, V6542, V6549.
* All costs are estimated to completion.
* Costs are the sum of Patient level Cost Allocation for Direct Care and Amount Paid for Purchased Care.
* Data as of October 28, 2009

Sources: MDR - Military Health System Data Repository
SIDR - Standard Inpatient Data Record
SADR - Standard Ambulatory Data Record
TED - TRICARE Encounter Data
PDTS - Pharmacy Data Transaction Service