# Department of Veterans Affairs
# Office of Inspector General

## Healthcare Inspection

# Health Status of and Services for Operation Enduring Freedom/Operation Iraqi Freedom Veterans after Traumatic Brain Injury Rehabilitation

Report No. 05-01818-165 July 12, 2006

VA Office of Inspector General
Washington, DC 20420

**To Report Suspected Wrongdoing in VA Programs and Operations**

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# Executive Summary

In response to the influx of service members returning from recent conflicts in Afghanistan and Iraq, the Office of Inspector General, Office of Healthcare Inspections undertook an assessment of selected aspects of the health care and other services provided for these patients by the Department of Veterans Affairs. This review addresses the care of individuals with traumatic brain injury (TBI), focusing on their status approximately 1 year following inpatient rehabilitation. We interviewed a group of these patients to directly ascertain their overall well-being, functional status, and social integration, and to measure their perceptions of VA health care and services. In order to gauge the effectiveness of VA rehabilitation efforts, we also compared outcomes with those of TBI patients in the largest national civilian database. Finally, we visited Veterans Health Administration (VHA) facilities, met with TBI program leaders, and surveyed those responsible for coordination of care for TBI patients.

Our inspection found that many of the 52 patients we interviewed continued to suffer some degree of cognitive or behavioral impairment approximately 16 months after injury. These patients had very similar outcomes when compared with a matched group of TBI patients from the private sector.

VHA has enhanced case management for TBI patients, but long-term case management needs further improvement. In addition, improvement is needed in coordination of care, so that patients are able to make a smoother transition between Department of Defense (DoD) and VA care. A recent VHA Directive, published after data collection for this report, defines roles for staff at all VHA facilities to ensure a seamless transition of care for service members and veterans from DoD to the VA health care system.

We found that families often provide heroic support for injured service members, but we also found that they frequently do so with limited assistance. To adequately meet the needs of its TBI patients, VHA needs to provide additional help for the family members and other caregivers so vital to the well-being of these patients in the long-term.

We recommended that the Under Secretary for Health should: (a) improve case management for TBI patients to ensure lifelong coordination of care, (b) work with DoD to establish collaborative policies and procedures to ensure that TBI patients receive necessary continuing care regardless of their active duty status and that appropriate medical records are transmitted, (c) develop new initiatives to support families caring for TBI patients, and (d) work with DoD to ensure that rehabilitation for TBI patients is initiated when clinically indicated.

**DEPARTMENT OF VETERANS AFFAIRS**
**Office of Inspector General**
**Washington, DC 20420**

**TO:** Under Secretary for Health, Department of Veterans Affairs (10)

**SUBJECT:** Health Status of Operation Enduring Freedom/Operation Iraqi Freedom Veterans after Traumatic Brain Injury Rehabilitation

# Introduction

## A. Purpose

In response to the influx of patients—veterans and service men and women still on active duty—returned from the conflicts in Afghanistan and Iraq and receiving medical care at Department of Veterans Affairs facilities, the Office of Inspector General (OIG), Office of Healthcare Inspections (OHI) undertook an assessment of selected aspects of the health care and other services provided for these patients. This review addresses the care of individuals who served in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) and suffered a traumatic brain injury (TBI)—either during their service in Southwest Asia or subsequent to such service while still on active duty. The purposes of this review are to describe the status of these individuals following inpatient rehabilitation and to explore the functioning of VA's network of care in support of them.

## B. Background

On October 7, 2001, less than a month after attacks on the World Trade Center in New York City, the United States launched a military response against Afghanistan known as Operation Enduring Freedom (OEF). Eighteen months later, in March 2003, British and American land forces entered Iraq in the incursion known as Operation Iraqi Freedom (OIF).

By April 30, 2003, more than 460,000 service members had been deployed for OEF/OIF.[1] As of October 29, 2005, there were more than 16,000 combat-related casualties, including nearly 1,568 deaths.[2] Non-fatal casualties not directly related to hostile action are not widely reported, but the number of non-battle related deaths reported (445) suggests a large additional burden. By August 2004, more than 214,000 American service members who had served in OEF/OIF were separated from active duty, and approximately 15 percent of these sought VA healthcare.

While OEF/OIF veterans constitute a small proportion of all patients who receive VA healthcare,[3] many of these newest veterans have been severely injured and require extensive rehabilitation and ongoing support. OEF/OIF patients present complex medical problems—many as timeless as war itself, others new, even unique, to these conflicts. For example, while the extensive care requirements of service people wounded in war is self-evident, magnifying this issue for OEF/OIF patients is that sophisticated military medical staff and facilities established close to combat operations have rescued and transported to stateside hospitals patients with grave injuries who in an earlier era would simply never have survived their immediate injuries.[4] Thus, while a testament to the speed, efficiency, and technical prowess of medical services on the front lines of OEF/OIF, a complementary challenge to Department of Defense (DoD) and VA facilities is created.

For all service members with severe and moderately severe injuries, DoD and VA have developed systems for delivering a continuum of care from active duty back to civilian life or return to active military duty. A major component of care provided to veterans who served in OEF/OIF is for those with injuries commonly described in the medical literature as traumatic brain injury (TBI), defined as "a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain."[5] Of necessity, the care of patients with TBI is a continuum—sometimes extending a lifetime—from acute care delivered in the immediate aftermath of the injury, to early rehabilitative therapy, to chronic rehabilitative therapy and support. TBI may require neurosurgical, neurological, and psychiatric intervention, as well as a spectrum of rehabilitative therapies (such as physical therapy, occupational therapy, and vocational therapy) and psychosocial services. Moreover, since polytrauma—particularly in battlefield injuries—is often the

[1] Assessment and Analysis Division. Operation Iraqi Freedom – By the Numbers. USCENTAF, April 30, 2003. http://www.globalsecurity.org/military/library/report/2003/uscentaf_oif_report_30apr2003.pdf.
[2] DoD Directorate for Information Operations and Reports. http://www.dior.whs.mil/mmid/casualty/castop.htm.
[3] VHA Office of Public and Environmental Hazards. Analysis of VA Health Care Utilization among Southwest Asian War Veterans Combined. October 21, 2005. The nearly 119,000 OEF/OIF veterans evaluated by VA in FY 2002-05 represent approximately 2% of the individuals who received VA health care in 2004.
[4] Gawande A. Casualties of war—military care for the wounded from Iraq and Afghanistan. *N Engl J Med.* 2004;351:2471-2475. See also Eckholm E. A new kind of care in a new era of casualties. *NY Times.* January 31, 2006.
[5] U.S. Centers for Diseases Control and Prevention (August 2005): CDC. http://www.cdc.gov/Migrated_Content/Fact_Sheet/Freeform_Fact_Sheet_(General)/Facts_About_TBI.pdf.

norm, extensive medical, rehabilitative, and psychosocial care of other aspects of the injuries sustained are often required.

The DoD provides acute care and initial rehabilitation for soldiers, sailors, airmen, and marines injured while on active duty. Once these patients reach VA health care facilities, emphasis is on comprehensive rehabilitation and long-term support. Progression toward the optimal level of functioning for individual patients continues throughout hospitalization and when they return to their communities. Accomplishing this continuum of care requires DoD and VA to implement inter-agency agreements, and their success is measured by the extent to which those injured are able to re-enter society or achieve stability at long-term care facilities.

In 1992 the Defense and Veterans Head Injury Program (DVHIP) was established for development of a TBI tracking system, care network, standardized protocols for evaluation and treatment, and treatment comparison studies.[6] This program, subsequently renamed the Defense and Veterans Brain Injury Program Center (DVBIC), represents a collaborative effort in the provision of health care by the DoD and VA. Four VA medical centers (VAMCs)—the Minneapolis, MN; Palo Alto, CA; Richmond, VA; and Tampa, FL VAMCs—were designated as TBI "Lead Centers" because they provide the full spectrum of TBI care and serve as centers for a network of TBI care.[7] That network includes, in addition to the Lead Centers, 16 VAMC "Network Centers" and 6 VAMC "Associate Network Centers." Network Centers provide both inpatient and outpatient care, but generally provide a more limited scope of services than do Lead Centers. Associate Network Centers offer case management services and help identify resources for care within their assigned areas. Associate Network Centers may also provide outpatient services to veterans with TBI residing in their catchment areas.[8]

Beyond the need for comprehensive acute and rehabilitative care for OEF/OIF veterans, the VA has expressed a major commitment to such veterans who sustained TBI prior to those conflicts. The Veterans Health Administration (VHA) has designated traumatic brain injury as one of its Special Emphasis Programs for which national performance measures are in place.[9] Ensuring access to care, maintaining capacity, and monitoring outcomes of care are a high priority.

Specific attention to those living with TBI is warranted. Unlike with other types of injury, brain injury often causes emotional difficulties and behavioral problems which can be long lasting. These problems exact a huge toll on patients, family members, and

[6] http://vaww1.va.gov/rehab4veterans. It should be noted that information referenced from vaww1.va.gov or vaww.va.gov websites are from VA intranet sites not available outside the VA system.
[7] VA Employee Education System. "Traumatic Brain Injury." Released February 2004. https://vaww.ees.aac.va.gov/courses/c306/sec/12/009.asp (password required). See also http://www1.va.gov/health/rehab/SpecProg_TBI.htm.
[8] Information provided by Gretchen Stephens, VHA National TBI Coordinator, March 7, 2006.
[9] Veterans Health Initiative. Traumatic Brain Injury. January 2004, p. 117.

health care providers. In the case of mild TBI, the denial of problems which can accompany damage to certain areas of the brain often leads to difficulties receiving services. With more severe injuries, the extreme family burden can lead to family disintegration and loss of this major resource for patients.[10]

## Scope and Methodology

In this report we explore VA care from two perspectives. In Part 1, we describe the status and perceptions of individual patients. In Part 2, we examine VA's system of care for these patients.

### Part 1: Status of OEF/OIF TBI Patients

We examined the extent to which VHA meets the needs of veterans returning from OEF/OIF who had suffered TBI, from their entry into the VA system to their discharge from a Lead Center and return to their communities. Focusing on veterans with moderate to severe TBI, we explored the health status of veterans and active duty service men and women approximately 1 year after completing inpatient rehabilitation at a Lead Center. To accomplish this, we located and interviewed patients in their communities to directly ascertain their overall well-being, functional status, social integration, and to measure their perceptions of past and ongoing VA care. To place in context the experience of the patients interviewed for this review, we also gathered data on the numbers of TBI patients treated by VHA in the years prior to OEF/OIF.

In the first part of this review we utilized several approaches. First, we elicited information about current living circumstances and qualitatively assessed perceptions of VA care through patient and family interviews. Second, we employed recognized psychometric, functional, and other tests to assess patients' general well-being, functional status, social adjustment, and behavior, and to elicit information about barriers to care.

#### A. Identification of Patients for Interview

We identified all patients discharged March 1 through September 30, 2004, from the four VA TBI Lead Centers after a first admission for TBI rehabilitation. We chose this period so that patients selected would be relatively remote from the time of injury, in order to address aspects of care from the perspective of long-term follow-up. TBI rehabilitation was specified by International Classification of Diseases (ICD)-9 Code. We included only patients who were on active duty at the time of their TBI and who were designated as having served in the Persian Gulf region. Exhaustive effort was made to locate each of these patients and to contact those residing in the United Sates.

[10] See reference 9, pp. 83–84.

Utilizing VHA's Patient Treatment File (PTF) we identified patients who met the following criteria:

- Service in OEF/OIF.
- First admission for TBI rehabilitation at a VA TBI Lead Center (Tampa, Richmond, Minneapolis, and Palo Alto VAMCs).
- Discharge from a VA TBI Lead Center during March 1–September 30, 2004.
- ICD-9 Code V57.x: "Care involving use of rehabilitation procedures."
- At least one additional of the following ICD-9 Codes:

| | |
|---|---|
| 310.2: | Post-traumatic encephalopathy, post-concussion. |
| 800.xx-804xx: | Skull fracture. |
| 851.xx: | Cerebral laceration and contusion. |
| 852.xx: | Subarachnoid, subdural, and extradural hemorrhage. |
| 853.xx: | Other and unspecified intracranial hemorrhage following injury. |
| 854.xx: | Intracranial injury of other and nonspecified injury |

## B. Interview Teams and Patient Interviews

Twelve interviewers received extensive training on use of measurement tools, and all were certified to administer the Functional Independence Measure (FIM™), a key functional assessment tool (see Section C below). Two interviewers visited each patient. All interview teams attended a pilot interview with a TBI patient and his family at Walter Reed Army Medical Center, during which additional areas of inquiry were identified. Interviews were generally conducted at patients' homes, but active duty patients were also seen at their military installations, and a few patients were seen at other locations of their choosing. In addition to applying specific measurement tools, interviewers asked patients and families to relate their current circumstances, challenges, and successes. All patients had the opportunity to decline participation.

## C. Measurement Tools

We consulted with VA and non-VA rehabilitation experts to select and develop measurement instruments to be employed in each patient interview. One goal was to permit benchmark comparisons of VA patients with their civilian counterparts who had also suffered TBI. To accomplish this, we incorporated widely used instruments to address four areas: general well-being, functional status, social adjustment and behavior, and access to health care services. These instruments are briefly described below.

## General Well-Being

### a. Veterans RAND SF-12 – VR-12

Derived from the widely used Medical Outcomes Study SF-36®, the Veterans RAND SF-12 (VR-12) is a shortened (12-item) version modified for VA ambulatory care populations[11] and used by VHA as one component in its evaluation of system performance.[12] These instruments measure eight aspects of health, including physical functioning, bodily pain, general health perceptions, energy/vitality, social functioning, role limitations due to emotional problems, and mental health.

Two summary scores are derived, a physical component summary (PCS) and a mental component summary (MCS). To facilitate comparative interpretation, these scores are weighted and standardized to the U.S. population with a mean of 50 and a standard deviation of 10. Thus, a score of 40 indicates a measure of overall health status one standard deviation below the population norm.

### b. Center for Epidemiologic Studies Depression Scale – CES-D

Depression is a common problem among patients with chronic diseases and is well known to accompany traumatic brain injury. In addition, depression may complicate assessment of cognitive function. Therefore, each patient underwent an assessment of his or her status using the Center for Epidemiologic Studies Depression Scale (CES-D).[13]

The CES-D was developed to facilitate the identification of depression in large populations. In its original form as a 60-item questionnaire, the CES-D has been widely used for nearly 30 years. More recently, 20- and 5-item scales have been shown to retain a level of accuracy similar to the original version.[14] The current review employs the 5-item scale as recommended in VHA's major depressive disorder clinical practice

[11]Jones D, et al. Health status assessments using the Veterans SF-12 and SF-36: methods for evaluating outcomes in the Veterans Health Administration. *J Ambul Care Manage.* 2001;24:68–86. See also: http://www.measurementexperts.org/instrument/instrument_reviews.asp?detail=35. Permission granted for use of the VR-12 from Dr. Lewis Kazis.

[12]Jones D, et al. Health status assessments using the Veterans SF-12 and SF-36: Methods for evaluating outcomes in the Veterans Health Administration. *J Ambulatory Care Manage.* 2001;24:68–86.

[13]Center for Epidemiologic Studies Depression Scale (CES-D). http://measuremnentexperts.org/instrument. See also Lewinsohn PM, et al. Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychol Aging.* 1997;12:277–287.

[14] Measurement Excellence and Training Resources Information Center (METRIC), VA Health Services Research & Development Service. http://measuremnentexperts.org/instrument. See also Lewinsohn PM, et al. Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychol Aging.* 1997;12:277–287.

guideline.[15] The 5-item screening tool generates scores ranging between 0 and 15. A score of 4 or greater constitutes a positive depression screen.[16]

## Functional Status

### a. Cognitive Function – Cog-Log

The Cognitive Log (Cog-Log) is a measure of general cognitive abilities that can be obtained quickly and without the use of materials, as is the case with comparable tools such as the Mini-Mental Status Examination (MMSE).[17] The Center for Outcome Measurement in Brain Injury notes that the Cog-Log, "provides a measure of general cognitive abilities… [and] a brief measure of cognition that can document progress during rehabilitation and provide an estimate of skills as assessed by more lengthy evaluations." The Cog-Log was originally used at the bedside with patients hospitalized for rehabilitation, but it has also been applied in the office setting. It uses the same scale as does the MMSE (which has been utilized in many settings) and its component questions are very similar. Each of the 10 items of the Cog-Log is scored from 0–3, so that total scores range from 0–30.

Because the instrument was developed to allow monitoring of individual patients over time, normative data are not available. However, it has been shown to correlate well with formal neuropsychological testing and is very similar to the MMSE, so that established MMSE criteria can probably be appropriately applied. The median MMSE score for high school graduates ages 18–34 is 29, and for ages 35–69, 28.[18] A score of less than 24 is indicative of cognitive impairment.[19] In the current review, if patients scored less than 26, we sought to corroborate our findings with the assistance of family members, social workers, nursing staff, or medical records.

### b. Functional Independence Measure – FIM™

The Functional Independence Measure (FIM™) is the most widely accepted functional assessment tool in rehabilitation.[20] It incorporates aspects of self-care, locomotion, communication, and social cognition. It is considered particularly valuable for measuring progress during inpatient rehabilitation.

[15] VHA Office of Quality and Performance. http://www.oqp.med.va.gov/cpg/MDD/mdd_cpg/content/MDDapp_fr.htm.
[16] A professional diagnostic interview is required to make a definitive diagnosis.
[17] Cog-Log. http://tbims.org/combi/coglog/index.html.
[18] Tufts-New England Medical Center Department of Psychiatry. http://www.nemc.org/psych/mmse.asp.
[19] Folstein M, Folstein SE, McHugh PR. "Mini-Mental State" a Practical Method for Grading the Cognitive State of Patients for the Clinician. *J Psych Res.* 1975;12:189–198.
[20] Functional Independence Measure (FIM™), Uniform Data System for Medical Rehabilitation, Amherst, NY. VHA has a contract, which allows for use of this instrument. See also: http://tbims.org/combi/FIM/index.html.

The FIM™ consists of 18 items, including 13 that pertain to motor function (eating, grooming, bathing, dressing, toileting, transfers, and locomotion) and 5 that pertain to cognitive function (comprehension, expression, social interaction, problem solving, and memory). Each of the 18 items is rated on a 1–7 scale, so that total scores range from 18–126. A score of 18 indicates the lowest level of independence, and a score of 126 is indicative of the very highest level of independence.

#### c. Extended Glasgow Outcome Scale – GOSE

The Extended Glasgow Outcome Scale (GOSE) has been the most widely used outcome measure following TBI.[21] Its eight rating categories range from "dead" to "upper good recovery," with corresponding scores of 1–8. Higher scores indicate increasing degrees of overall recovery.

#### d. Disability Rating Scale – DRS

The Disability Rating Scale (DRS) was developed to track head injury patients beyond initial rehabilitation to their return to their communities.[22] It incorporates aspects of cognitive and physical functioning, as well as impairment and disability, and is felt to provide a more global assessment as compared to other instruments. Scores range from 0 (no disability) to 29 (extreme vegetative state). In contrast to the FIM™ and GOSE, higher scores indicate decreasing degrees of recovery.

### Behavior and Social Adjustment

The Community Integration Questionnaire (CIQ) consists of 15 items pertaining to home integration (5 items), social integration (7 items), and productive activities (3 items). The instrument was designed for use with patients after traumatic brain injury.[23]

In addition to the use of the CIQ, we asked focused questions about current activities, relationships, and problems.

### Access to Care

The Services Obstacles Scale (SOS) evaluates perceptions of brain injury services in the community with regard to quality and accessibility.[24] Each of its six items is rated on a 7-point scale. The SOS includes questions about finances and transportation as obstacles to receiving services and about satisfaction with treatment resources.

[21] Wilson JTL, Pettigrew LEL, Teasdale GM. Structured interviews for the Glasgow Outcome Scale and the Extended Glasgow Outcome Scale: Guideline for their use. *J Neurotrauma.* 1998;15:573–584. See also http://www.tbims.org/combi/gose/index.html.
[22] http://tbims.org/combi/drs/index.html.
[23] http://tbims.org/combi/ciq/index.htmlCIQ.
[24] http://tbims.org/combi/sos/index.html.

To further characterize the role of VA services in the care of these patients, we also sought details about where individual patients were receiving care and the extent to which VA staff were involved in care coordination.

## D. Functional Related Groups

Based on functional status at the time of admission to a Lead Center, patients can be stratified. Stratification permits comparison of rehabilitative progress and functional improvement over time of groups of patients with similar degrees of initial disability. In addition, since the same assessments are available for non-VA populations of TBI patients, comparisons of data are possible.

The FIM™ instrument was applied by VA caregivers to all patients at admission to a Lead Center, these results being routinely compiled as a part of the VHA's Functional Status and Outcomes Database (FSOD) for Rehabilitation.[25] To stratify patients, FSOD derives a "Functional Related Group" (FRG) assignment from each patient's FIM™ results. There are five FRG categories (FRG 1–FRG 5), of which a higher FRG group denotes a higher the level of functional independence.[26]

## E. Benchmark Comparisons

Comparison of rehabilitative progress over time of groups of patients with similar degrees of initial disability is informative. Moreover, since data on many factors are available for non-VA populations of TBI patients, comparison of rehabilitation results is possible. The largest available comparison group we identified is the Traumatic Brain Injury Model Systems program ("Model Systems"). The National Institute on Disability and Rehabilitation Research, U.S. Department of Education, funds this program. Its goals are to demonstrate the benefits of a coordinated system of care and to conduct research on all aspects of care for those with TBI.

Since its inception in 1987, the TBI Model Systems program has compiled information from 21 Federally funded TBI Model Systems of Care facilities, thus, providing a database with which to make benchmark comparisons.[27] As of December 2004, the Model Systems database contained information on 5,044 persons with traumatic brain injuries.[28]

In order to compare outcomes with the patients we interviewed to a non-VA group of TBI patients, reference Model Systems data were employed. The Model Systems comparison group was limited to male patients born during the same time period as the

[25] VHA Functional Status Outcomes Database. http://www.va.gov/health/rehab/FSOD.htm.
[26] FRGs are calculated as follows: Motor subscore < 17: FRG 1, motor subscore 17–38: FRG 2. The remaining groups include patients with motor subscores > 38. Cognitive subscore 5–23, FRG 3; cognitive subscore 24–29, FRG 4; and cognitive subscore 30–35, FRG 5.
[27] http://www.njrehab.org/tbims/ (accessed 02/08/2006).
[28] Millis S, Wood K. Database Update. Traumatic Brain Injury Facts and Figures. 2005;11:8–10.

patients we interviewed,[29] who had completed high school, and were working or attending school full-time at the time of injury. For this inspection, we also limited our use of Model Systems data to patients injured during the period of 2000–2004. This permitted comparison of patients with the same technology and rehabilitative methods in existence. Also, it took into account the fact that changes in scoring methodologies for several of the instruments delineated above had occurred prior to that time.

The comparison group of VA patients excluded female patients (three) and two patients whose TBI was subsequently found to have occurred more than 2 years before interview. Thus, 47 of the initial 52 interviewees comprised the benchmark comparison group with Model Systems.

Finally, because we interviewed patients at approximately 17 months from their TBI, comparison was made with Model Systems Program patients who had been evaluated at 1 and 2 years from their TBI.

## F. Acquisition of Benefits

To obtain information about VA benefits for these patients, we queried two VA data sources. The Compensation and Pension System provides information about service-connected disability.[30] The Target Payment System includes data about educational benefits. Benefits status at the time of interview is reported in this review.

## G. Consultations

The Center for Injury Research and Policy, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, provided assistance with design and analysis. In order to compare VA patient outcomes with their civilian counterparts who had also suffered TBI, we utilized data from the Model Systems National Data Center, Kessler Medical Rehabilitation Research and Education Corporation, West Orange, NJ. We also conferred with representatives of the Commission for Accreditation of Rehabilitation Facilities.

This review was conducted in accordance with *Quality Standards for Inspections* published by the President's Council on Integrity and Efficiency.

[29] May 17, 1955–July 4, 1985.
[30] Pension is an income-dependent benefit paid based on eligibility and income from other sources. Compensation is paid based on some service connected disability regardless of other income.

## Part 2: Survey of VHA's TBI System of Care

### A. Recent VHA Initiatives

To ascertain improvements made since OHI's 1999 review of VHA's TBI program, we interviewed VHA TBI program managers, DoD clinicians and leaders, and spoke with private sector rehabilitation experts. We also reviewed recent VHA policies, procedures, and directives.

### B. Facilities

We visited the four TBI Lead Centers, and also visited two Network Centers and three Associate Network Centers. We interviewed medical center managers and TBI program directors, as well as clinicians involved with TBI care. We also interviewed TBI patients to assess their perceptions, goals, and level of participation in their recovery.

### C. Case Management

Because of its key importance in the overall well-being of TBI patients, we focused on the details of the work of case managers. Specifically, we examined their role in care coordination and long-term follow-up.

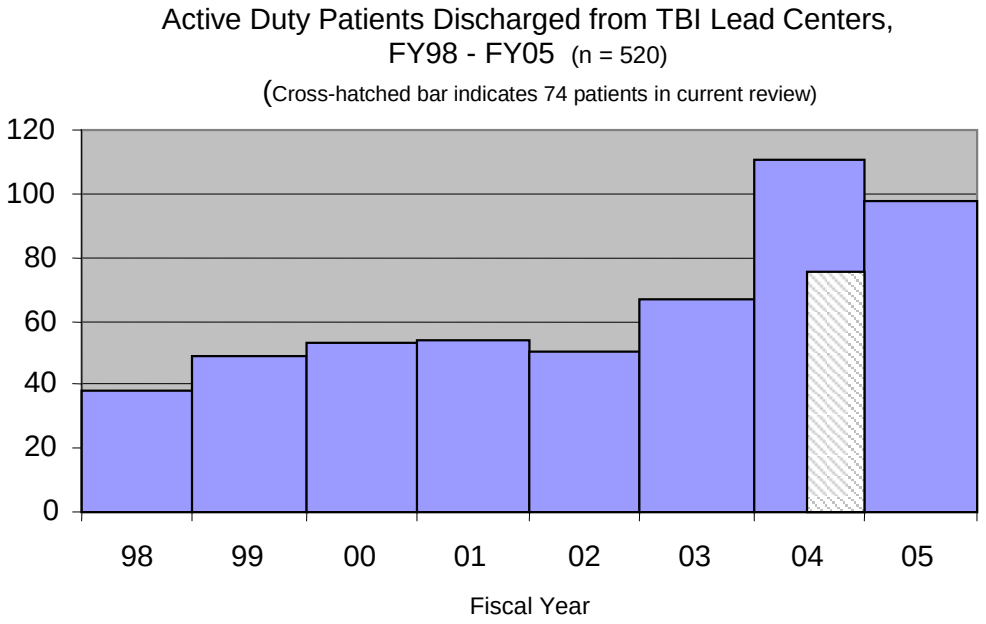
# Findings

## Part 1: Status of OEF/OIF TBI Patients

### A. Attributes of Identified Patients

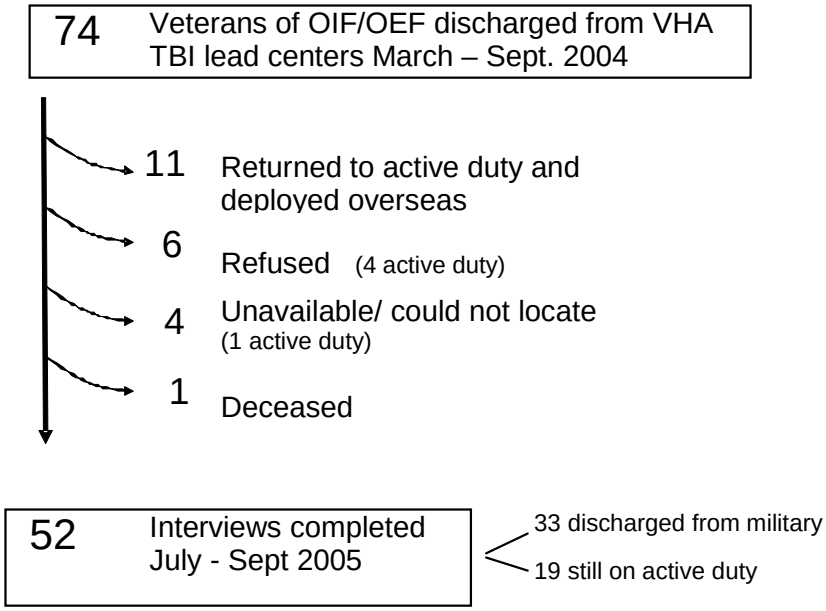
Seventy-four individuals met criteria for inclusion in this review. During March 1–September 30, 2004, the period during which these 74 patients were discharged from a TBI Lead Center, there was a substantial increase in the number of active duty patients receiving VA rehabilitation for TBI (Figure 1).

**Figure 1. Active Duty Patients Discharged from TBI Lead Centers**

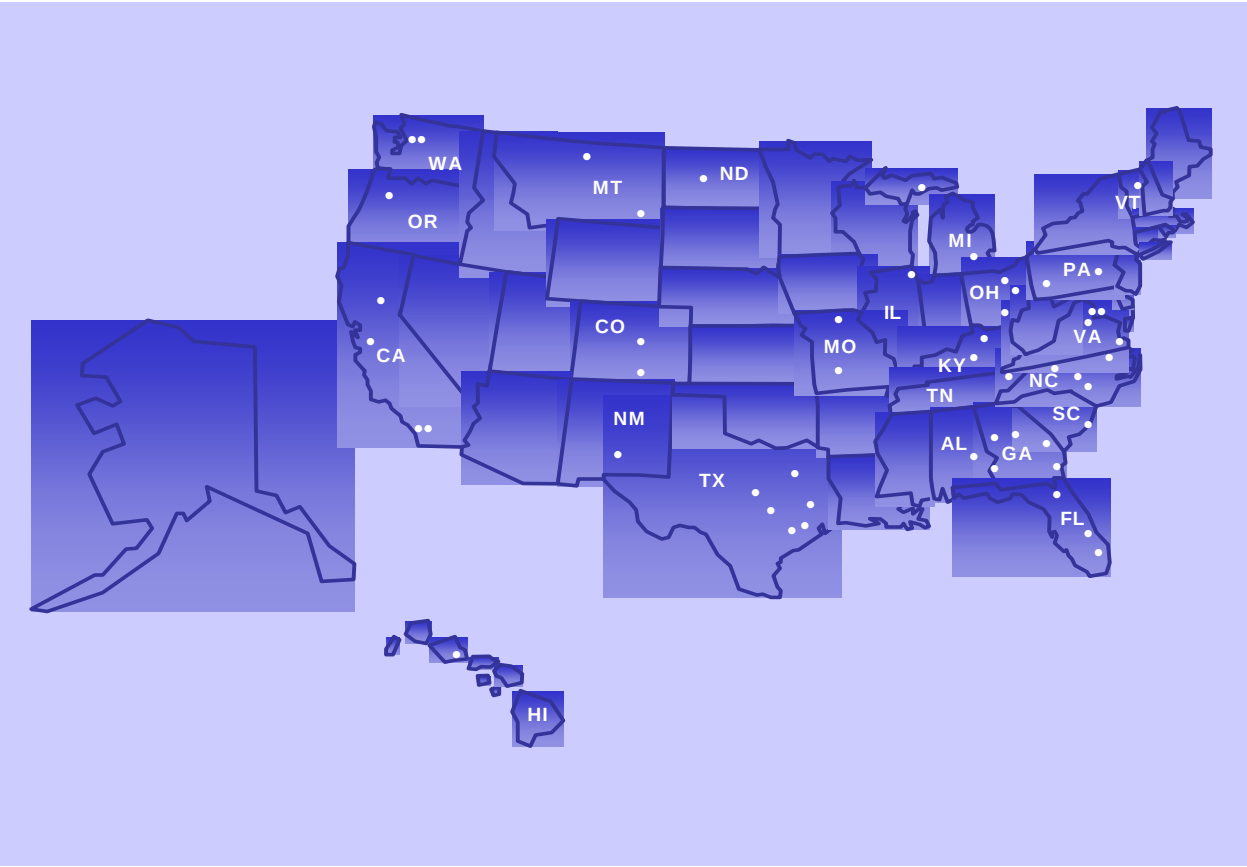



Of the 74 patients who met criteria for inclusion in the review, 11 were unavailable because they had returned to active military service and were overseas, 6 refused to be interviewed, 4 could not be located or were unavailable, and 1 was deceased. We were therefore able to complete 52 comprehensive in-person assessments (Figure 2), which were conducted in 23 states and in the District of Columbia (Figure 3).

## Figure 2. Delineation of Patients Identified for Interview




## Figure 3. Location of Patients Interviewed



The 52 interviewed patients ranged in age from 19 to 48 at the time of injury, and 3 were female. All had completed high school, and 17 had attended college. Eighteen were married. The branches of service were represented as follows: 26 Army, 14 Marine, 6 Navy, and 6 Air Force; 5 were from Reserve units, and 1 reported being from a National Guard unit. Nineteen patients were on active duty at the time of interview (Table 1). Among the 33 patients who were not on active duty at the time of interview, 4 were living in treatment facilities and 3 were living alone. The remaining 26 patients were living at home with friends or family members.

While all patients were designated as being on active military duty at the time of sustaining their TBI and all were designated as having served in the Persian Gulf, one was a veteran of a prior Persian Gulf conflict (Desert Storm) who was injured while working as a civilian contractor in Iraq and two were subsequently found to have never been in Iraq or Afghanistan. Thirty-six (69 percent) of the patients sustained their injuries outside of a combat zone (Table 1). The most common cause of TBI overall was motor vehicle accidents. For the 16 (31 percent) injured in Iraq, the most common cause was blast from improvised explosive devices (IEDs) (Table 2).

The 22 patients unavailable for interview were significantly heterogeneous. The 11 who were re-deployed overseas were, as a group, relatively less severely injured (5 were in admission FRG 3, 1 in FRG 4, and 5 in FRG 5). However, the remaining 11 (those not located, unwilling, or deceased) included some who had suffered more severe injuries (3 patients were in admission FRG 1, 1 in FRG 3, 5 in FRG 4, 2 in FRG 5). The single patient who died was a Navy service member who had been severely injured in a motor vehicle accident in Japan in December 2003. He died of aspiration pneumonia and respiratory failure on July 20, 2004.

All further data in this report pertain exclusively to the 52 patients from whom comprehensive information was obtained. For this group, the median time from injury to interview was 16.5 months (range 12–91).[31] Patients received inpatient rehabilitation at the 4 VA TBI Lead Centers as follows: Minneapolis – 14; Palo Alto – 9; Richmond – 14; and Tampa – 15.

[31] Two patients of these patients were found to have suffered their TBI more than 2 years before interview. They were inadvertently entered into the study group. In one case, the patient had late recognition of the injury; in the other case, admission for rehabilitation was for follow-up care.

## Table 1. Characteristics of 52 Patients Interviewed

| | |
|---|---|
| Age, years, median<br>(range) | 24.5<br>(19–48) |
| Gender, number (%)<br>Male<br>Female | <br>49 (94)<br>3 (6) |
| VA TBI Lead Center, number (%)<br>Minneapolis<br>Palo Alto<br>Richmond<br>Tampa | <br>14 (27)<br>9 (17)<br>14 (27)<br>15 (29) |
| Time from TBI to Interview,<br>months, median<br>(range) | 16.5<br>(12–91) |
| Active duty at interview, number (%) | 19 (37) |
| Branch of service, number (%)<br>Army<br>Marines<br>Navy<br>Air Force<br><br>Component, number (%)<br>Active<br>Reserves<br>National Guard | <br>26 (50)<br>14 (27)<br>6 (12)<br>6 (12)<br><br><br>43 (83)<br>5 (10)<br>1 (2) |
| Combat zone injury, number (%) | 16 (31) |

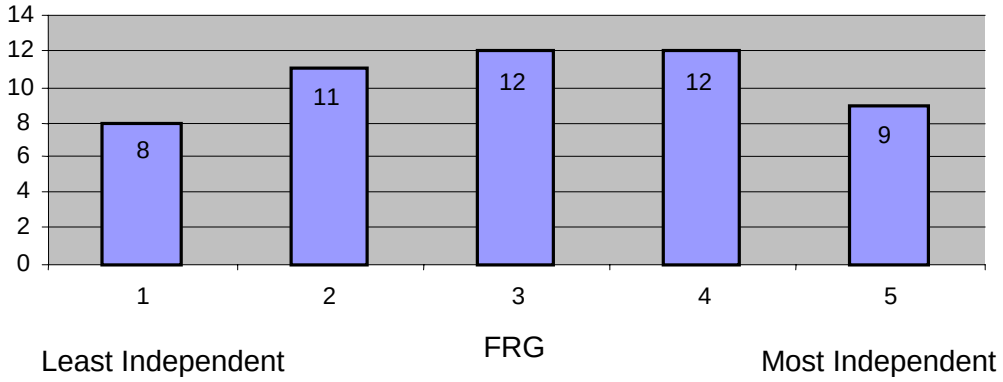
## Table 2: Cause of TBI Among 74 Selected Patients

(Numbers in parentheses are percentages of column totals.)

| | TBI Outside of Iraq/Afghanistan | | TBI in Iraq/ Afghanistan | | |
|---|---|---|---|---|---|
| | Interviewed | Not Interviewed | Interviewed | Not Interviewed | Overall |
| Motor Vehicle Accident | 30 (83) | 9 (60) | 1 (6) | 3 (43) | 43 (58) |
| Improvised Explosive Device | 0 | 0 | 8 | 0 | 8 |
| Mortar/grenade | 0 | 0 | 3 | 2 | 5 |
| Fall | 3 | 1 | 0 | 1 | 5 |
| Assault | 2 | 3 | 0 | 0 | 5 |
| Gunshot Wound | 0 | 0 | 3 | 0 | 3 |
| Gun Recoil | 0 | 0 | 1 | 0 | 1 |
| Spring Loaded Lever | 0 | 0 | 0 | 1 | 1 |
| Other | 1 | 2 | 0 | 0 | 3 |
| Total | 36 | 15 | 16 | 7 | 74 |

For each patient in this review, Functional Related Group (FRG) scores had been calculated from initial assessments at the time of admission to TBI Lead Centers. Interviewed patients had injuries ranging from mild to severe (Figure 4).

## Figure 4. Functional Related Group (FRG) for 52 Patients



## B. Current Health Status and Services

### General Well-Being

#### a. Veterans RAND SF-12 – VR-12

Veterans RAND SF-12 (VR-12) scoring was possible for 45 of the 52 patients interviewed.[32] The Physical Component Summary (PCS) score (one of two parts of the VR-12) mean was 44.3, and Mental Component Summary (MCS) score mean was 46.8. These two means are, respectively, approximately 0.5 and 0.3 standard deviations lower than the U.S. population norm, but they are higher than in ambulatory older veterans[33] and in veterans with spinal cord injury.[34,35] In our patients, severity of injury correlated poorly with self-assessments of well-being, consistent with findings in the rehabilitation literature.[36]

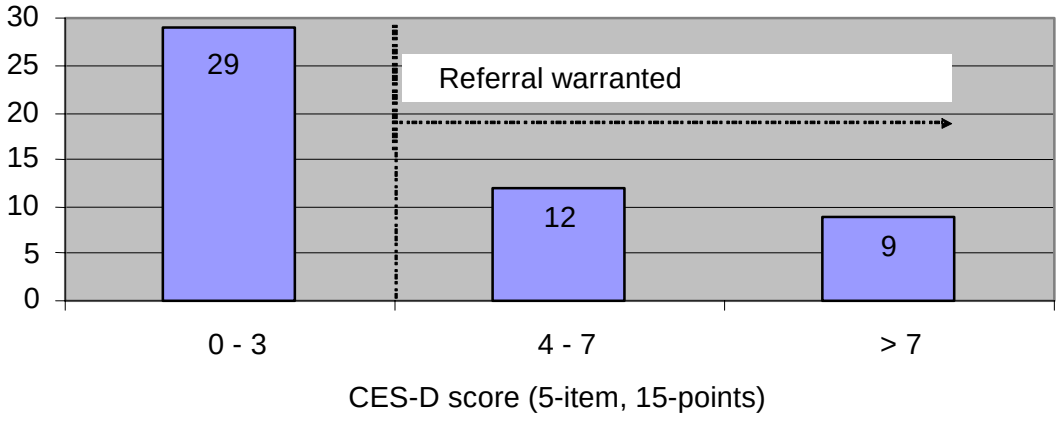
#### b. Center for Epidemiologic Studies Depression Scale – CES-D

Of the 52 patients we interviewed, 50 were testable.[37] With the 5-item screening tool for depression, a score of 4 or greater constitutes a positive depression screen (0–15 scale). We found that 21 of the 50 testable patients (42 percent) met criteria for further evaluation of depression (Figure 5). This rate of screening positivity (42 percent) is significantly higher than observed in general population samples and somewhat greater than that seen in a group of patients following major injury.[38]

Our inspectors identified two patients meeting criteria who we promptly referred for definitive care (scores 13, 15). The remaining 19 patients who met criteria had lower scores (median score 7, range 4–12), and we were able to confirm that 15 of these patients were already under close medical supervision; the remainder were on active duty and were unavailable.

[32] Scoring of the VR-12 requires complete data for each patient. Because some patients were unable to answer all questions, results are presented for only 45 patients.
[33] Mean age, 62; PCS, 33.9; MCS, 45.2.
[34] PCS, 32.4; MCS, 44.0.
[35] Reference 26 and Gage H, et al. The relative health related quality of life of veterans with Parkinson's disease. *J Neurol Neurosurg Psych.* 2003;74:163–169.
[36] Dijkers MP. Quality of life after traumatic brain injury: a review of research approaches and findings. *Arch Phys Med Rehabil.* 2004;85 (suppl 2):S21–S35.
[37] Two patients had severe cognitive impairment to an extent that precluded valid administration of this instrument.
[38] Darnall BD, et al. Depressive symptoms and mental health service utilization among persons with limb loss: results of a national survey. *Arch Phys Med Rehabil.* 2005;86:650–658.

**Figure 5. Depression Screening - 50 TBI Patients**




## Functional Status

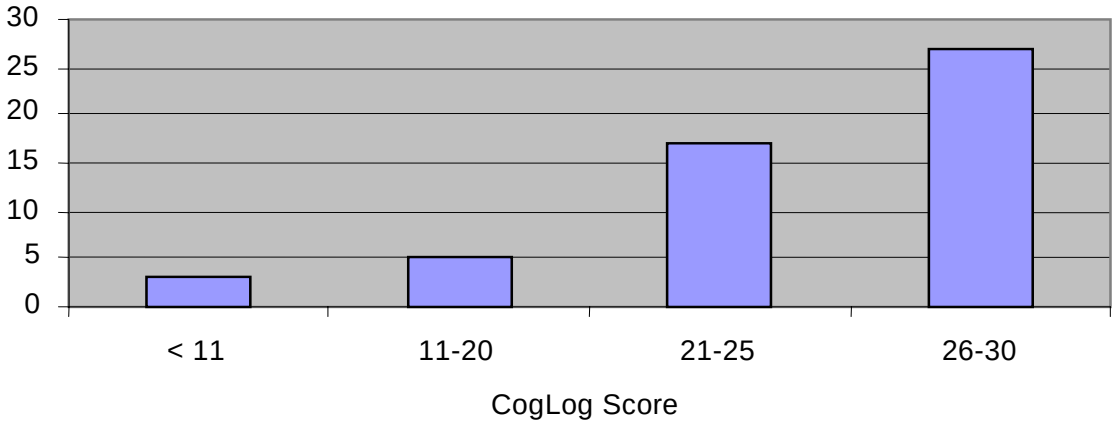
### a. Cognitive Function – Cog-Log

We assessed cognitive function using the Cognitive Function (Cog-Log) instrument. In this test, 10 items are scored from 0 to 3.

For most patients we interviewed, cognitive function appeared to be largely intact. Twenty-seven patients (52 percent) had scores greater than 25, suggesting mild or no cognitive impairment (Figure 6). Of the remaining 25 patients, 17 scored in the 21–25 range, 5 in the 11–20 range, and 3 in the 0–10 range (Figure 6). For these latter patients, OHI inspectors attempted to confirm interview findings with family members, clinical staff, and/or the patient's medical record. Overall, the most common cognitive deficit identified was impaired immediate recall and short-term memory.

It is important to note that the Cog-Log is a screening instrument incapable of detecting the full range of cognitive deficits observed in TBI patients. Patients with low Cog-Log scores can be expected to have major impairments. At the same time, given the variable effect of traumatic brain injury on the various components of cognitive functioning, many of the patients with higher scores (greater than 25) may also be significantly impaired.

**Figure 6. Cognitive Function – 52 TBI Patients**

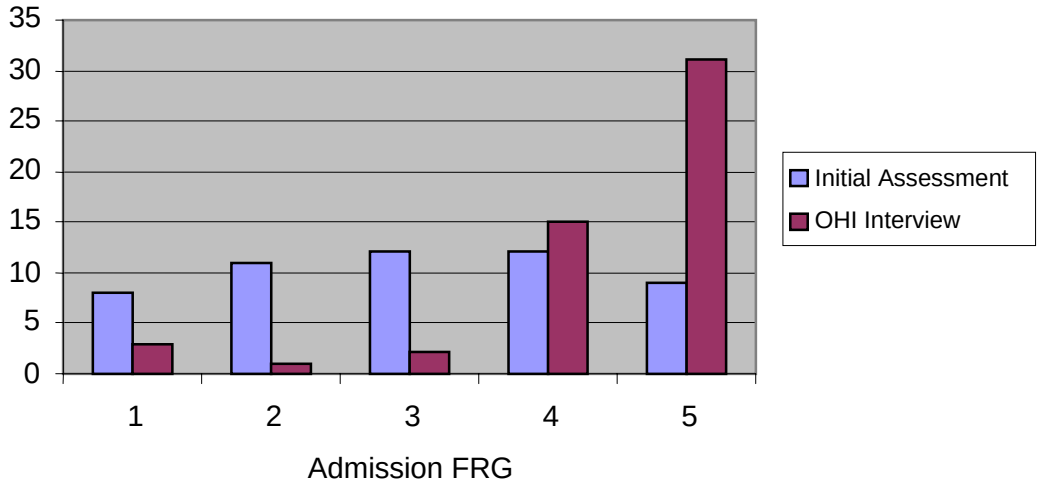



A significant association emerged between cognitive function and results from depression screening. Of the 27 patients with Cog-Log scores greater than 25, only 7 (26 percent) had scores on the CES-D depression screen which warranted referral for further evaluation. In contrast, among the 23 patients with Cog-Log scores of 25 or less, 14 (61 percent) screened positive for depression.

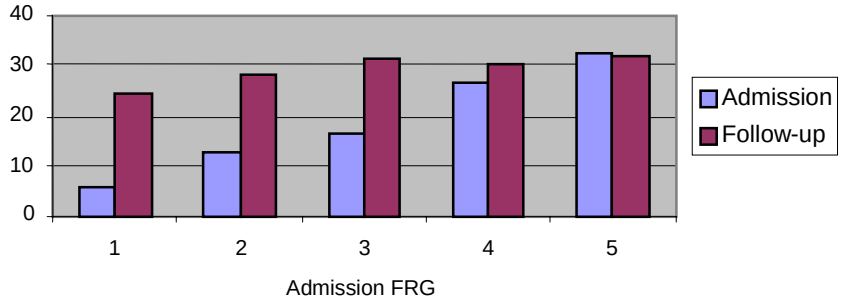
**b. Functional Independence Measure – FIM™**

At the time of our follow-up assessments—approximately 17 months after injury—Functional Independence Measure (FIM™) results indicated that most patients had achieved substantial recovery. Based on the FIM-based Functional Related Groups, 46 patients (compared to 21 patients initially) were in FRG 4 or 5 (Figure 7a). Most of the observed improvement occurred among patients with low initial functional independence scores; these are the patients who had suffered the most severe injuries. The pattern of improvement was similar for both the motor and the cognitive components of the FIM™ (Figures 7b and 7c).

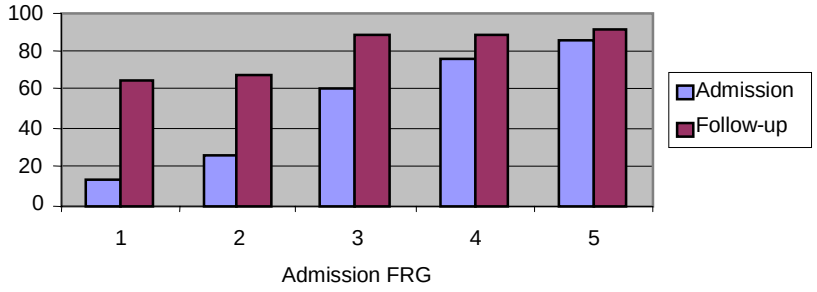
## Figure 7a. Functional Related Group (FRG) on Admission to TBI Lead Centers and at OHI Follow-Up Interview for 52 Patients




## Figure 7b. FIM Cognitive Sub-Scores




## Figure 7c. FIM Motor Sub-Scores



### c. Extended Glasgow Outcome Scale – GOSE

The Extended Glasgow Outcome Scale (GOSE) assesses degree of recovery and residual disability and is a widely used outcome measure in head injury research. We found that 19 patients (37 percent) required the assistance of another person at home for some activities of daily living.

Most patients in this review had achieved a high degree of independence. Nevertheless, only 10 (19 percent) reported that they were currently able to work to their previous capacity. Eighteen (37 percent) told us that they were able to participate in social and leisure activities at least half as often as before injury. Thirty-three (63 percent) said that "psychological problems" resulted in ongoing disruption in families or friendships, which prior to TBI had been a problem for only 11 (21 percent).

### d. Disability Rating Scale – DRS

Functional status was also measured with the Disability Rating Scale (DRS). We found that, consistent with findings described above with the FIM™, most patients interviewed had relatively mild disability by the time of our interviews, although 14 patients (27 percent) were rated as being completely unemployable.

## Behavior and Social Adjustment

Patient responses to the Community Integration Questionnaire (CIQ) revealed a substantial degree of social engagement as well as frequent functional dependence on others. Eighteen patients (35 percent) reported that someone else manages all their financial affairs and plans social arrangements. However, 32 patients (62 percent) reported that they usually participate in household shopping, 26 (50 percent) in everyday housework, and 24 (46 percent) in preparing meals.

Twenty-one (40 percent) had children in the home; of those 21, 12 (57 percent) described some participation in childcare. Of the 52 patients, 25 (48 percent) indicated that they engage in leisure activities 4 or fewer times per month, and 27 (52 percent) said they visit friends or relatives 4 or fewer times per month. Five patients (10 percent) indicated that they are usually alone for their leisure activities. Ten patients (19 percent) said they do not have a best friend in whom they confide.

In addition to the behavior and social adjustment issues identified by the CIQ, our focused questions about current activities revealed a range of issues. For example, two patients were participating in Alcoholics Anonymous and currently not drinking; five others described binge drinking, using alcohol to self-medicate, or drinking more than 2 ounces of alcohol daily.

Forty-three patients (84 percent) reported that there has been a change in their behavior since their TBI. Thirty-seven (71 percent) reported anger as a problem, and 7 (14

percent) indicated that violence has been a problem. Seven patients (14 percent) told us that they have had legal or criminal problems since their TBI.

In the case of one veteran, anger was such a problem that he was expelled from a private TBI treatment facility. This veteran lives at home with his parents and a brother. Anger and violence remain active issues, and he uses alcohol in an attempt to manage anxiety. He has been involved in two minor car accidents. Another veteran, who complained of memory loss, anger management, depression, and fatigue, disclosed in the interview that he was abusing alcohol.

## Access to Care

The Services Obstacles Scale (SOS) elicits responses about specific factors that may limit care and services for TBI patients (Figure 8). Twenty-five (48 percent) of the patients interviewed responded that, "For brain injury related problems, there are very few resources in the community."

Twenty patients (38 percent) responded that transportation was "a major obstacle toward getting enough help." Twenty-one patients (40 percent) felt uncertain about whether they were receiving quality care, and had moved or sought TRICARE.[39] Nine patients (17 percent) indicated that, "Lack of money to pay for medical, rehabilitation, and injury related services is a major problem."

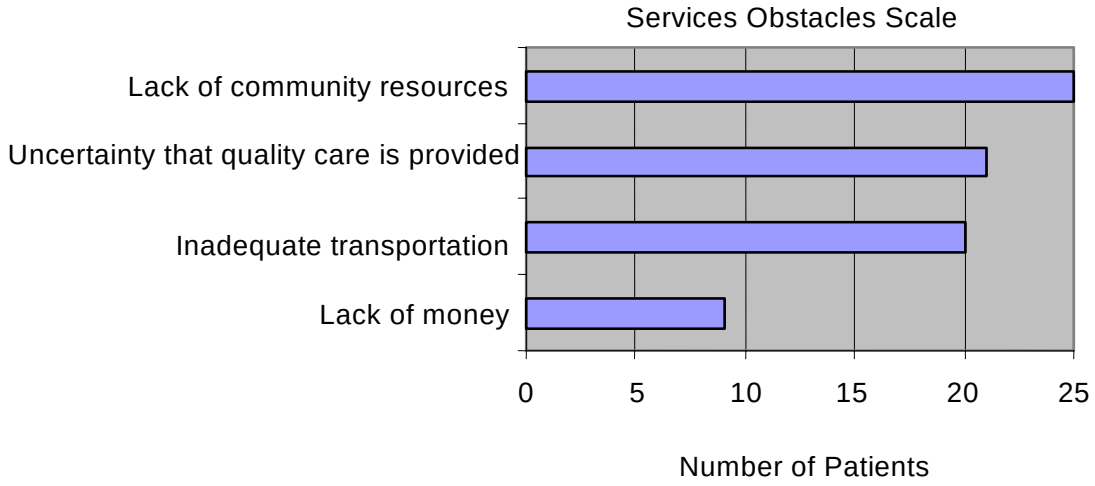
Four (8 percent) of the 52 patients interviewed reported that they were receiving no medical care. One of these indicated that he needed care but was unable to receive it because he was ineligible for benefits due to a less than honorable discharge from the military.

Thirty-nine patients (75 percent) were receiving some or all of their medical care at VA (27 patients) or DoD (12 patients) health care facilities. Nine of these 39 patients were receiving care from a combination of VA, DoD, and/or private providers. Nine patients (17 percent) were receiving exclusively private care, all funded through VA or DoD mechanisms. Four patients (8 percent) were receiving no medical care.

Thirty-four (65 percent) of the 52 patients interviewed stated that they were in contact with someone in the VA who was coordinating their care. Twenty-three of these 34 (68 percent) were able to name that person or to specifically describe that person's position.

[39] DoD Military Health System. http://www.TRICARE.osd.mil.

**Figure 8. Veterans' Perceived Barriers to Care**




## C. Benchmark Comparisons

A critical element of this inspection was the comparison of veteran and active duty patient outcomes with those of Model Systems patients, based on results from assessments using three instruments—the Functional Independence Measure™, the Extended Glasgow Outcomes Scale, and the Disability Rating Scale.

Overall, we found that VA TBI patients were more similar than different when compared with a similar group of Model Systems patients (Table 3). However, we also found that the groups differed substantially with respect to the median length of time from injury to initiation of comprehensive TBI rehabilitation (6.1 weeks for VA versus 2.7 weeks for Model Systems).[40] Functional characteristics remote from injury were comparable in the two groups, with somewhat greater persistent disability in the VA groups who had the most severe loss of functional independence at the time of admission to rehabilitation.

Aggregate FIM™ results revealed no significant difference between VA patients at 17 months from injury and Model Systems patients at 12 or 24 months, but analysis according to functional status at the time of admission to rehabilitation (that is, FRG) indicates worse outcomes for those VA patients who had the least initial functional independence (FRG 1-2).

[40] Because baseline FIM™ assessments are done within 72 hours of admission in Model Systems (MS) facilities, but may be done within 24 hours at VA centers, MS data were adjusted to add 1 day to time from injury to assessment. The effect of this adjustment is to decrease the difference between the 2 groups.

GOSE and DRS findings include small differences in overall scores, with disparities largely explained by differences seen between groups of VA and Model Systems patients who had the greatest degree of initial disability. For the GOSE, the median score for VA patients was 5, while for Model Systems patients the median score was 6—a difference of dubious clinical significance. A similar pattern was observed with the DRS (the VA median was 2; the Model Systems median was 1).

Comparative judgments about functional improvement in VA and Model Systems (MS) patients must be made with caution. Despite matching with respect to age, sex, education level, and employment at the time of TBI, the groups differed in several respects. The time from injury to follow-up assessment was longer in the VA group (17 versus 12 months) and could conceivably introduce a bias in that group's favor. This is not likely to be an important factor, because most improvement after TBI occurs in the immediate months subsequent to injury and because MS data indicate stable measures of functional independence between 1 and 2 years after injury. Of greater significance is that the two groups differ substantially with respect to the length of time from injury to entry into rehabilitation (6.1 versus 2.7 weeks). Baseline assessments by which patients are initially stratified into functional groups occur at the time of admission for rehabilitation, and any delay in obtaining those assessments is likely to miss recovery that has already been achieved. Patients with earlier functional assessments can be expected to be less functionally independent when compared with those whose assessments are delayed. Consequently, patients assessed earlier will appear to have greater improvement over time. Based on this uneven classification, VA patients would be expected to have relatively lower follow-up scores on measures of functional independence.

Beyond the issue of variable initial classification and limited comparability, delay in the initiation of comprehensive rehabilitation may be a distinct predictor of long-term outcome for victims of traumatic brain injury. Published data regarding post-TBI rehabilitation support the utility of comprehensive early rehabilitative interventions.[41] The longer time from injury to initiation of comprehensive rehabilitation observed for active duty patients may reflect more severe injuries, greater distance from the site of injury and initial care, and the necessity of transferring between the DoD and VA health care systems—all factors not under VHA control.

## D. Benefits Received by TBI Patients

VA data sources showed that 22 (69 percent) of the 33 patients discharged from the military had service-connected disability ratings at the time of interview. Twenty (61 percent) of the 33 had ratings of 50 percent or greater; 16 of the 33 (48 percent) were 100 percent service-connected. Five (15 percent) were receiving educational benefits, and nine (27 percent) were receiving vocational rehabilitation services.

[41] Horn LJ, Sherer M. Rehabilitation of traumatic brain injury. In: Grabois M, et al., Physical Medicine and Rehabilitation, 2000. Malden, MA: Blackwell Science, p. 1285.

## Table 3. Comparison of 47 VA Patients with Matched Model Systems Patients*

| | VA | | | | | | Model Systems | | | | | | Model Systems |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Admission Functional Related Group (FRG) | | | | | Year 1 | Admission Functional Related Group (FRG) | | | | | Year 2† |
| | TOTAL | 1 | 2 | 3 | 4 | 5 | TOTAL | 1 | 2 | 3 | 4 | 5 | TOTAL |
| **BASELINE** | | | | | | | | | | | | | |
| Number | **47** | 8 | 10 | 12 | 9 | 8 | **339‡** | 42 | 120 | 104 | 52 | 21 | **170‡** |
| % | 100 | 17.0 | 21.3 | 25.5 | 19.1 | 17.0 | 100 | 12.4 | 35.4 | 30.7 | 15.3 | 6.2 | |
| Age, mean (range) | **26** (19-48) | 24 | 32 | 22 | 27 | 24 | **31** (18-49) | 31 | 32 | 32 | 31 | 30 | |
| Cause of TBI, % MVA | **60** | 88 | 50 | 58 | 44 | 75 | **60** | 74 | 59 | 48 | 56 | 48 | |
| Wks. from injury to rehabilitation, median | **6.1** | 8.5 | 7.5 | 5.6 | 5.3 | 3.8 | **2.7** | 3.3 | 2.9 | 1.9 | 1.9 | 1.9 | |
| **FOLLOW-UP** | | | | | | | | | | | | | |
| Mos. since injury, median (range) | **16** (12-31) | 18 | 16 | 15 | 18 | 16 | **12.2** (9-18) | 12.1 | 12.4 | 12.1 | 12.3 | 12.5 | **24.4** (21-31) |
| Married (%) | **36** | 38 | 70 | 8 | 44 | 25 | **30** | 30 | 28 | 30 | 38 | 30 | **28** |
| At home (%) | **92** | 63 | 90 | 100 | 100 | 100 | **94** | 89 | 97 | 95 | 96 | 100 | **94** |
| FIM™, median | **121** | 110 | 107 | 124 | 120 | 125 | **122** | 120 | 121 | 123 | 124 | 124 | **124** |
| GOSE, median | **5.0** | 3.0 | 4.0 | 6.0 | 6.0 | 6.0 | **6.0** | 6.0 | 6.0 | 6.0 | 7.0 | 7.0 | **6.0** |
| DRS, median | **2.0** | 6.5 | 4.0 | 2.0 | 2.0 | 0.0 | **1.0** | 1.5 | 1.5 | 1.0 | 0.0 | 0.5 | **1.0** |

*Abbreviations: MVA, motor vehicle accident; FIM™, Functional Independence Measure; GOSE, Glasgow Outcome Scale- Extended; DRS, Disability rating Scale.

†Because Year 1 and Year 2 results are essentially unchanged, Year 2 results stratified by FRG are not displayed.

‡Model Systems provided data on 482 patients who met matching criteria. 339 of these had complete data, but each cell value is based on all available data for that cell.

## E. Issues Identified by Patients and Families

### Case Management

Case management involves the management and coordination of complex medical services to ensure quality and efficient use of health care resources.[42] It is a collaborative process that assesses, plans, implements, coordinates, monitors, and evaluates the options and services required to meet the client's health and human service needs.[43]

Patients and families highlighted the importance of case managers in facilitating care. However, they told OHI inspectors that the effectiveness of individual case managers ranged from outstanding to poor. Several patients expressed appreciation for the many efforts of case managers on their behalf. For example, the wife of one patient said that the assistance of their VA case manager has been invaluable. Another patient required transfer between several facilities and said case management worked well.

For other patients, the experience was less than optimal. The mother of a patient living in a remote setting said she had no one to help her navigate the VA system. She also reported that she was forced to pay out-of-pocket for necessary equipment and services for her son. The wife of another patient said that staff coordinating his care was not helpful and that for a full year they had to pay for a private physician. Another patient, who lives more than 2 hours from the nearest VA facility, told us that he had been unsuccessful establishing care closer to his home; he did not know the name of his case manager. As a final example of problems with case management, one service member reported significant problems with discharge planning when she left her TBI center.

At one of our interviews, a veteran's mother said that her son had run out of medications, was not receiving needed therapy, and had no appointment scheduled for follow-up care. Through the local VAMC, we scheduled an appointment for him to be seen by a primary care provider at a nearby VA Community Based Outpatient Clinic.

Case management issues affect both active duty and discharged OEF/OIF TBI patients and their families. For example, a veteran's mother stated that there should be better information for families about what VA benefits they should receive. She said that she was told that she would receive compensation for mileage when she transported her son back and forth for therapy. However, she was later told that they would not be reimbursed because it was "not in his orders."

[42] http://www.aafp.org/x6639.xml (02/17/2005).
[43] http://www.ccmcertification.org/pages/136body.html (02/17/2005).

### Geography and Access to Care

In certain instances, patients clearly benefited from living in the vicinity of VA treatment facilities. Patients and their families in Chicago and in Pittsburgh reported easy access to specialty care as needed. However, other patients lived in remote settings and required complicated special arrangements. For example, a 21-year-old marine injured by an IED in Baghdad lives in rural Georgia, where he receives private rehabilitative care because VA care is not readily available.

### Active Duty Status

As previously noted, many of the patients who received TBI care at Lead Centers—and continue to receive VA healthcare—remain on active duty. To assist these patients, DoD has assigned military liaison staff to each Lead Center. Patients and their families were very pleased with the presence of these military liaison staff. We also found DoD/VA collaboration to be clearly in evidence where military and VA medical facilities were located in the same community.

However, we also found that the situation of patients cared for by VA facilities but remaining on active duty was, at times, a barrier to receiving continuing rehabilitative care from both the VA and the DoD vantage point. For example, we identified one soldier on duty at a military post who had little constructive activity for several months while she waited to be discharged. She expressed concern that she had received no therapy since returning to her post, even though this had been recommended when she left the VA Lead Center.

Another patient still on active duty spent 4 months without rehabilitation after Lead Center staff told his family he would receive care at the VAMC near his home. At that VAMC, however, he was told he would not be eligible for care until he was retired or discharged. In summary, active duty patients receiving VA care for TBI face challenges unique to their status.

### Fee-Basis Care

Contracted fee-basis care provided necessary services to many veterans in this study, including those living nearby as well as those living remote from VA facilities. Patients were generally very satisfied with this care.

Fee-basis services were particularly important during the period when patients were making the initial transition from inpatient rehabilitation to living at home. However, some patients reported excessive delays in establishing needed services. It should be noted that several patients who remained on active duty were able to obtain services through TRICARE.

## Family Support

### a. Importance of Family Support for the Patient

Interviewers noted many instances of outstanding family support. Family care is clearly a critically important factor in patient recovery and ability to live at home. Likewise, lack of family support contributes to low functioning. We identified a homeless TBI patient and attempted to interview him for this review. This particular patient initially agreed to be interviewed, but repeatedly failed to appear at the agreed upon time. He appeared to lack even the most basic family support.

The mother of an active duty soldier told us that she was concerned about being unable to make arrangements for vocational rehabilitation for her daughter following discharge from the military. We referred her to the VA representative at her daughter's post so that she could initiate a claim for benefits.

### b. Stresses and Obstacles

Day-to-day life is difficult for families supporting patients with TBI. One family reported that a patient could not be left alone for safety reasons, even though the patient felt he was capable of living on his own. The wife of another patient reported that her husband is sometimes up all night, punching the wall and pacing the floor. The next day he has no recollection of these events. She stated that their children isolate themselves from him. At the time of interview, the family was planning to move to another state, where both husband and wife could get more help from extended family members.

One mother was working full-time and fearful that she might lose her job. She was frequently required to leave work to care for her son and said she had to make telephone calls during business hours to coordinate his care.

Additional cases illustrate the strain placed on families caring for TBI patients. A wife recounted that she had to send their 10-year-old son to a distant state to stay with grandparents because of the demands on her time caring for her husband. She also reported that she had lost her job because she had to travel to be with her husband and did not qualify for family leave.

### c. Social Support for Families

Families indicated that they very much needed, and sometimes received, episodic and ongoing support to manage the care of their injured family member. Several patients and their families said they had received psychological support and that this was helpful. Others said they received insufficient or no such support. The father of a veteran living at home said that his family did not receive enough education about what it was going to be like to live with someone with TBI. Still others described unanswered calls for help:

several sought the help of their Congressional representatives or resorted to calling the local newspaper as a means of getting help.

Spouses and parents reported that they felt isolated, and several suggested the need for a support network of and for affected families. One wife suggested that there should be someone specifically assigned to help families navigate the bureaucracy as they apply for monetary and health care benefits.

One family was particularly challenged because a son with TBI was ineligible for benefits after it was determined that he contributed to his injury due to misconduct. Thus, DoD and VA services were largely unavailable, and they were forced to rely on state assistance.

### Behavioral Problems

Most patients described significant changes in behavior resulting from their TBI. These changes were often associated with difficulties reintegrating into their communities. One wife said that she is fearful of taking her husband out to the mall or to restaurants because he becomes agitated and uses racial slurs. Friends and family have stopped coming to see them, and they therefore feel isolated.

Feelings of alienation are common. Several patients who are generally functioning well nevertheless tend to avoid social interactions and need frequent emotional support. One veteran gets very anxious and is sometimes overwhelmed in public places. Another said that he does not like to go out in public because people stare at him as if he is “less than a man.” Yet another goes to the mall with his family, but is discomfited when he perceives people to be staring.

Depression is a common problem in TBI. During our interview with one veteran, he described how hopeless he felt about his life and said that he needed help with substance abuse. We initiated a referral to a sheltered substance abuse program, and he was admitted for treatment.

Anger is also a frequent obstacle to optimal socialization. In addition to interfering with family life, poor anger management—especially when associated with unrealistic expectations—can interfere with therapy.

## F. Individual Success Stories

Many of the TBI patients we interviewed have experienced remarkable recoveries and have adapted well. One veteran stated that, despite occasionally feeling depressed and discouraged because of an uncertain future, his life is improved because he is now more focused “on what is good about life.”

Interviewers found another veteran living alone in a very neat and clean apartment. He was finishing vocational rehabilitation, working part-time, and planning to start college in a few weeks. At least three other patients had enrolled in college since suffering their TBI. One of these was an injured marine, an immigrant from Ethiopia, who became an American citizen during rehabilitation.

In at least three instances, patients had a positive change in their marital relationships despite or because of their TBI. One veteran said that he is easily frustrated with situations but never with people; he is working full-time and was engaged to be married. A second who lives with his wife and children told us that his marriage was in trouble before his accident, but going through the accident and recovery helped to strengthen his marriage. A third was married in the past year. His wife stays with him continuously or must arrange for someone else to stay with him.

## Part 2: VHA's TBI System of Care

In 1999, we published *Oversight Review of Selected Aspects of the Veterans Health Administration's Traumatic Brain Injury Program*.[44] Among the conclusions of that report were:

- TBI patients receive comprehensive, high-quality care at the Lead Centers and at many of the Network Centers.
- TBI patients require intensive case management.
- TBI coordinators devote insufficient time for the complexities of these patients.
- Family members lack the time and financial resources to adequately support TBI patients.

### A. Recent VHA Initiatives

VHA has responded to the growing demands of TBI care with a number of initiatives. In June 2005, VHA extended its comprehensive inpatient rehabilitation services by establishing Polytrauma Rehabilitation Centers (PRCs).[45] The Secretary of Veteran Affairs designated four PRCs to be co-located with the existing TBI Lead Centers. The directive reorganizing the approach to care delineates responsibilities for case management, to include proactively monitoring the patient's medical, functional and psychosocial status. It also specifies minimum requirements for core staff in all appropriate disciplines. These requirements call for a 1.0 full-time equivalent (FTE)

[44] OIG Report No.: 9HI-A28-119, June 30, 1999.
[45] VHA Directive 2005-024, Polytrauma Rehabilitation Centers, June 8, 2005

Social Worker Case Manager and a 0.5 FTE Admission and Follow-Up Clinical Case Manager for every six polytrauma beds.[46]

In the past, family members traveling long distances to be near patients at VA hospitals were sometimes inconvenienced and financially burdened. VHA responded by making use of community resources to address these unmet needs. In support of TBI patients and their families, the Fisher House Foundation builds and donates Fisher Houses to provide temporary lodging for family members of hospitalized active duty service members and veterans. There are now seven VA Fisher Houses, one of which is located at a facility with a Polytrauma Center (Minneapolis). The eighth VA Fisher House was recently opened at a second Polytrauma Center (Palo Alto). In addition, a Fisher House is currently under construction at the Tampa VAMC, and one is scheduled to be built at the Richmond VAMC in 2007.

A recent VHA Directive defines roles for staff at all VHA facilities to ensure a seamless transition of care for service members and veterans from DoD to the VA health care system.[47] Among the expectations outlined in this directive is that "Each returning combat veteran seeking treatment at a VA facility is assigned a facility OIF-OEF case manager…." These case managers are expected to "provide ongoing case management services to returning OIF and OEF service members, veterans, and their families over the course of time VHA health care services are being provided..." and to ensure "Ongoing communication and coordination of VHA services with the veteran and the veteran's family regarding VA benefits, health care coordination, and education…."

The new directive also calls for each facility to select a point of contact (POC) whose principal role is "to receive and expedite referrals and transfers of care…" and ensure "the receipt of copies of the military medical record from the referring MTF [military treatment facility]…." However, the directive "does not [VHA emphasis] include active duty military personnel who are serving in non-combat theaters of operation."

VHA has assigned social work staff to eight Army and Navy hospitals. These VA/DoD liaisons ensure the transfer of health care for patients as they move from military treatment facilities to VHA hospitals and clinics.[48] They also collaborate closely with case managers at VA hospitals and work with patients and families to assist them in applying for VA benefits. In addition, the Army has assigned liaison personnel to each of the VA TBI Lead Centers, now more commonly referred to as Polytrauma Centers.

VHA developed and disseminated extensive educational material, including a web-based learning module, regional training conferences, and VHA-wide informational letters to enhance the knowledge and skills of clinicians. VHA's War-Related Illness and Injury

[46] VHA Handbook 1172.1. Polytrauma Rehabilitation Procedures. September 22, 2005.
[47] VHA Directive 2006-017. The Role of VHA Points of Contact and Case Managers to Coordinate Care for Returning Combat Service Members and Veterans. April 3, 2006.
[48] Attachment A, VHA Directive 2006-017.

Study Centers have held four well attended regional conferences covering the latest research, clinical advances, and strategies for effectively most effectively providing services. A VHA system-wide training program sponsored by the VA Employee Education System and the VA Office of Public Health and Environmental Hazards produced a web-based comprehensive Veterans Health Initiative independent study course on TBI.

Other significant VHA actions, programs, and plans include the following:

- Designation that "all VA medical facilities become TRICARE network providers…to ensure VA's ability to meet its responsibility to provide timely care to service members returning from theaters of war.…"[49]

- Initiation of a comprehensive Polytrauma Telehealth Network, currently being implemented, which links the four Lead Centers with each other and their respective Veterans Integrated Service Network (VISN) sites "with the express intent of improving access to care for combat wounded who have polytrauma and facilitating care taking place closer to home."[50]

- Additional funds in support of vocational rehabilitation and other rehabilitation practices for veterans, so that Polytrauma VISN sites can formulate plans for new or expanded programs and are eligible to apply for additional funding, including "funds to enhance their CWT [Compensated Work Therapy] program by adding supported employment to serve veterans admitted to VHA polytrauma sites."[51]

- Establishment by the Health Service Research and Development Service of a Quality Enhancement Research Initiative for implementation of best practices in polytrauma and blast injuries.[52]

- Activation of a VHA Polytrauma Call Center in February 2006 for use by polytrauma patients and their families, staffed by nurses trained to answer questions about rehabilitation, follow-up care, and benefits.[53]

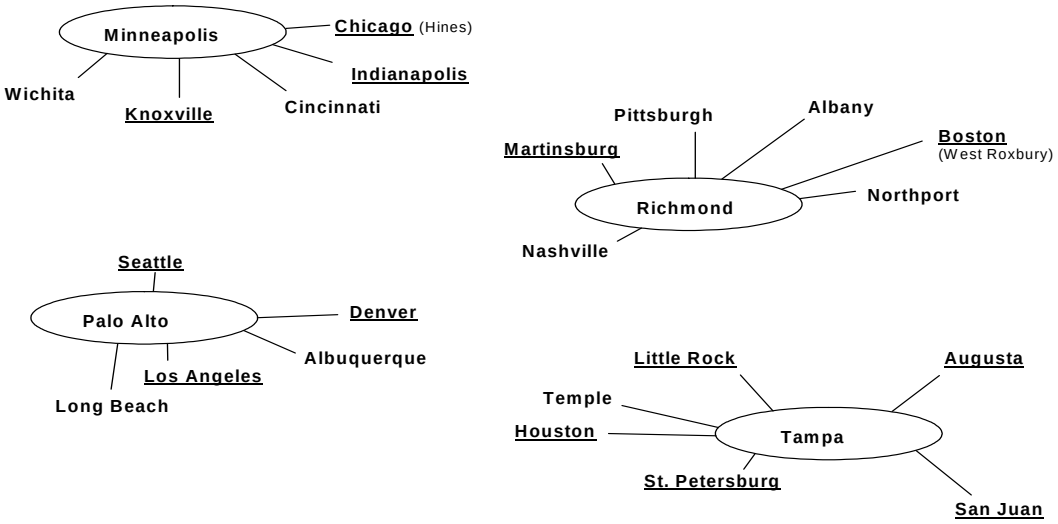
- Development of a Polytrauma Patient and Family Toolkit by the VHA Physical Medicine and Rehabilitation program office in collaboration with the Employee Education System.

[49] VHA Directive 2005-045. Treatment of Active Duty Service Members in VA Health Care Facilities. October 4, 2005.
[50] The VHA Polytrauma Telehealth Network. Briefing Document for Network Directors, Chief Medical Officers, and VISN Chief Information Officers. February 2006.
[51] VHA Funding Guidance for Enhancement of Psychosocial Rehabilitation Services and Approaches That Foster Veterans' Recovery from Serious Mental Illnesses. March 20, 2006.
[52] VHA Congressional Report on the Prosthetics Research and Integrative Health Care Initiative. February 15, 2006.
[53] Information sheet. VA's National Polytrauma Call Center. March 17, 2006.

## B. Lead Centers and Other Facilities

Lead Centers were established in 1992 as a component of the Defense and Veterans Head Injury Program (now Defense and Veterans Brain Injury Center) to improve management of brain injured patients. They continue to serve as the focal point of TBI care. We visited each of these centers and interviewed medical center leadership, TBI supervisors, and TBI case managers. We also visited two TBI Network Centers and three Associate Network Centers. The VHA TBI network of care is depicted in Figure 9. At the time of our review there were 16 Network Centers and 6 Associate Network Centers. Although all four Lead Centers had policies establishing a TBI program, only one of the Network or Associate Network Centers had such a policy.

**Figure 9. VHA TBI Network of Care**
Lead Centers are Shown Within Ovals
Network Centers are Underlined
Remaining Sites are Associate Network Centers




In addition to the network in place for TBI care, within VHA each VISN has designated sites responsible for polytrauma care and coordination.[54]

All four TBI Lead Centers have earned unqualified accreditation by the Commission on the Accreditation of Rehabilitation Facilities (CARF). This accreditation is intended to foster development of brain injury programs that are specialized, interdisciplinary,

[54] Attachment A. VHA Congressional Report on the Prosthetics Research and Integrative Health Care Initiative. February 15, 2006.

coordinated, and outcome focused.[55] In the most recent accreditation cycle, all four Lead Centers were cited for exemplary performance in many aspects of TBI care.

We identified several instances of outstanding service being provided by individuals and individual programs. At each of the sites, TBI physicians have well established university affiliations. At Palo Alto, an active research component was evident and the VA hospital was clearly a key element in Stanford University training programs. That site also included a Brain Injury Rehabilitation Unit, which allows for extended residential rehabilitation.

At the VAMC Martinsburg, WV—a Network Center—a domiciliary program was established as a national resource for disadvantaged TBI patients who require limited assistance and lack family support. At the Hunter Holmes McGuire VAMC in Richmond, VA, a very effective affiliation with a private neurological rehabilitation facility has provided veterans a much needed transitional care setting.

Rehabilitation staff at the Minneapolis VAMC displayed extraordinary creativity in supporting patients who were attending college with the use of portable data assistants (PDAs). Other patients were trained to use PDAs to manage their everyday activities, promote independence, and remain in the community.

The James A. Haley VAMC (Tampa, FL) TBI rehabilitation staff has taken leadership in enhancing and conducting educational activities for all VHA clinicians.

### C. Case Management

VHA policy requires two distinct functions for case managers providing services for TBI patients. Clinical case managers "require knowledge and clinical reasoning skills necessary to review the medical status of the patient, identify all of the current medical problems, evaluate the acuity level, assess factors surrounding readiness for inpatient rehabilitation, and monitor patient status until transfer is completed." They organize "the rehabilitation health care services that promote optimal outcomes for patients." Following discharge from inpatient rehabilitation, clinical case managers follow patients to monitor problems, coordinate ongoing rehabilitation care and services, advocate for the patient and family, and assesses clinical outcomes and satisfaction."[56]

The second role for case managers pertinent to TBI entails social work case management. Individuals fulfilling this function work in collaboration with clinical case managers to provide "supportive services for the family and caregivers" and "address home and community environment issues." In addition, social work case managers conduct a comprehensive psychosocial assessment, which includes "review of cultural issues, patient support systems, family and caregiver support systems, financial and vocational

[55] Commission on the Accreditation of Rehabilitation Facilities. http://www.carf.org/.
[56] VHA Directive 2005-024. Polytrauma Rehabilitation Centers.

status, and the living situation." These services "continue through the rehabilitation process and post-discharge, providing assistance with transitions to the referring military treatment facility (MTF) or other VHA facility, or to the home and community."

We examined the roles and functions of case managers at the TBI Lead Centers, Network Centers, and Associate Network Centers. We interviewed case managers during site visits, and we surveyed case managers at other facilities providing TBI care.

Case managers face many complex challenges. At two of the Lead Centers, case managers reported that one of the biggest challenges they face is receiving medical records from referring military facilities. They also reported difficulty securing long-term care placement of TBI patients, sometimes because of extreme behavioral problems.

Case managers at Lead and secondary centers identified a number of additional obstacles to optimal case management within the TBI network of care. These include limited ability to follow patients after discharge to a military facility or a remote living environment, and lack of adequate transportation and other resources such as dental care, support groups, and interim housing.

We found that case managers do not consistently coordinate the care of active duty patients following discharge from Lead Centers. For example, in one case a patient discharged from a Lead Center was told he would not be eligible for continuing care at the VA facility near his home until he was discharged from the military. We also found that long-term case management for patients already retired from the military is inconsistent. In particular, case managers at two of the Lead Centers reported using no tracking system for following patients after discharge.

The long-term cognitive and behavioral sequelae of TBI, such as memory loss and disruptive behavior, clearly require long-term case management to coordinate the complex care required by these patients and their families.[57] Although we identified gaps in the system of long-term case management for TBI patients, we also note that within VHA there is model of excellent comprehensive, lifelong follow-up for patients with spinal cord injuries (SCI). For the SCI System of Care, VHA provides guidelines to support, promote, and maintain the health, independence, quality of life, and productivity of individuals with SCI throughout their lives.[58] The SCI "hub and spoke" system of care employs an extensive database and network to track patients and ensure follow-up. Distinct management approaches for TBI patients may be required, but supporting these patients for a lifetime may be even more challenging.[59]

[57] Institute of Medicine. Evaluating the HRSA Traumatic Brain Injury Program. 2006.
[58] VHA Directive 1176. Spinal Cord Injury and Disorders System of Care.
[59] Brown M, Vandergoot D. Quality of life for individuals with traumatic brain injury: comparison with others living in the community. J Head Traum Rehab. 1998;13:1–23.

## Conclusions

### Health Status of TBI Patients Following Rehabilitation

As a group, the 52 patients interviewed for this review continued to suffer some degree of cognitive and behavioral impairment approximately 16 months after injury. Memory deficits, depression, anger, and social isolation were prominent findings. While most patients had achieved a substantial degree of recovery, approximately half remained considerably impaired.

### Comparisons with Model Systems of Care

VA TBI patients had very similar outcomes when compared with a matched group of non-VA Model Systems program patients. However, we noted that this group of VA TBI patients, all of whom were on active duty at the time of injury, had a longer time from injury to entry into rehabilitation.

### Case Management

Long-term case management efforts still need improvement. Brain injury causes major cognitive and behavioral problems with long-term consequences. The challenge of geographic isolation from VA facilities is frequently met through fee-basis arrangements. However, services are often very limited in the communities where injured veterans live, and multiple factors contribute to sub-optimal access to care. We found that for the 52 patients we interviewed, coordination of care varied significantly. Furthermore, numerous problems were associated with the transition from DoD to VA care. The large number of these patients still on active duty but primarily receiving their care from VA facilities presents a new challenge for VA and DoD. Improved coordination of care between VA and DoD for active duty patients is needed, and transmittal of appropriate medical records needs to be ensured.

### Support for Families

Families need additional support in the care of TBI patients. We found that families often provide heroic support for injured service members, but they frequently do so with limited assistance. The patients and families we interviewed identified the following resource needs:

- Family support groups.
- Community-based rehabilitation for TBI.
- Sheltered workshops and employment opportunities.

- Improved information about TBI for patients and families, including those without access to the Internet.
- Further assistance in obtaining benefits from DoD and VA.
- Greater assistance in making the transition from hospital to home.

If VHA is to meet the needs of TBI patients, it should provide improved support for the family members and other caregivers so vital to patient well-being in the long-term. Consideration should be given these identified needs.

## Recommendations

The Under Secretary for Health should:

A. Improve case management for TBI patients to ensure lifelong coordination of care.

B. Work with DoD to establish collaborative policies and procedures to ensure that TBI patients receive necessary continuing care, regardless of their active duty status, and that appropriate medical records are transmitted.

C. Develop new initiatives to support families caring for TBI patients, such as those identified by patients and family members we interviewed.

D. Work with DoD to ensure that rehabilitation for TBI patients is initiated when clinically indicated.

## Comments

The Under Secretary for Health concurred with our findings and recommendations and submitted acceptable improvement plans. (See Appendix A, pages 38–49 for the full text of the comments.) We are pleased that VHA has adjusted their policies in response to this review in an effort to improve care for TBI patients. We will follow up on the implementation of the proposed improvement plans.

*(original signed by:)*
JOHN D. DAIGH, JR., M.D.
Assistant Inspector General for
Healthcare Inspections

# Under Secretary for Health Comments

**Department of Veterans Affairs** **Memorandum**

**Date:** June 23, 2006

**From:** Under Secretary for Health (10)

**Subject:** **OIG Draft Report, Health Status of and Services for Inspection of Operation Enduring Freedom/Operation Iraqi Freedom Veterans after Traumatic Brain Injury Rehabilitation, Project No. 2005-01818-HI-0194, (EDMS 348399)**

**To:** Assistant Inspector General for Healthcare Inspections (54)

1. I have reviewed the draft report and I appreciate your efforts in working with VHA staff to amend the draft report to include recognition of VA's development of the polytrauma system of care, and its impact on care for patients with traumatic brain injury (TBI). In fact, development of the polytrauma system of care began even before your review, as VHA recognized the need to enhance specialized care for military service members and veterans who have severe and multiple catastrophic injuries, such as TBI, resulting from their service in Iraq and Afghanistan. I believe the enhancements to care implemented by VHA already either meet or exceed the intent of your recommendations. As VHA is already implementing them, I concur with your recommendations. Attached is an action plan that extensively outlines the steps already being taken to implement the recommendations.

2. As the report acknowledges, VA has responded to the growing demands of TBI care. VHA's expansion of the scope of care at the former TBI Centers to create Polytrauma Rehabilitation Centers (PRCs) offers additional services that include intensive psychological support treatment for both patient and family, and intensive case management. In addition, VA and DoD have established several initiatives to facilitate the transfer of injured service members to VA medical facilities. Such initiatives include a memorandum of agreement with DoD that establishes referral procedures for transferring active duty inpatient service members with TBI from DoD and VA facilities; VA social

workers assignments at selected military treatment facilities (MTFs) to coordinate patient transfers; uniformed service members stationed at PRCs to assist service members admitted to PRCs; and routine VA teleconferencing and videoconferencing with MTFs to coordinate medical care for injured service members. VA and DoD have also developed the capability to share electronic medical records bidirectionally to use in the care of shared patients. The VA/DoD Bidirectional Health Information Exchange (BHIE) supports the real-time bidirectional exchange of outpatient pharmacy data, allergy information, lab results, and radiology reports between all VA facilities and select DoD host sites receiving large numbers of OIF/OEF combat veterans such as the Walter Reed Army Medical Center, the National Naval Medical Center, and the Landstuhl Army Medical Center in Germany. I believe these actions are responsive to your recommendations for VA to work with DoD to ensure that rehabilitation for active duty TBI patients is continuous and initiated when clinically indicated.

3. As the report states, VA is not solely responsible for the efficiency in transitioning active duty service members into VA rehabilitation. It is imperative to note DoD's key responsibility in ensuring the timely start of rehabilitation for injured service members with TBI. With the exception of emergent care, VHA facilities, including PRCs, cannot legally care for active duty patients without first being authorized by DoD or TRICARE to do so. Entry of these patients into VA rehabilitation is dependent on the timeliness of DoD's release and authorization. Moreover, severely injured service members may also require additional time at MTFs for stabilization before TBI rehabilitation at a PRC can begin. Once an active duty service member has completed rehabilitation at a VHA PRC, additional care by other VHA facilities or community-based outpatient clinics can only be provided when authorized by DoD or TRICARE. The impact of such restrictions, the timeliness of DoD's referral for care, along with the possible additional time needed for medical treatment of severely injured patients, may all have a direct impact on an active duty patient's entry into VA rehabilitation; and it is therefore, not a fair comparison to non-VA model systems of rehabilitation. VHA will continue to work with DoD to address these issues.

4. I agree that support for family members and other caregivers is vital to patient well-being. Unlike DoD, VA is not authorized, except in very limited situations, to use its medical appropriations to provide services to families. Nonetheless, VHA recognizes the need for family support

in caring for loved ones, and currently works within statutory limitations to support the families of patients with TBI. As part of the polytrauma system of care, the Level II Polytrauma Network Sites are responsible for identifying VA and non-VA services available across the VISN to support the needs of families of patients with TBI/polytrauma. The attached action plan outlines the details of ongoing initiatives in this effort.

5. Thank you for the opportunity to review the draft report. If you have any questions, please contact Margaret M. Seleski, Director, Management Review Service (10B5) at 202-565-7638.

*(original signed by)*

Jonathan B. Perlin, MD, PhD, MSHA, FACP

Attachment

**Action Plan in Response to:** OIG Draft Report, Healthcare Inspections: Health Status of and Services for Operation Enduring Freedom/Operation Iraqi Freedom Veterans after Traumatic Brain Injury Rehabilitation (EDMS 348399)

**Project No.:** 2005-01818-HI-0194

**Date of Report:** Revised Draft Report, dated June 12, 2006

| Recommendations/ Actions | Status | Completion Date |
|---|---|---|

**Recommended Improvement Action(s) A: The Under Secretary for Health should improve case management for TBI patients to ensure lifelong coordination of care.**

Concur

VHA is in the process of developing its Polytrauma System of Care (PSC) for veterans with complex and multiple injuries, including TBI. The Office of Patient Care Services has taken the lead in coordinating the development of the PSC, and implementation strategies. A tiered system that optimizes resources and creates points of access across the continuum of care via utilization of regional treatment centers, Veterans Integrated Service Network (VISN) treatment sites, and the veterans' local VA medical centers has been planned. Care will be provided at the facility closest to the patient's home with the expertise to manage the specific rehabilitation, medical, or mental health needs. This will reduce the burden of unnecessary travel for the veteran and his/her caregiver and will allow lifelong coordination of care in the veteran's chosen community. The four tiers consist of:

1. **Polytrauma Rehabilitation Centers (PRCs)** were designated in April 2005 and are fully operational. These Level I or regional centers provide acute comprehensive medical, surgical, and rehabilitation care for complex and severe polytraumatic injuries. They maintain a full staff of dedicated rehabilitation professionals as well as dedicated consult services in all areas of polytrauma. These centers also serve as a resource to other facilities (Levels II-IV) in the system of care via the use of telerehabilitation for consultation, development of models of care and best practices in polytrauma care, and educational programs. Level I facilities provide all clinical services and serve concurrently as the Level II sites within their respective VISNs

2. **Polytrauma Network Sites (PNSs)** were designated in November 2005 and will be fully operational by September 30, 2006. These Level II or VISN sites manage veterans with polytraumatic injuries requiring specialized expertise as they return to their VISN area. They also provide specialized outpatient care to polytrauma patients not requiring inpatient services. These facilities provide a high level of expert care, a full range of clinical and ancillary resources, and serve as a resource to other facilities within their network. They consult, when necessary, with their regional PRCs through the use of telerehabilitation technologies. Level II Polytrauma Network Sites serve a critical juncture in ensuring lifelong coordination of care for TBI/polytrauma patients, and consists of 21 PNSs, one in each of VA's 21 VISNs. PNSs provide specialized post-acute rehabilitation services for patients discharged from PRCs and returning to their communities, develop a plan of care for new patients identified with TBI/polytrauma sequelae, build a referral network within their VISN, and identify VISN resources for TBI/polytrauma services. In collaboration and consultation with the PRCs, PNSs will provide the specialized clinical care and case management coordination that will meet the life long care needs of combat veterans with TBI/polytrauma. Level II PNSs will perform annual comprehensive follow-up evaluations focusing on prevention and early identification of complications related to TBI/polytrauma beginning September 2006.

3. **Level III Polytrauma Facility Teams (PFTs)** and **Level IV Polytrauma Care Coordination Points of Contact (POC)** will be identified by September 30, 2006, depending on the existing local resources and expertise. Level III PFTs will include providers with TBI/polytrauma expertise that deliver a continuum of follow up services in consultation with Level I and II specialists. They will assist in management of existing polytrauma sequelae and will address emerging problems through consultation with Level I or II specialists. Level IV POCs will serve as coordinators of referrals and consultations of the TBI/polytrauma patients to Level I, II, or III facilities that provide the level of services required for optimal management of patients' needs. The Level IV POC will be knowledgeable of the services available within the system of care and avenues for access.

The Office of Social Work (OSW) revised VHA Directive 2005-017, "Social Work Case Management in VHA", in May 2006, to completely describe the functions expected of social worker case managers, the requirement for after-hours coverage, and the requirement for transfer of case management functions to a case manager at the facility providing follow-up care. OSW is

also collaborating with Rehabilitation Services to hire and train social worker case managers at Level II PNSs. These case managers will provide long-term case management services and coordination of care for polytrauma patients and will serve as liaisons to their families. Hiring of Level II social worker case managers will be completed by September 30, 2006. Documentation templates for social work and nurse case management follow-up have been developed and will also be distributed to the Level II PNSs by September 30, 2006. Consistent documentation of case management follow-up in the medical record will improve communication among professionals involved with patients' care regarding medical, rehabilitation, psychosocial and administrative issues that are being followed and the services offered.

A mentorship and orientation program for TBI/polytrauma case managers will be developed by September 30, 2006. Level I PRC case managers will serve as mentors and consultants to the case managers at the Level II PNSs.

VA primary care, mental health, and rehabilitation care providers will complete TBI training using the intranet-based independent study course, "Traumatic Brain Injury" available on Veterans Health Initiative (VHI), by June 30, 2007. Given the VA population's high rate of exposure to conditions that may cause TBI, it is important that VA clinicians maintain a low threshold to suspect TBI and to initiate its management. It is important to recognize that brain trauma causes both acute and delayed symptoms that require prompt identification and multidisciplinary evaluation and treatment. Providing specialized health care for military personnel and veterans sustaining a brain injury continues to be a high VA priority.

The Office of Seamless Transition, the VA/DoD Liaison Office, and the Office of Nursing Services are collaborating to enhance registered nurse (RN) case management services for TBI and other polytrauma patients within VHA. Initial plans include evaluating current RN case management resources within VHA; identifying the role for RN case management in DoD and the VA for TBI and polytrauma care; reviewing existing or established clinical case management networks for TBI and other polytrauma patient care; completing a gap analysis on the abovementioned findings; establishing a VA/DoD network of RN case management for acute and long-term care of TBI and other polytrauma patients in collaboration with other disciplines on the case management team. It is anticipated that these actions will be completed by September 2006.

VA/DoD Nurse Liaisons will be stationed at Walter Reed Army Medical Center and National Naval Medical Center. The Liaison will assist with

identifying and transmitting appropriate medical records to the receiving facility. Interviews for the position have been completed and hiring is expected by September 30, 2006.

| | | |
|---|---|---|
| | In process | June 30, 2007 and on-going |

| Recommendations/ Actions | Status | Completion Date |
|---|---|---|

**<u>Recommended Improvement Action(s) B</u>: The Under Secretary for Health should work with DoD to establish collaborative policies and procedures to ensure that TBI patients receive necessary continuing care regardless of their active duty status, and that appropriate medical records are transmitted.**

Concur

A 2002 Memorandum of Agreement (MOA) entitled, "Department of Veterans Affairs (VA) and Department of Defense Memorandum of Agreement Regarding Referral of Active Duty Military Personnel Who Sustain Spinal Cord Injury, Traumatic Brain Injury, or Blindness to Veterans Affairs Medical Facilities for Health Care and Rehabilitative Services" has been revised. This MOA provides a comprehensive summary of the coordinated policy and procedures that ensure traumatic brain injury patients receive the necessary continuing care regardless of their active duty status. The revised MOA amends the billing/reimbursement changes for services rendered and will be effective October 2006.

To provide continuing care from DoD to VA for injured service members, particularly those who are severely injured in Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OEF), VA requires information from DoD on the service members who will be transitioning to VA for care and benefits. On June 29, 2005, DoD and VA signed a Memorandum of Understanding (MOU) for the purpose of sharing data between DoD and VA. The Departments are making significant progress in sharing pertinent health information as service members and veterans are transferred from Military Treatment Facilities to VA Medical Centers. In addition to hard copies of the medical record that accompany the patient, VA's Polytrauma Rehabilitation Centers (PRCs) have read only access to electronic medical information at Walter Reed Army Medical Center (WRAMC) and Bethesda National Naval Medical Center (BNNMC). VA staff has trained and continues to train VA clinicians to access and utilize this information. VA's PRCs have initiated monthly video teleconferences with the treatment teams at WRAMC and

BNNMC. This has proven to be an effective means of communicating information that is not typically documented in the medical record.

VA and DoD also developed the capability to share electronic medical records bi-directionally to use in the care of shared patients. The VA/DoD Bidirectional Health Information Exchange (BHIE) supports the real-time bidirectional exchange of outpatient pharmacy data, allergy information, lab results, and radiology reports between all VA facilities and select DoD host sites receiving large numbers of OIF/OEF combat veterans such as the WRAMC, the BNNMC, and the Landstuhl Army Medical Center in Germany.

VA/DoD Nurse Liaisons will be stationed at WRAMC and BNNMC. The Liaisons will assist with identification and transmittal of appropriate medical records to the receiving facility. Interviews for the position have been completed and hiring is expected by September 30, 2006.

| | | |
|---|---|---|
| | On-going | September 30, 2006 |

| Recommendations/ Actions | Status | Completion Date |
|---|---|---|

**<u>Recommended Improvement Action(s) C</u>: The Under Secretary for Health should develop new initiatives to support families caring for TBI patients, such as those identified by patients and family members we interviewed.**

Concur

Support for family members and other caregivers is vital to patient well-being. Unlike DoD, VA is not authorized to use its medical appropriations, except in very limited circumstances, to provide services to families. Nonetheless, VA recognizes the need for family support in caring for loved ones, and has worked to support families, within the bounds of its authorities. As part of the Polytrauma System of Care, the Level II Polytrauma Network Sites (PNS) are responsible for identifying VA and non-VA services available across the VISN to support the needs of patients and families with TBI/polytrauma. The following actions are ongoing in this effort:

- Level II sites will develop an inventory of TBI specific services by September 30, 2006; and
- A Polytrauma Helpline Service monitored by the Office of Seamless Transition has been set up for patients who have been treated at one of

the VA PRCs and their families. The purpose of the Helpline is to answer questions regarding health care problems, including clinical emergencies and administrative/benefits issues. This toll-free Helpline is available 24 hours a day, seven days a week to answer patient and family questions.

The Office of Physical Medicine & Rehabilitation is partnering with the Offices of Social Work (OSW), Seamless Transition, Mental Health, Spinal Cord Injury and Geriatrics and with Walter Reed Army Medical Center to plan a satellite broadcast called, "Serving our Newest Generation of Veterans." The May 2006 broadcast will include presentations on understanding the military culture; providing appropriate care across the life span; addressing the needs of families of polytrauma patients through supportive services; educating patients, families and staff about polytrauma rehabilitation (which includes a video about the four PRCs), amputation care, cognitive issues, physical and recreation therapy needs of polytrauma patients; and transforming the rehabilitation environment to better meet the needs of young polytrauma patients.

The Office of Patient Care Services (PCS), supported by its subordinate offices in Spinal Cord Injury, Physical Medicine & Rehabilitation, and Social Work, and other various offices including the Office of the Deputy Under Secretary for Health for Operations and Management, the Office of Public Health and Environmental Hazards, VHA Business Office, VHA Chief Communications Office, VHA Office of Information, VHA Office of Policy and Planning, Nursing, Seamless Transition, Voluntary Service, Employee Education, Quality Enhancement Research Initiative (QUERI)/Research, and VISN offices, is spearheading an effort to develop plans for serving the next generation of veterans. Bi-weekly action items include planning focus groups for veterans, family members, veteran advisory groups, and employees; developing research opportunities; identifying "best practices" from non-VA rehabilitation centers; developing strategies to improve case management and care transition; assessing health and mental health care needs; and developing a compendium of resource information. PCS is also working with the Department of the Army and the Intrepid Fallen Heroes Foundation to develop plans for clinical support for the Center for the Intrepid, a state-of-the-art rehabilitation center currently under construction at Brooke Army Medical Center in San Antonio, TX. VA will have 7 staff on site providing rehabilitation services, assisting with seamless transition to VHA facilities, and assisting with making claims for VA benefits. A Memorandum of Agreement with the Army, outlining roles and responsibilities, is in concurrence. The Center is scheduled to open in January 2007.

Each PRC currently has an Army liaison to help with invitational travel orders, medical boards, and accessing military benefits; a VBA benefits counselor to educate patients and families about VA benefits and to help them apply; and a representative from the Military Severely Injured Service Center. By December 30, 2006, three of the four VHA Polytrauma Centers will have a Fisher House to lodge the families of hospitalized active duty service members and veterans. By June 30, 2007, the fourth Polytrauma Center in Richmond will also have a Fisher House. The Palo Alto VA Fisher House opened in April 2006. The completion of the Tampa VA Fisher House is scheduled for Fall 2006. In addition, Social Work and Voluntary Service are collaborating to assure PRCs, Level II PNSs and all other VHA facilities have General Post Fund accounts for family lodging, meals and local transportation. Voluntary Service has worked closely with Veterans Service Organizations (VSOs) and community groups to increase donations for this very important purpose.

The Office of Social Work (OSW) is working with the Fisher House Foundation to provide free airline ticket vouchers for the families and significant others of injured OIF/OEF patients to allow them to travel to the VHA facility where the patient is being treated. OSW worked with Rehabilitation Services, the Office of Seamless Transition (OST), and VHA's Employee Education System (EES) to develop a series of conference calls on seamless transition and TBI/polytrauma rehabilitation for VHA social workers, including those working with polytrauma patients and serving as case managers. Recent discussions include VHA services at PRCs, seamless transition, readjustment, rehabilitation, and family issues.

VA is the host agency for the 21st Annual Uniformed Services Social Work Conference, which is attended by uniformed and civilian social workers from Air Force, Army, Navy, Public Health Service of the Department of Health and Human Services, and VA. The conference will be held August 1-4, 2006. VHA EES is sponsoring the conference, which is now entitled "Uniformed Services Social Work & Seamless Transition Conference." The conference is open to all VHA and VBA staff. VHA social worker liaisons assigned to Military Treatment Facilities will attend. The conference will feature a track of workshops on seamless transition, including sessions on VA and DoD benefits; supportive services for service members, veterans and their families; polytrauma rehabilitation; and the needs of younger veterans. Plenary sessions will feature a panel of military social workers who were deployed to Iraq and Afghanistan; a panel of injured service members, veterans and their families; and a presentation on readjustment issues and post-traumatic stress disorder (PTSD).

| | | |
|---|---|---|
| | In process | August 4, 2006 and on-going |
| Recommendations/ Actions | Status | Completion Date |

**<u>Recommended Improvement Action(s) D</u>: The Under Secretary for Health should work with DoD to ensure that rehabilitation for TBI patients is initiated when clinically indicated.**

Concur

VHA has completed a number of processes to facilitate referral and transfer of clinical care of patients with TBI for rehabilitation, including:

- Admission criteria that indicates medical readiness for rehabilitation (VHA Handbook 1172.1, paragraph 7);
- Standardized referral process coordinated through the VA/DoD Social Work case managers (Handbook 1172.1, paragraph 8);
- Recommendations that all patients with polytraumatic injuries be referred to a VHA Traumatic Brain Injury (TBI)/Polytrauma Rehabilitation Center (PRC) (Handbook 1172.1, paragraph 8.b.);
- Military Treatment Facility (MTF) and VHA physician to physician communication prior to transfer;
- Video teleconferencing between the VHA TBI/PRC and the MTF to track patients that may potentially be transferred to VHA;
- Exchange site visits between VHA TBI/PRC, National Naval Medical Center (NNMC) and Walter Reed Army Medical Center (WRAMC) clinical staff to exchange information on clinical programming; and
- Current recruitment for a VA/DoD Nurse Liaison at WRAMC and NNMC to monitor and coordinate clinical transition.
- The 2002 Memorandum of Agreement also defines parameters for the initiation and transfer of care.

While VA will continue to work with DoD to ensure that rehabilitation for TBI/polytrauma patients is initiated when clinically indicated, by law, VA's provision of care for active duty patients is limited until authorized by DoD, in time of war or a national emergency. However much VHA advocates, it is

DoD that ultimately decides when active duty service members receive care. VHA also recognizes that additional time for medical treatment for severely injured patients, along with the time of DoD referral for care, may have a direct impact on the onset of VHA TBI rehabilitation, after a patient has undergone treatment at a MTF.

Completed On-going

**Appendix A**

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| | |
|---|---|
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**Appendix D**

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