Traumatic Brain Injury Registry (TBI)

Release Notes

Increment 4

Version 4.0

June 2012

Revision History

Date	Description	Project Manager	Author
6/23/2012	Reviewed and formatted	John Sanders	Dan Zaudtke
4/26/2012	Added Tracker 1524 and 1555 to the list of enhancements. Updated the related user manual documents.	John Sanders	Scott Smith
4/18/2012	Create Initial Draft Release Notes document	John Sanders	Scott Smith

Table of Contents

Introduction

Overview

On 3/20/2007 Barbara Sigford, M.D., National Program Director, Physical Medicine and Rehabilitation, submitted a request to create a Traumatic Brain Injury (TBI) national registry (http://vista.med.va.gov/pas/ViewTrackingRecord.asp?RequestID=20070314). On 4/19/2007, the Returning Global War on Terror (GWOT) Heroes Task Force Report was published and recommended screening of all GWOT veterans seen in VA health care facilities for mild to moderate TBI and creation of a TBI database to track patients who have experienced TBI (http://www1.va.gov/taskforce/docs/GWOT_TF_Report_042407.pdf).

In 1992, VA in collaboration with the Defense and Veterans Brain Injury Center (DVBIC) established four comprehensive TBI centers to provide care for these veterans. In March/April 2003, VA began to receive increasing numbers of Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) TBI injured service members. As the number of OIF/OEF TBI patients has grown, so has the need to track and monitor care to meet the lifelong needs of these veterans. In March 2007, a Computerized Patient Record System (CPRS) OIF/OEF TBI Screening Reminder was released. This is a first-line screening tool to identify potential TBI patients. Additional information about veterans who have been identified as possible TBI patients by the initial Screening Reminder needs to be collected through a follow-up evaluation. Aggregate data about the number of veterans that have been screened will be sent to a national database at the Austin Automation Center (AAC), but Reminder results of individual veterans are not available at the AAC. Individual patient results from initial screening and follow-up evaluations are needed in the TBI Registry in order to provide relevant responses to key stakeholders, such as members of Congress, to monitor the quality of care and to implement system improvements.

The TBI Registry will enhance the tracking of patients who may have experienced a traumatic brain injury. Review of the information collected also will allow VA to monitor quality of care and implement any identified improvements to the system of care. It would improve the VA's ability to analyze trends in health care needs and facilitate planning to meet TBI patient needs.

History:

TBI is a common form of injury found in service men and women serving in OEF and OIF. Details on the screening and management of TBI can be found in the Employee Education System Veterans Health Initiative (VHI) module (see par. 5). As experience with this condition in OEF and OIF veterans increased, it became clear that screening for possible TBI in OEF and OIF veterans could contribute to ensuring that cases are identified and treatment implemented.

In response to this need, VHA established a task force including members with expertise in Physical Medicine and Rehabilitation, Neurology, Psychiatry, Psychology, Primary Care, Prevention, and Medical Informatics to develop a screening tool and evaluation protocol. Although TBI is a significant public health problem, currently there are no validated screening instruments accepted for use in clinical practice. Therefore, the task force reviewed existing literature on screening for TBI, examined the efforts of individual military medical treatment facilities (MMTF) and Department of Veterans Affairs (VA) Medical Centers that had implemented TBI screening locally, consulted with the Defense and Veterans Brain Injury Center (DVBIC), and considered data on the natural history of TBI. Based on these efforts,

the task force developed a screening instrument to assist in identifying OEF and OIF veterans who may be suffering from TBI, and a protocol for further evaluation and treatment of those whose screening tests are positive.

A national clinical reminder, VA-TBI Screening, was built incorporating this screening instrument. The reminder has several elements, as follows:

(1) The first step of the reminder is to identify possible OEF and OIF participants based on whether date of separation from military duty or Active Duty status occurred after September 11, 2001.

(a) Similar to the "OEF/OIF Post-Deployment Screening Reminder," the initial questions address location of deployment.

(b) The definition of OEF/OIF participant is the same as used for the "OEF/OIF Post-Deployment Screen," which includes service in: Afghanistan, Georgia, Kyrgyzstan, Pakistan, Tajikistan, Uzbekistan, or the Philippines, and includes an "other" category. OIF, includes service in Iraq, Kuwait, Saudi Arabia, Turkey, and an "other" category.

(c) The screening is done once, for all individuals who report deployment to OEF and OIF Theaters, and is to be repeated if the date of separation has changed due to repeat deployment. The reminder recognizes if screening was completed prior to the most recent date of separation.

(2) The reminder then asks whether the patient has already been diagnosed as having TBI during OEF or OIF deployment. Positive answers can be based on patient or caregiver self-report or health records from VA or non-VA sources. Positive answers lead to an option to order a referral for follow-up if the patient does not have current follow-up and wants assistance.

(3) For those who confirm OEF or OIF deployment and do not have a prior diagnosis of TBI, the instrument proceeds using four sequential sets of questions.

(a) The four sections are:
1. Events that may increase the risk of TBI.
2. Immediate symptoms following the event.
3. New or worsening symptoms following the event.
4. Current symptoms.

(b) If a person responds negatively to any of the sets of questions, the screen is negative and the reminder is completed. If the patient responds positively to one or more possible answers in a section the next section opens in the reminder to continue the screening process.

(4) If a person responds positively to one or more questions in each of the four sections, the screen is positive, the clinician discusses the results of the screen with the patient, and arrangements for further evaluation are offered. The reminder prompts the user to place a consult for further evaluation, or documents refusal.

Not all patients who screen positive have TBI. It is possible to respond positively to all four sections due to the presence of other conditions, such as: Post-traumatic Stress Disorder (PTSD), cervico-cranial injury with headaches, or inner ear injury. Therefore, it is critical that patients not be labeled with the diagnosis of TBI on the basis of a positive screening test. Patients need to be referred for a comprehensive evaluation to substantiate the diagnosis.

The VHA task force also developed a defined protocol for completing the additional evaluation by a specialized team. The Comprehensive TBI Evaluation is a comprehensive evaluation which includes the origin or etiology of the patient's injury, assessment for neurobehavioral symptoms (using the twenty-two question Neurobehavioral Symptom Inventory), a targeted physical examination, and a follow up treatment plan. A template for documentation of this evaluation has been developed and deployed. The diagnostic conclusion regarding the occurrence of a TBI must be documented on this template. All TBI evaluations must be completed using the Comprehensive TBI Evaluation template. This application is currently hosted and supported by the VHA Support Service Center (VSSC) and is accessible using the Computerized Patient Record System (CPRS) Tools menu. This application was well received and functional in the field for over 18 months.

The TBI Registry will be incorporated into a common database back-end and seamless front-end application structure, as part of the Registries Program Integration project. The Registries Database will be hosted on infrastructure within the Corporate Data Warehouse (CDW).

TBI **Inc. 4.0** adding two new instruments, updating the question format of the Comprehensive and Follow-up Examination forms, and adding Medical Data Web Service (MDWS) logfiles to provide troubleshooting for errors within MDWS.

Included in this update is:
1. 1403– MPAI Instrument
2. 1404 – TBI Care Plan
3. 929- Log what MDWS returns
4. 930- Log what is sent to MDWS
5. 1078- Standardize Follow-up form to be more like Comprehensive TBI Evaluation form
6. 1524- Change flow for Completed Comprehensive Instruments
7. 1555-Current User information missing on all survey screens

Purpose of this Manual

The purpose of this Release Notes document is to provide high-level user and technical information about enhancements to Traumatic Brain Injury functionality in the TBI Registry.

Related Documents

- Traumatic Brain Injury (TBI) Installation Guide, Version 4, April 2012
- Traumatic Brain Injury (TBI) Instrument User Manual, Version 4, April 2012
- Traumatic Brain Injury (TBI) Polytrauma User Manual, Version 4, April 2012
- Traumatic Brain Injury (TBI) User Manual, Version 4, April 2012
- Traumatic Brain Injury (TBI) System Management Guide, Version 4, April 2012

Acronyms and Definitions

Acronyms

Acronym	Description
AAC	Austin Automation Center
CDW	Corporate Data Warehouse
CONOPS	Concept of Operations
CPRS	Computerized Patient Record System
DoD	Department of Defense
DVEIR	Defense and Veterans Eye Injury Registry
DVBIC	Defense and Veterans Brain Injury Center
ETL	Extract, Transform and Load
GWOT	Global War on Terror
Inc.	Increment
MDWS	Medical Data Web Service
MMTF	Military Medical Treatment Facility
OEF/OIF	Operation Enduring Freedom/Operation Iraqi Freedom
PTSD	Post-traumatic Stress Disorder
SM/Vets	Service Members/Veterans
TBI	Traumatic Brain Injury
VA	Veterans Affairs
VAMC	Department of Veterans Affairs Medical Center
VSSC	VHA Support Service Center
VistA	Veterans Health Information Systems and Technology Architecture
VISN	Veterans Integrated Service Network
VHA	Veterans Health Administration

Definitions

Term	Definition
HL7	Health Level 7 is an interface specification designed to standardize the way in which health care information is transferred between systems. IVM utilizes the **V**ist**A** HL7 package to assist in transporting data using this specification.

User Release Notes

New Features, Functions, and Enhancements

Traumatic Brain Injury Registry (TBI Inc. 4)

New Features include:

- 1403– MPAI Instrument- The Mayo-Portland Adaptability Inventory-4 (MPAI-4) is a new clinical assessment instrument. The Mayo-Portland Adaptability Inventory (MPAI) was designed:
  - to assist in the clinical evaluation of people during the postacute (posthospital) period following acquired brain injury (ABI),
  - to assist in the evaluation of rehabilitation programs designed to serve these people, and
  - to better understand the long-term outcomes of acquired brain injury (ABI).
- 1404 – TBI Care Plan- The Rehabilitation and Reintegration Care Plan manages the ongoing and emerging rehabilitation and psychosocial needs of Veterans with polytrauma and TBI. This includes ongoing follow up and treatment, case management, coordination of services, monitoring the implementation of the treatment plan, overseeing the quality and intensity of VA and non-VA services, and providing education and support for patients and caregivers.

New Functions include:

- 929- Log what MDWS returns – The application will create and maintain a MDWS logfile containing key information to indicate what MDWS returned to the application. The information maintained is:

  a. all incoming data
  b. date/time stamp of each incoming transaction
  c. a copy of the data being returned to the Registry
  d. maintain 30 days of MDWS Result logs online.

- 930- Log what is sent to MDWS - The application will create and maintain a MDWS logfile containing key information to indicate what MDWS sent to VistA. The information maintained is:

  a. requests to VistA
  b. date/time stamp of each outgoing transaction
  c. a copy of the function being sent to VistA
  d. a copy of the data arguments being sent to VistA
  e. maintain 30 days of MDWS Request logs online.

Enhancement capabilities include:

- 1078- Standardize Follow-up form to be more like Comprehensive TBI Evaluation form – Modified the structure of the questions on the Comprehensive TBI Evaluation and the Follow-up TBI Evaluation forms to improve the user interaction within the application screen.

- 1524- Change flow for Completed Comprehensive Instruments – If a user selects the "Comprehensive TBI Evaluation" button on the first screen, and the Comprehensive TBI Evaluation has already been completed, the user will be directed to the TBI Survey Summary screen, and the CPRS formatted note will be displayed. The only button available will be the BACK button, and if the user selects it, the user will be re-directed to the first screen.

- 1555-Current User information missing on all survey screens - Current User information is not displayed on all 4 questionnaire screens and the Survey Summary screen. All instrument screens modified to display Current User information.

Functional Performance

- There are no new functional performance requirements for this increment.

Technical Release Notes

Data Dictionary Changes

N/A

HL7 Messaging Changes

- There are no HL7 message formats for this application..