VA TBI Screening and Evaluation Program

Joel Scholten MD
National Director, Physical Medicine and Rehabilitation

Douglas Bidelspach MPT
Rehabilitation Planning Specialist
Poll Question

• How familiar you are with diagnosis and treatment of TBI?
  o Not at all
  o A little
  o Moderately
  o Very familiar
Organization of Today’s Presentation

• TBI Screening and Evaluation Background

• Implementation and Enhancements to Programming

• Research Findings

• Treatment following a TBI Diagnosis
  • Individualized Rehabilitation and Community Reintegration Care Plan (IRCR)
  • Mayo-Portland Participation Index (M2PI)

• Opportunities for future Investigation
TBI- to Screen or Not to Screen

• Initial focus at onset of OEF/OIF on returning Servicemembers with moderate and severe TBI, obvious injuries requiring inpatient rehabilitation.

• Increasing number of Servicemembers and Veterans noting multiple symptoms following deployment.
  - Evaluation and treatment was inconsistent.
  - Pressure on DoD and VA to develop a system to address this cohort.

• Collaboration through DVBIC to develop a screening tool.
  - Deployed by VA April 2007

• Debate on cause of symptoms: TBI vs. PTSD vs. both vs. ???

VETERANS HEALTH ADMINISTRATION
VHA Directive 2010-012 - Screening and Evaluation of Possible TBI in OEF/OIF(OND) Veterans

Outlines screening and evaluation requirements

- Screening and evaluation address OEF/OIF/OND deployment related injuries

- Positive screens must be offered referral for Comprehensive TBI Evaluation (CTBIE)

- CTBIE template should only be completed following a positive screen for OEF/OIF/OND deployment related injuries

- CTBIE is to be completed at Polytrauma Network Sites or Polytrauma Support Clinic Team sites by a TBI Specialist
  - Other sites (Polytrauma Point of Contacts) or use of other providers must be requested through an alternate plan submitted through VISN CMO for approval by National Director PM&R
TBI Clinical Reminder

• Section 1:
  o Trauma Events

• Section 2:
  o Immediate Disturbance of Consciousness Symptoms after Events

• Section 3:
  o New or Worsening Symptoms after the event

• Section 4:
  o Current Symptoms

• Initial positive screens tracked for CTBIE:
  o After YES to Section 1-4 (Section 4 = Current Symptoms) the patient has the option to accept further evaluation

  o Data Elements:
    − Presence of the national health factor TBI-SECTION IV – YES and TBI-REFERRAL SENT health factor
      OR
    − Presence of the national health factor TBI-SECTION IV – YES health factor and the absence of TBI-REFERRAL DECLINED health factor

VETERANS HEALTH ADMINISTRATION
Comprehensive TBI Evaluation (CTBIE)

- Face-to-face or telehealth evaluation completed by TBI specialist (protocol link below)
  - [http://www.rstce.pitt.edu/VA_TBI/VATBI.html](http://www.rstce.pitt.edu/VA_TBI/VATBI.html)
- History of patient’s present illness/symptoms
- Focused review of body systems
- Targeted physical exam
- Administration of the “Neurobehavioral Symptom Inventory (NSI)”
- Confirming diagnosis of deployment related TBI
- Develop interdisciplinary treatment plan
- Follow up
Poll Question

- In December 2015, VA completed the $1,000,000^{th}$ screen for possible deployment related TBI?
  - True
  - False
VA Screening for Mild Traumatic Brain Injury for OEF/OIF/OND Veterans

• VHA has screened over 1 Million Veterans for possible mild TBI
  o ~20% of Veterans screen positive and are referred for a comprehensive evaluation

• From April 2007 to September 30, 2015:
  o 137,810 completed comprehensive evaluation
  o 82,468 received confirmed diagnosis of mild TBI
  o ~8.4% of the total Veteran population screened receive a TBI diagnosis
VA Polytrauma/TBI System of Care

- 110 Specialized Rehabilitation Sites
  - 5 Polytrauma Rehabilitation Centers (PRC)
    - All inpatient, residential, outpatient and telehealth care
  - 23 Polytrauma Network Sites (PNS)
    - Outpatient TBI and telehealth care, inpatient rehabilitation
  - 87 Polytrauma Support Clinic Teams (PSCT)
    - Outpatient TBI care

- TBI Screening and Evaluation Program
- Polytrauma Transitional Rehabilitation Program
- Emerging Consciousness Program
- Polytrauma Case Management
- Assistive Technology Labs
- Assisted Living TBI Pilot

www.polytrauma.va.gov
VHA Polytrauma/TBI System of Care

Legend
- Polytrauma Rehabilitation Center
- Polytrauma Network Site
- Polytrauma Support Clinic Team
- Polytrauma Point Of Contact
Integration of Comprehensive Rehabilitation Care

- Audiology Program
- Care Management and Military Liaisons
- Amputee Program
- Rehabilitation and Orthopedic Programs
- Brain Injury Program
- Patient & Family Rehabilitation and Orthopedic Programs
- Amputations
- Trauma
- Vision Loss
- Head Injuries
- Pain
- Mental Health
- Pain Management
- PTSD Program
Implementation/Enhancements

Clinical Program Development

• PSC Development
  o PRC Enhancement
  o PNS and PSCT Designation
  o Education, Training, and Oversight roles to establish a System of Care

• Partnership with Primary Care
  o Handoff from screening to evaluation
  o Primary Care models for Post-deployment care
  o Collaboration with Mental Health and Dental
TBI Screening and Evaluation: Implementation/Enhancements

• IT Dates
  - April 2007 – TBI screen
  - October 2007 – VSSC TBI evaluation template
  - June 2012 – IT supported TBI evaluation template (CTBIE)
    - Responses linked to consensus TBI definition
  - October 2013 – Transition to CTBIE Reports
  - February 2014 – Concussion Coach (self care app)
  - August 2015 – Expanded use of TBI Instruments
  - December 2015 - TBI Clinical Decision Support (CDS) Pilot
Comprehensive TBI Evaluation (CTBIE): Compliance with Consensus Definition for mTBI

July 1, 2012

V. Diagnosis

27. Are the history of the injury and the course of clinical symptoms consistent with a diagnosis of mTBI?  
- 0. No

28. In your clinical judgment the current clinical symptoms are consistent with a diagnosis of mTBI?  
- 1. Symptom resolution (patient is currently not reporting current complaints)
- 2. An OEF/OIF deployment-related Traumatic Brain Injury
- 3. Behavioral Health conditions (e.g. PTSD, depression)
- 4. A combination of OEF/OIF deployment-related TBI, behavior health conditions, and other medical factors

Message from webpage

In questions 6, 7, or 8, your responses indicate this patient experienced one of the following:  
1. Period of loss of consciousness;  
2. Loss of memory for events immediately before or after the accident;  
3. Alteration in mental state at the time of the accident (e.g. feeling dazed, disoriented, or confused);

Based on the VA/DoD definition for a mild TBI, these responses would indicate that this patient has suffered a TBI.

If your responses to questions 6, 7, or 8 are not correct, and this patient did not experience either loss of consciousness, post traumatic amnesia or alteration of consciousness related to the injury, please make the appropriate corrections to those questions, and you will then be permitted to indicate the patient did not suffer a TBI during OEF/OIF deployment.

OK
TBI Instruments – Expanded form availability
CTBIE Data-Monitoring Access to CTBIE and Clinical Services

- TBI Screening Report
  - Goal metric of 95% of all eligible OEF/OIF/OND Veterans have TBI screen completed if accessing VHA for care

- Quarterly CTBIE Reports
  - Timeliness to measure Access to a TBI Specialist- target less than 30 days
  - Percentage of +TBI screens completing CTBIE- target >75%

- Sites failing the measure submit a corrective action plan through 10N. Persistent concerns result in a virtual site visit with CMO and PM&R Program Office.

- Previously a Performance Measure, now a Quality Indicator
## Summary of CTBIEs Completed via Approved Template (1V05) (688) Washington, DC

<table>
<thead>
<tr>
<th>CTBIE Quarter</th>
<th>Median Days to Exam</th>
<th>Median Sample Size</th>
<th>Change in Median Days (Previous Qtr)</th>
<th>Requested CTBIEs</th>
<th>Completed CTBIEs</th>
<th>Outstanding CTBIEs</th>
<th>Pct Completed CTBIEs</th>
<th>Change in Pct completed (Previous Qtr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY16 Q1</td>
<td>24</td>
<td>33</td>
<td>6</td>
<td>237</td>
<td>171</td>
<td>66</td>
<td>72.15 %</td>
<td>-5.88 %</td>
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<tr>
<td>FY15 Q4</td>
<td>19</td>
<td>62</td>
<td>4</td>
<td>223</td>
<td>174</td>
<td>49</td>
<td>78.03 %</td>
<td>3.15 %</td>
</tr>
<tr>
<td>FY15 Q3</td>
<td>15</td>
<td>32</td>
<td>-23</td>
<td>203</td>
<td>152</td>
<td>51</td>
<td>74.88 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>FY15 Q2</td>
<td>38</td>
<td>39</td>
<td>11</td>
<td>203</td>
<td>152</td>
<td>51</td>
<td>74.88 %</td>
<td>-0.47 %</td>
</tr>
<tr>
<td>FY15 Q1</td>
<td>27</td>
<td>33</td>
<td>3</td>
<td>219</td>
<td>165</td>
<td>54</td>
<td>75.34 %</td>
<td>0.81 %</td>
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<tr>
<td>FY14 Q4</td>
<td>24</td>
<td>31</td>
<td>-1</td>
<td>212</td>
<td>158</td>
<td>54</td>
<td>74.53 %</td>
<td>-0.47 %</td>
</tr>
<tr>
<td>FY14 Q3</td>
<td>25</td>
<td>33</td>
<td>4</td>
<td>216</td>
<td>162</td>
<td>54</td>
<td>75.00 %</td>
<td>-1.25 %</td>
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<tr>
<td>FY14 Q2</td>
<td>22</td>
<td>40</td>
<td>3</td>
<td>240</td>
<td>183</td>
<td>57</td>
<td>76.25 %</td>
<td>0.16 %</td>
</tr>
</tbody>
</table>

For a listing of outstanding CTBIEs, click here.....

For a listing of all CTBIEs, click here.....

Outstanding CTBIEs and overall results accessible through main results page.
### TBI Care Plan And M2PI Summary Report

**VHA**

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Fiscal Qtr</th>
<th>Month</th>
<th>Total Care Plans / M2PI</th>
<th>Distinct Patients</th>
<th>Care Plans</th>
<th>M2PI</th>
<th>TBI Evals</th>
<th>Positive TBI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FY 16</strong></td>
<td></td>
<td></td>
<td>3,958</td>
<td>3,051</td>
<td>2,399</td>
<td>1,559</td>
<td>2,068</td>
<td>1,772</td>
</tr>
<tr>
<td><strong>FY 15</strong></td>
<td></td>
<td></td>
<td>15,208</td>
<td>9,500</td>
<td>9,543</td>
<td>5,665</td>
<td>6,349</td>
<td>5,459</td>
</tr>
<tr>
<td><strong>FY 15 Q4</strong></td>
<td></td>
<td></td>
<td>3,772</td>
<td>3,005</td>
<td>2,365</td>
<td>1,407</td>
<td>1,978</td>
<td>1,708</td>
</tr>
<tr>
<td></td>
<td></td>
<td>September</td>
<td>1,131</td>
<td>989</td>
<td>684</td>
<td>447</td>
<td>660</td>
<td>562</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August</td>
<td>1,260</td>
<td>1,098</td>
<td>789</td>
<td>471</td>
<td>701</td>
<td>621</td>
</tr>
<tr>
<td></td>
<td></td>
<td>July</td>
<td>1,381</td>
<td>1,174</td>
<td>892</td>
<td>489</td>
<td>750</td>
<td>639</td>
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<tr>
<td><strong>FY 15 Q3</strong></td>
<td></td>
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<td>3,838</td>
<td>3,007</td>
<td>2,345</td>
<td>1,493</td>
<td>1,963</td>
<td>1,710</td>
</tr>
<tr>
<td><strong>FY 15 Q2</strong></td>
<td></td>
<td></td>
<td>3,906</td>
<td>3,068</td>
<td>2,469</td>
<td>1,437</td>
<td>2,001</td>
<td>1,723</td>
</tr>
<tr>
<td><strong>FY 15 Q1</strong></td>
<td></td>
<td></td>
<td>3,692</td>
<td>2,870</td>
<td>2,364</td>
<td>1,328</td>
<td>1,931</td>
<td>1,678</td>
</tr>
</tbody>
</table>

*https://securereports2.vssc.med.va.gov/ReportServer/Pages/ReportViewer.aspx?fOQP%2fTBI%2fCarePlanSummary&rs%3aCommand=Render&rc%3aToolBar=True*
TBI Clinical Decision Support - Where are we today?

Clinical Decision Support

- Strengthen Clinical Assessment
- Workflow Improvement & Data Capture
- Backend Integration
- Outcomes Measurement
- Process Improvement
- Develop Decision Support
- Improve Outcomes
- Operational Dissemination
- Operational Leverage
TBI Screening and Evaluation: Context

• TBI screen implemented in 2007
  o Timeline for implementation precluded research on the TBI screen before implementation or an implementation trial
  o Unlike the mental health screens, lack of evidence on psychometrics prior to implementation
    o GAO noted this gap in 2008 (GAO-08-276)

• Research to support and improve VHA’s TBI screening/evaluation program became PT/BRI QUERI’s highest priority
  o Research on psychometric properties of TBI screen
  o Evaluation of implementation
Research Activities Utilizing CTBIE Data

• Sensitivity/specificity of screen
  o Sensitivity 85-94%
  o Specificity 13-59%

• Gender differences
  o Women less likely than Men to screen positive for possible TBI.
  o Women report higher degree of symptom interference on CTBIE compared to men.

• Cost/Utilization
  o QUERI Utilization Reports

• TBI Screening Fact Sheet
<table>
<thead>
<tr>
<th>Symptom Severity</th>
<th>Moderate to Very Severe</th>
<th>Mild</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms in last 30 days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritability, easily annoyed</td>
<td>45,389</td>
<td>6,282</td>
<td>2,299</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>44,920</td>
<td>5,233</td>
<td>4,917</td>
</tr>
<tr>
<td>Forgetfulness</td>
<td>42,441</td>
<td>8,071</td>
<td>4,558</td>
</tr>
<tr>
<td>Anxious or tense</td>
<td>42,284</td>
<td>7,502</td>
<td>5,284</td>
</tr>
<tr>
<td>Headaches</td>
<td>39,762</td>
<td>9,914</td>
<td>5,394</td>
</tr>
<tr>
<td>Poor concentration</td>
<td>38,851</td>
<td>9,472</td>
<td>6,747</td>
</tr>
<tr>
<td>Poor frustration tolerance, easily overwhelmed</td>
<td>39,251</td>
<td>8,737</td>
<td>7,082</td>
</tr>
<tr>
<td>Fatigue</td>
<td>35,952</td>
<td>10,181</td>
<td>8,937</td>
</tr>
<tr>
<td>Hearing difficulty</td>
<td>33,522</td>
<td>11,537</td>
<td>10,011</td>
</tr>
<tr>
<td>Depressed or sad</td>
<td>33,223</td>
<td>10,750</td>
<td>11,097</td>
</tr>
<tr>
<td>Slowed thinking, difficulty organizing, difficulty finishing things</td>
<td>32,289</td>
<td>11,381</td>
<td>11,400</td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>30,034</td>
<td>10,983</td>
<td>14,053</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>27,867</td>
<td>12,298</td>
<td>14,905</td>
</tr>
<tr>
<td>Difficulty making decisions</td>
<td>27,877</td>
<td>11,615</td>
<td>15,578</td>
</tr>
<tr>
<td>Numbness of tingling in parts of body</td>
<td>25,921</td>
<td>11,922</td>
<td>17,227</td>
</tr>
</tbody>
</table>

TBI Utilization Reports:
http://www.polytrauma.va.gov/TBIReports/index.as

• Led by Brent Taylor, PhD, in close collaboration with PM&R
  o PM&R part of research team

• Leverage VHA administrative data to address the following questions:
  o What is the prevalence of clinician-diagnosed TBI in Afghanistan and Iraq war Veterans who used VHA?
  o Among those with clinician-diagnosed TBI, what is the rate of co-occurring mental health and pain-related conditions?
  o What is the cost of providing VHA care to Veterans with TBI?
Prevalence and Costs of Co-occurring Traumatic Brain Injury With and Without Psychiatric Disturbance and Pain Among Afghanistan and Iraq War Veteran VA Users

Brent C. Taylor, PhD, MPH,*†‡ Emily M. Hagel, MS,* Kathleen F. Carlson, PhD,§||
David X. Cifu, MD,¶# Andrea Cutting, MA,* Douglas E. Bidelspach, MPT,**
and Nina A. Sayer, PhD*† ††

Medical Care. 2012; 50: 342-346
<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>TBI (n=22,053)</th>
<th>No TBI (n=305,335)</th>
<th>Total (n=327,388)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health dx</td>
<td>89%</td>
<td>39%</td>
<td>42%</td>
</tr>
<tr>
<td>PTSD</td>
<td>73%</td>
<td>24%</td>
<td>28%</td>
</tr>
<tr>
<td>Depression</td>
<td>45%</td>
<td>20%</td>
<td>21%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>22%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>20%</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>Head/Back/Neck Pain</td>
<td>70%</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>Headache</td>
<td>47%</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Back Pain</td>
<td>45%</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td>Neck Pain</td>
<td>15%</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>PTSD and Pain</td>
<td>54%</td>
<td>11%</td>
<td>14%</td>
</tr>
</tbody>
</table>
### Average VHA Medical Costs for Afghanistan and Iraq War Veterans by Diagnosis Group (FY2009)

<table>
<thead>
<tr>
<th>ICD 9 Diagnoses</th>
<th>Proportion of OEF/OIF Veterans Seen in VHA 2009 (%)</th>
<th>2009 VHA Median Costs (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No TBI, pain, or PTSD</td>
<td>52.7</td>
<td>$978 ($439–$2074)</td>
</tr>
<tr>
<td>Pain</td>
<td>17.9</td>
<td>$1974 ($953–$3890)</td>
</tr>
<tr>
<td>PTSD</td>
<td>12.2</td>
<td>$2763 ($1345–$5426)</td>
</tr>
<tr>
<td>Pain + PTSD</td>
<td>10.5</td>
<td>$4978 ($2655–$9283)</td>
</tr>
<tr>
<td>TBI</td>
<td>0.7</td>
<td>$2391 ($1112–$4770)</td>
</tr>
<tr>
<td>TBI + pain</td>
<td>1.1</td>
<td>$3931 ($2139–$6899)</td>
</tr>
<tr>
<td>TBI + PTSD</td>
<td>1.3</td>
<td>$5053 ($2770–$9075)</td>
</tr>
<tr>
<td>TBI, pain, and PTSD</td>
<td>3.6</td>
<td>$7974 ($4559–$14,332)</td>
</tr>
</tbody>
</table>
Three Years of Utilization Reports Pooled Together

JRRD
Volume 50, Number 9, 2013
Pages 1169-1176

Traumatic brain injury, posttraumatic stress disorder, and pain diagnoses in OIF/OEF/OND Veterans

David X. Cifu, MD,1–3* Brent C. Taylor, PhD;4–5 William F. Carne, PhD;2–3,6 Douglas Bidelspach, MPT;1,7 Nina A. Sayer, PhD;4–5,8 Joel Scholten, MD;1,9 Emily Hagel Campbell, MS4
1Physical Medicine and Rehabilitation Program Office, Department of Veterans Affairs (VA), Washington, DC; 2Department of Physical Medicine and Rehabilitation, Virginia Commonwealth University, Richmond, VA; 3Hunter Holmes McGuire VA Medical Center (VAMC), Richmond, VA; 4Center for Chronic Disease Outcomes Research, Minneapolis VA Health Care System, Minneapolis, MN; 5Department of Medicine, University of Minnesota, Minneapolis, MN; 6Defense and Veterans Brain Injury Center, Richmond, VA; 7Rehabilitation and Prosthetics Services, Lebanon VAMC, Lebanon, PA; 8Department of Psychiatry, University of Minnesota, Minneapolis, MN; 9Department of Physical Medicine and Rehabilitation, Washington VAMC, Washington, DC; and Department of Physical Medicine and Rehabilitation, Georgetown University Medical Center, Washington, DC
Proportion of Iraq and Afghanistan War Veterans with Diagnoses of TBI, Pain of the Head, Neck or Back, and/or PTSD Over Time

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>TBI</td>
<td>6.70%</td>
<td>6.80%</td>
<td>6.50%</td>
<td>9.60%</td>
</tr>
<tr>
<td>Pain</td>
<td>33.60%</td>
<td>34.10%</td>
<td>33.70%</td>
<td>40.20%</td>
</tr>
<tr>
<td>PTSD</td>
<td>27.60%</td>
<td>27.90%</td>
<td>28.20%</td>
<td>29.30%</td>
</tr>
</tbody>
</table>

N=327,388  N=398,453  N=471,383  N=613,391
Polling Question

- The best way to differentiate etiology of symptoms in an individual with a history of mTBI and PTSD is:
  - Brain MRI
  - Brain SPECT scan
  - DTI
  - Neuropsychological Testing
  - Clinical Interview
Treatment following TBI Diagnosis

- What is “standard of care” treatment for mild TBI?

- Clinical Practice Guidelines (CPG)
  - Developed from best available evidence and consensus opinion for treatment of symptoms following mild TBI
  - Published in 2009, updated CPGs will be published in 2016
The Individualized Rehabilitation and Community Reintegration (IRCR) Care Plan

  o Required for all Veterans and Service Members receiving inpatient or outpatient rehabilitation for TBI at a VA facility.
    o Encourages collaboration amongst Veterans, their families, and providers from diverse disciplines
  o Plan must be communicated to the Veteran in writing, containing:
    o Comprehensive Evaluation
    o Goals focused on physical, cognitive, and vocational functioning to ultimately facilitate community reintegration
    o Details means to access care
    o Type, frequency, duration, and location of all rehabilitative treatments
    o Name of case manager
    o Dates when plan will be reviewed

• VHA Handbook 1172.01 Polytrauma System of Care
IRCR Algorithm

- Developed by the Physical Medicine & Rehabilitation Program Office to assist clinicians in identifying Veterans in need of an IRCR

Also required for every patient discharged from Polytrauma Rehabilitation Centers (PRC) or Polytrauma Transitional Rehabilitation Program (PTRP).
Compliance with the ICRR Algorithm at a single Polytrauma Network Site

- Retrospective Chart Review of 546 Veterans with a TBI diagnosis in 2013 seen at the DC VAMC PNS.
  - Work supported by Polytrauma/Blast Related Injury QUERI QLP 56-012

![Diagram showing the distribution of compliant and non-compliant cases.]

- Compliant & Do Not Require ICRR: 56%
- Compliant & Require ICRR: 28%
- Non-Compliant & Require ICRR: 14%
- Non-Compliant & Do Not Require ICRR: 2%
Ensuring Quality

- Mayo-Portland Participation Index (M2PI) and Interdisciplinary Rehabilitation Care Plan (IRCR)
  - Monitor IDT planning and outcomes for outpatients in Polytrauma clinics
    - 9,500 unique Veterans with M2PI or IRCR in FY15
      - 9,543 total IRCR plans
      - 5,665 total M2PI entries
Opportunities for Future Investigation

- Further study to define “standard of care” treatment
- Quantify rehab “dose”
- Monitor Clinical Practice Guideline (CPG) adherence and link to outcomes
- Care models to maximize Veteran engagement
- Future of TBI Screen
  - Transition to a Symptom screen vs. De-implementation study
- Maximize efficiency of Interdisciplinary teams
- Manage TBI in a chronic Disease Model
- Care Coordination
  - Patient Aligned Care Team, Mental Health, Care Management


**Websites:**

Clinical Practice Guideline for management of concussion/mild TBI available at [http://www.healthquality.va.gov/guidelines/Rehab/mtbi/concussion_mtbi_full_1_0.pdf](http://www.healthquality.va.gov/guidelines/Rehab/mtbi/concussion_mtbi_full_1_0.pdf)

Family Care Map available at [http://www.polytrauma.va.gov/FCM/](http://www.polytrauma.va.gov/FCM/)


Contact Information

• Joel Scholten, MD
  Joel.Scholten@va.gov

• Douglas Bidelspach, MPT
  Douglas.Bidelspach@va.gov
Guidance for completion of the CTBIE by Community Providers

1. **What providers can complete the Comprehensive TBI Evaluations (CTBIE)?**
   Given the expertise required to establish a diagnosis of TBI and implement appropriate treatment the community provider should be a physiatrist, neurologist, or neuropsychiatrist with experience in interdisciplinary TBI care.

2. **What information should be communicated to the community provider?**
   It is important to communicate the intent of the process with the community provider, focusing on the Comprehensive TBI Evaluation (CTBIE) specific to OEF/OIF/OND deployment related injuries, and the significance of the questions on loss of consciousness, alteration of consciousness, and post traumatic amnesia at the time of injury for the historical diagnosis of deployment related TBI.

3. **What is the primary method that the evaluator should use for deriving a TBI diagnosis?**
   The diagnosis of TBI involves documenting a historical event during deployment and its immediate sequelae. The TBI diagnosis is based entirely on history – either a credible history from the patient or medical record documentation that:
   
   i. There was an event that had the potential to cause a significant force to the head
   ii. This force to the head was immediately followed by:
      a. Any period of loss of or a decreased level of consciousness
      b. Any loss of memory for events immediately before or after the injury (post-traumatic amnesia)
      c. Alteration in mental state at the time of the injury (mental confusion, disorientation, slowed thinking, etc.)
      d. Neurological deficits (e.g., neurological signs such as weakness, loss of balance, sensory loss, aphasia, etc.) that may or may not be transient
      e. Intracranial lesion on neuroimaging

Not all individuals exposed to an external force will sustain a TBI, but any person who has a history of such an event with immediate manifestation of any of the above signs or symptoms can be said to have had a TBI.

If the patient cannot reliably or believably provide this information, ask about what they were told by others who were at the scene. Were they lying on the ground and non-responsive (TBI)? Were they saying things that did not make sense (TBI)? Immediately afterward, while still at the scene, were they able to walk, talk, and function normally (unlikely to have had a TBI)?
4. **How should the Comprehensive TBI Evaluation (CTBIE) completed by a community provider be documented?**

The evaluations should be documented using the word version of the CTBIE, which is returned and scanned into CPRS. The local VA team can then access the CTBIE template in TBI Instruments, and check the first box indicating the evaluation was completed by a ‘fee’ provider, specify if the diagnosis was confirmed or ruled out, and outline the treatment plan in the template. If the MD does not enter the CTBIE note into TBI Instruments, the team member completing the entry (transposing the results of the three available sections from the CTBIE into the online template), should identify the MD of the team as a cosigner on the note, and ensure the individualized treatment plan is developed and carried out, as indicated.

5. **When is neuropsychological testing indicated?**

Neuropsychological testing cannot establish a diagnosis of TBI and is not indicated in all cases. It is only indicated when it will help document potential residual effects, assist in treatment planning, or help evaluate treatment response. However, because of rapid improvement expected following mild TBI, neuropsychological testing is not recommended during the first 30 days post injury, except in cases of acute concussion management when it may be used to monitor the recovery process and assist with determining return to work/school. Providers should consider referring patients for neuropsychological testing who have persistent cognitive complaints after treatment and if alternative explanation for these cognitive complaints, such as PTSD, depression and insomnia, have been ruled out. In these cases, neuropsychological testing may be indicated and useful in determining if there are objective findings to support the subjective symptom complaints; and if so, the nature, severity, and likely etiology of those objective cognitive problems.

6. **Are there training resources the community provider should access?**

Consistent with VA provider training, a community provider completing the Comprehensive TBI Evaluation should access the VHI training or the VA/DoD Clinical Practice Guideline for Concussion/mild Traumatic Brain Injury, which can be accessed through the links below.

**VA/DoD Clinical Practice Guideline: Management of Concussion/Mild Traumatic Brain Injury**

http://www.healthquality.va.gov/guidelines/Rehab/mtbi/

**Veterans Health Initiative – Traumatic Brain Injury**