The Polytrauma Experience: Clinical Practice Guidelines for Cognitive-Communication Rehabilitation

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I. IEDs are the Weapons of Choice

- Increased incidence of multiple injuries
- IED's accounted for 42-64% of all evacuated Army casualties in OIF
- 77% of all casualties are from explosions

II. Multi-Dimensional Injuries Polytrauma - Combination

- Overpressure/ barotrauma
- Fragmentation injuries
- Blunt trauma and crush injuries
- Thermal/inhalation

III. Polytrauma Defined

Polytrauma is defined as two or more injuries to physical regions or organ systems, one of which may be life threatening, resulting in physical, cognitive, psychological, or psychosocial impairments and functional disability. TBI frequently occurs in polytrauma in combination with other disabling conditions such as amputation, auditory and visual impairments, SCI, PTSD, and other mental health conditions. Injury to the brain is the impairment that primarily guides the course of the rehabilitation in patients admitted to the PRC's.

VHA Handbook 1172.1

IV. Brain Injuries and the Mechanisms of Blasts

- Concussion/Closed (Primary)
- Penetration (Secondary)
- Blunt/Crush (Tertiary)
• Burns/Asphyxiation (Quarternary)
• Multi-dimensional (Combinations of above)

V. **Frequency of Blast Brain Injuries in OIF/OEF**

• WRAMC
  - 31% of casualties had brain injuries
  - 68% from a blast

• VA Polytrauma Rehabilitation Centers (May 2003 - October 2006)
  - 85.5% had brain injury
  - 50% injured in a blast

VI. **Paradigm of Care in Polytrauma Rehabilitation**

• Brain injury drives the care
• Simultaneous treatment of multiple injuries
• Higher level of acuity
• Integrate therapies to meet patient needs
• Coordinated team effort with an expanded team of consultants

VII. **Whose Business is Cognitive Rehabilitation?**

• No academic program grants this type of degree
• Practiced by SLP, OT, and psychology
• Narrower SLP model of practice: Katherine Yorkston and Carl Coelho
• Broader SLP model of practice: McKay Sohlberg and Mark Ylvisaker

VIII. **Cognitive-Communication Rehabilitation and SLP**

• *ASHA* (2005) – SLPs play a primary role in the evaluation and management of individuals with cognitive-communication disorders (e.g. training discrete cognitive processes). *Supplement 25*
• Codes: Eval: 92506  
  Treatment: 92507

• Codes: 96116 and 97532 restricted

IX. **Third-Party Payers and Cognitive Rehabilitation**

Cognitive rehabilitation is “unproven” and “experimental” procedure  
*Blues, Technical Report 2002*

X. **Cognitive Rehabilitation Evidence-Based Practice**

• Meta-reviews by the American Congress of Rehabilitation Medicine:  

• 37 of 47 Class I studies (78.7%) reveal differential benefit for cognitive rehabilitation

XI. **Attention**

**Practice Standard**

• 17/18 studies support effectiveness

• 5 Class I studies with 137 subjects

XII. **Memory**

**Practice Standard**

• 55 peer reviewed studies

• 7 Class I studies with 132 subjects

XIII. **Executive Function**

**Practice Guideline**

• 24 Class I, II, and III studies

• Four Class I studies with 119 subjects
XIV. **Social Communication or Pragmatics**

**Practice Standard**

- 19 peer reviewed studies
- One Class I with 16 subjects

XV. **Cognitive-Communication Interventions in the VA**

- SLPs at the VA PRCs are actively engaged in providing cognitive-communication interventions
- DVBIC rehabilitation trial
- Full range of interventions
- Provide for changing needs across life span

XVI. **Cognitive-communication Interventions - ASHA NOMS**

- Patients with TBI improved: attention (82%), memory (81%), pragmatics (83%), and problem solving (80%)
- Patients with RH CVA improved: attention (80%), memory (74%), pragmatics (77%), and problem solving (73%)

XVII. **In Summary**

- Cognitive-communication interventions have great potential to enhance polytrauma rehabilitation efforts of the new generation of combat veterans
- Cognitive-communication rehabilitation solutions are challenging due to the diversity of needs and skills that require compensation

**Selected Readings**


44. Wilson BA, Emslie HC, Quirk K, Evans JJ. Reducing everyday memory and planning problems by means of a paging system: a randomized controlled cross-over study. *J Neurol Neurosurg Psychiatry* 2001;70:477-82.