

# Cognitive Rehabilitation in Mild Traumatic Brain Injury: Applications in Military Service Members and Veterans



June 9, 2016  
1:00 – 2:30 p.m. (ET)

## Presenters:

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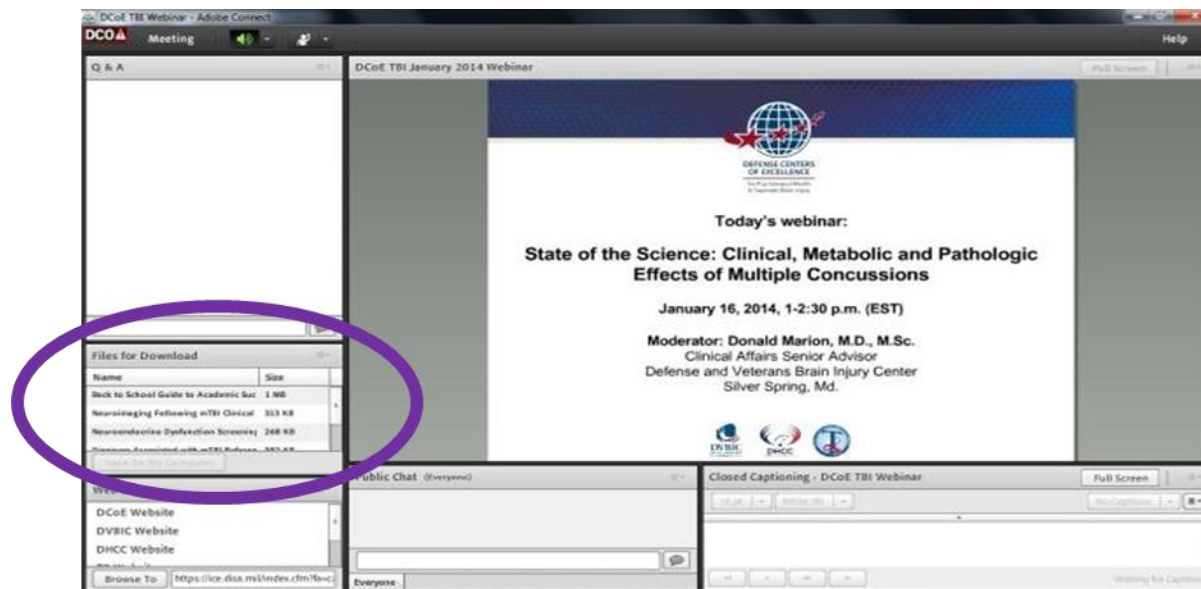


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- Live closed captioning is available through Federal Relay Conference Captioning (see the “Closed Captioning” box)
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  - Dial: CONUS **888-455-0936**
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- Question-and-answer (Q&A) session
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- All who wish to obtain continuing education (CE) credit or certificate of attendance, and who meet eligibility requirements, must register by **3 p.m. (ET) June 9, 2016** to qualify for the receipt of credit.
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  - Currently, only those contractors with scope of work or with commensurate contract language are permitted in this training.

# Continuing Education Accreditation

(continued)



- This continuing education activity is provided through collaboration between DCoE and Professional Education Services Group (PESG).
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  - 1.5 AMA PRA Category 1 credits
  - 1.5 ACCME Non Physician CME credits
  - 1.5 ANCC Nursing contact hours
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  - 0.15 ASHA Intermediate level, Professional area
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# Continuing Education Accreditation

## (continued 2)



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## (continued 3)



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### **Physical Therapists**

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### **Psychologists**

This Conference is approved for up to 1.5 hours of continuing education. APA Division 22 (Rehabilitation Psychology) is approved by the American Psychological Association to sponsor continuing education for psychologists. APA Division 22 maintains responsibility for this program and its content.

### **Rehabilitation Counselors**

The Commission on Rehabilitation Counselor Certification (CRCC) has pre-approved this activity for 1.5 clock hours of continuing education credit.

### **Speech-Language Professionals**

This activity is approved for up to 0.15 ASHA CEUs (Intermediate level, Professional area).

# Continuing Education Accreditation

## (continued 4)



### **Case Managers**

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- Participants may chat with one another during the webinar using the chat pod.
- The chat function will remain open 10 minutes after the conclusion of the webinar.

# Webinar Overview



Service members and veterans (SM/V) that have sustained a mild traumatic brain injury (mTBI) may experience cognitive symptoms that interfere with their ability to participate in desired roles and activities. These symptoms may be related to a history of mTBI and to deployment-related complaints such as chronic pain, headaches, posttraumatic stress disorder (PTSD), depression, anxiety, sleep difficulties, substance use disorders, and life stressors following return from deployment. It is critical for health care providers to correctly identify cognitive problems in the context of managing concurrent symptoms to successfully facilitate the recovery process.

This presentation will integrate available resources and expertise to advance best practices in the delivery of cognitive rehabilitation to SM/V with a history of mTBI and deployment-related symptoms (e.g., PTSD, anxiety, chronic pain).

# Webinar Overview (continued)



Through case examples and interactive discussion the speakers will address existing evidence and working group consensus which resulted in a collection of general principles of cognitive rehabilitation, strategies for assessment and treatment, and clinical tools to assist patients self-manage their cognitive challenges.

At the conclusion of this webinar, participants will be able to:

- Describe the scope and process of cognitive rehabilitation for SM/V with mTBI.
- Identify and apply guiding principles of therapy for SM/V with mTBI.
- Articulate available resources for providers of cognitive rehabilitation that are appropriate for SM/V with mTBI.

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# Disclosure – Dr. Cooper



- Dr. Cooper has no financial relationship to disclose.
- The views expressed in this presentation are those of the author and do not necessarily reflect the official policy or position of the Department of Defense, nor the U.S. Government.
- The description of programs in this presentation is for descriptive purposes only and not intended to promote any individual program.

# Polling Question 1



My primary discipline is:

- a. Primary care provider
- b. Rehabilitation provider
- c. Behavioral health provider
- d. Nurse
- e. Social worker/case manager
- f. Other

# Cognitive Rehabilitation Resources to Enhance the Process of Therapy



- Process vs. content
- Enhances the process of planning and implementing cognitive rehabilitation interventions
  - Developing an alliance with SM/V
  - Creating goals
  - “Setting the hook”
  - Making changes and transitioning to self-management



# Cognitive Rehabilitation Best Practice Resources



- Study of Cognitive Rehabilitation Effectiveness (SCORE) Study Manual (DVBIC, 2015)
- Mild Traumatic Brain Injury Rehabilitation Toolkit (Weightman, Radomski, Mashima, & Roth, 2014)
- Cognitive Symptom Management and Rehabilitation Therapy (CogSMART) for Veterans with TBI: Pilot Randomized Controlled Trial (Twamley, Jak, Delis, Bondi, & Lohr, 2014)
- Social Cognition Rehabilitation for Veterans with TBI and PTSD: A Treatment Workbook (McCarron, Dasgupta, Campbell, & Adams, 2014)
- Cognitive-communication Rehabilitation for Combat-related Mild TBI (Cornis-Pop et al., 2012)

# Effective Interventions for Post-Deployment SM/V



- Goal attainment scaling
- Motivational interviewing
- Dynamic coaching
- Personalized education
- Training of assistive technology
- Direct training of cognitive processes
- Environmental management

# Critical Factors in Treatment



- Military context and culture
  - Critical in establishing therapeutic alliance
- Symptom attribution
  - Psychological comorbidities
  - Post-deployment stress
  - Sleep
  - Pain
  - mTBI

# Guiding Principles of Cognitive Rehabilitation



## Six Guiding Principles of Cognitive Rehabilitation with SM/V with mTBI

# Guiding Principle 1: Recruit Resilience



- Resilience
  - “Bouncing back” from difficult experiences
  - Adapting to overcome adversity
- Serves as protective factor and promotes positive outcomes
- Cultural/spiritual beliefs and practices may serve to rebuild sense of purpose and meaning.

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# Guiding Principle 1: Recruit Resilience (continued)



- “What would you consider to be your source of strength when managing situations in which you feel overwhelmed?”



Recruit internal and external coping resources.

Incorporate personal core values in the therapeutic process.

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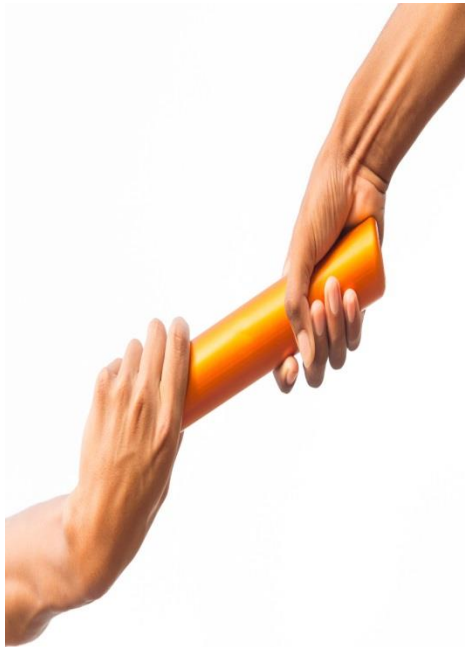
# Guiding Principle 2: Cultivate Therapeutic Alliance



- Strong SM/V-clinician partnership provides the foundation for the therapeutic process.
- Built upon trust, transparency and mutual respect
- Goal of partnership is to transfer responsibility for goal achievement to the SM/V to promote self-efficacy.

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# Guiding Principle 2: Cultivate Therapeutic Alliance (continued)



- “What can we do to help you accomplish your goal?”
- Use active listening techniques.
- Resist impulse to be the expert.
- Allow SM/V’s goals to drive the therapeutic process.

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# Guiding Principle 3: Acknowledge Multifactorial Complexities



- Persistent cognitive symptoms are often reported with multiple conditions.
- Difficult to determine how each condition contributes to ongoing difficulties
- Focus on improving life participation regardless of potential etiologic correlates.

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# Guiding Principle 3: Acknowledge Multifactorial Complexities

(continued)



- “What do you think may contribute to the memory problems you’re having?”
- Provide personalized education on multiple factors that may contribute to cognitive/functional difficulties.
- Participate in interdisciplinary patient-centered treatment.

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# Guiding Principle 4: Build A Team



- Interventions may be provided by team of specialists in light of potential multiple comorbidities.
- Interdisciplinary team reduces the risk of overlooking complicating factors that may influence treatment outcomes.
- Team membership is based on the individual needs of the SM/V.

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# Guiding Principle 4: Build A Team (continued)



- “Would it be helpful to talk to someone who can explain the side effects of your medications?”
- Assist SM/V in scheduling appointment with primary care provider to discuss sleep disturbance that interferes with memory.
- When appropriate, request permission from SM/V to include family members in therapy.

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# Guiding Principle 5: Focus on Function



- Overarching goal is to help SM/V reduce limitation and improve participation in daily activities.
- Understand SM/V's strengths, impairments, and comorbid factors in the context of performing daily life tasks and roles.

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# Guiding Principle 5: Focus on Function (continued)



- “Tell me about how your memory problems affect daily activities that matter to you.”
- If SM/V has a specific cognitive complaint, adapt the clinical focus to the daily life implications of that complaint.
- Highlight effectiveness of compensatory strategies in resuming valued activities.

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# Guiding Principle 6: Promote Realistic Expectations for Recovery



- Emphasize expectancy of recovery.
- Critical for developing self-efficacy and self-determination
- Translates into engagement in therapy and enhances outcomes



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# Guiding Principle 6: Promote Realistic Expectations for Recovery (continued)



- “Would it be helpful to hear a few stories of other SM/Vs who had similar frustrations with memory and made very good recovery?”
- Provide education highlighting abilities and strengths while validating concerns.
- Use risk communication techniques.
- Share session data that show improvements and ask the SM/V to comment on impressions.

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# How Does Cognitive Rehabilitation Work?

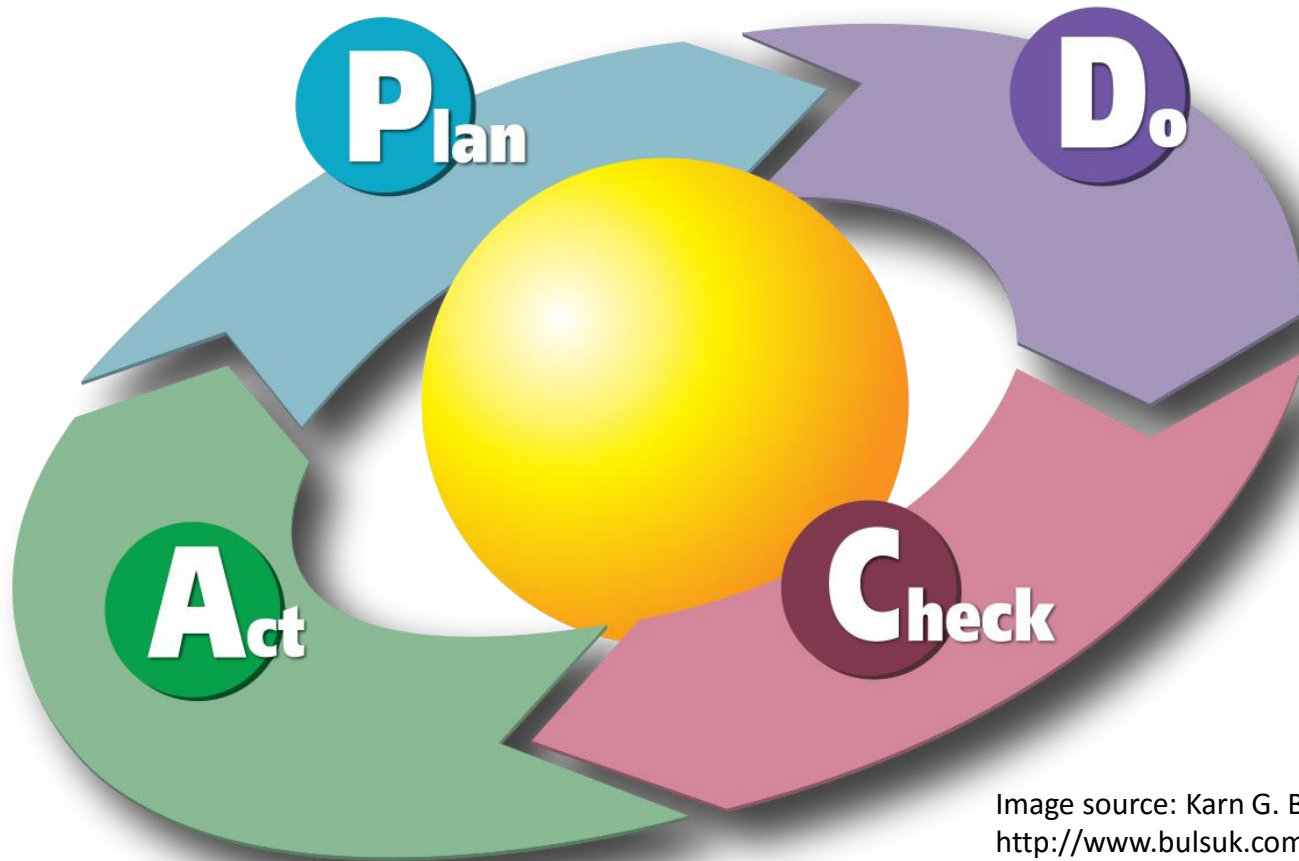


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# The Cognitive Rehabilitation Process



- Steps
  - Get started.
  - Set the stage for functional change.
  - Affect functional change.
  - Transition to self-management.
  
- Within steps
  - Guiding Principles
  - Actions
  - Tools

# Case Study



JD, a 28-year-old male active-duty staff sergeant, was referred for cognitive rehabilitation because of memory complaints. He was exposed to improvised explosive device blasts during his first two deployments. He recalled being dazed without loss of consciousness after both exposures. Guidance was followed for rest, educational intervention and progressive return to activity following his second acute concussion/mTBI.

JD has been receiving mental health services for PTSD after returning from his third deployment a year ago.

JD is married and has two young sons.

# Step 1: Get Started



- Guiding Principles
  - Establish therapeutic alliance.
  - Acknowledge multifactorial complexities.
- Actions
  - Gather information.
  - Engage and motivate.
- Tools
  - Motivational interviewing
  - Assessment instruments

# Motivational Interviewing



- A method of communication designed to move individuals in the direction of change.
- Patient centered
  - Clinician is collaborator vs. expert.
  - Elicit patients' motivation to change vs. telling them why they should change.
  - Patients' autonomy to decide to change vs. telling them how to change.

# Motivational Interviewing Strategies



- OARS strategies
  - **O**pen ended questions
  - **A**ffirmations
  - **R**eflections
  - **S**ummaries

# Motivational Interviewing Strategies

(continued)



*C: I understand that you would like to work on taking your medications regularly. (A)*

*JD: I don't take 'em.*

*C: You're not taking your meds. (R)*

*JD: I forget sometimes.*

*C: What are your medications for? (O)*

*JD: I don't know. All I know is that whenever I say something, they give me another pill.*

*C: So, you're not sure what the medications are for. (S)*



# Gather Information



- Functional deficits
- Symptom triggers and symptom promoters
- Situational variables, supporters, barriers
- Comorbidities

# Gather Information – Case Study



- Neuropsychological report indicates no performance deficits.
- PTSD treatment results show stabilized very mild symptoms with good coping strategies.
- Patient-centered interview
  - “What would you like to be doing that you’re not doing right now?”
  - “Remember to take my medications.”

# Statements from Patient-centered Interviews Describing Memory Failures



- “I try to remember, but sometimes I just forget.”
- “I can never find my keys when I leave the house.”
- “I’m just too busy; I have so much to do.”
- “I don’t like to take a lot of meds.”
- “My wife tells me that I always lose my stuff.”
- “I’m too tired to remember.”

# Polling Question #2



What are potential factors contributing to memory complaints?

- a. Memory lapse
- b. Organizational challenges
- c. Time management
- d. Intentional omission or ambivalence
- e. Normal forgetfulness
- f. Sleep problems
- g. All of the above

# Acknowledge the Complex Etiology of the Post-concussion Symptoms



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# Engage and Motivate



- Structure a “quick win” through a “low-hanging fruit.”
- Validate the patient’s symptoms.
- Identify and emphasize the patient’s strengths.
- Provide personalized education about symptoms and the process of rehabilitation.

# Engage and Motivate – Case Study



C: *Have you ever used a written calendar or your phone to keep track of your medications?*

JD: Neither. I have a smartphone but don't use it for my medications.

C: *If I show you how to use the calendar function on your phone, do you think it might help you to keep track of your medications?*

JD: We can try...

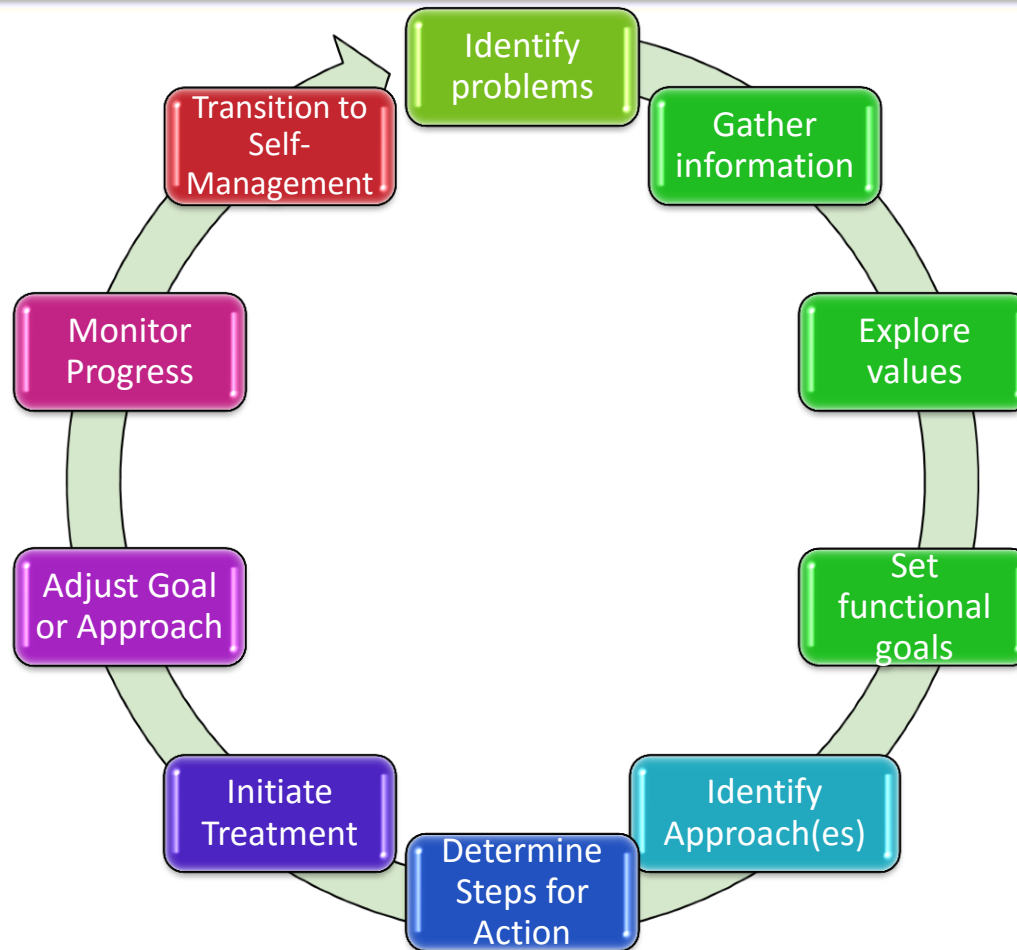
# Step 2: Set the Stage for Functional Changes



- Guiding Principles
  - Recruit resilience.
  - Focus on function.
  - Promote realistic expectations of recovery.
- Actions
  - Set goals.
  - Select treatment approach(es).
  - Develop a measurement plan.
- Tools
  - Dynamic coaching



# Dynamic Coaching



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# Set Goals



- Collaborative Goal
  - The functional activity and its context are identified through open-ended questions by the clinician and validated by the patient in response to the clinician's summary of the information.
- Functional Goal
  - Identifies the positive change that will lead to improvement on relevant functional tasks
- SMART Goals
  - **Specific, Measurable, Achievable, Realistic, Time-based**
    - "I will spend \$47-\$54 weekly on entertainment."

# Polling Question #3



Which of the following is an example of a SMART goal?

- a. I will increase the amount of time I can work on my homework without needing to take a break.
- b. I will spend \$47-\$54 weekly on entertainment and pay off \$20 of the outstanding balance on the credit card.
- c. I will meet deadlines for assigned work tasks 80% of time for two weeks in a row using a nine-step problem solving process.
- d. I will improve my attention using strategies developed in therapy to achieve 80% accuracy on quizzes.

# Goal Attainment Scaling



- Breaks down the overall goal of an intervention into specific goals using a five-point scale from -2 (much less than expected) to +2 (much better than expected)
- Advantage: Quantifiably-defined levels of *expected* achievement established *prior* to the commencement of the intervention and personally relevant to the patient
- Limitation: Identifying a number of individual goals and defining five levels of outcome for each goal can be time consuming.

# JD's Goal Attainment Scaling



+2	I will remember to take my medications at the correct time 7/7 days each week using a pill-box organizer and an app on my smartphone to remind me.
+1	I will remember to take my medications at the correct time 6/7 days each week using a pill-box organizer and an app on my smartphone to remind me.
0	I will remember to take my medications at the correct time 5/7 days each week using a pill-box organizer and an app on my smartphone to remind me.
-1	I will remember to take my medications at the correct time 4/7 days each week using a pill-box organizer and an app on my smartphone to remind me.
-2	I will remember to take my medications at the correct time 3/7 days each week using a pill-box organizer and an app on my smartphone to remind me.
Comment	<p>Timeline: two weeks</p> <p>JD will keep his paper log to chart his compliance. He will call the clinician in one week with results for the first week.</p>

← **Desired Outcome**

← **Baseline**

# Select Treatment Approach(es)



- What is the primary contributor to the functional problem(s)?
- What treatment approach is more likely to engage the SM/V?
- Is there a tool that can address priority concerns?
- What are the available supports?

# Develop a Measurement Plan



- Who will measure?
  - Clinician/team
  - SM/V
  - Caregiver/family
  
- What will be measured?
  - Specific, observable, measurable indicator of function
  
- When will the measurement occur?
  - Variable, depending on frequency of the functional activity

# Step 3: Affect Functional Changes



- Guiding Principles
  - Recruit resilience.
  - Cultivate therapeutic alliance.
  - Build a team.
  - Focus on function.
- Actions
  - Deliver treatment.
  - Monitor performance and goal achievement.



# Step 3: Affect Functional Changes

(continued)



- Tools
  - Five therapy approaches and tenets
  - Dynamic coaching
  - Motivational interviewing

# Deliver Treatment



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# Five Treatment Approaches



- Personalized education
- Training cognitive strategies
- Selection and training of assistive technology for cognition
- Direct training of cognitive processes
- Environmental management

# Personalized Education



- Tenets
  - Clear purpose of the education exercises
  - Personalize information.
  - Balance education about strengths and weaknesses.
  
- Measurements
  - Engagement in treatment and task completion
  - Monitor impact on therapy.

# Personalized Education (continued)



- Suggested materials
  - Mild TBI Rehabilitation Toolkit, pages 227-228, “Cognition Education,” (Weightman, Radomski, Mashima, & Roth, 2014)
  - SCORE Study Manual, Chapter 2 (Belanger, Kretzmer, Vanderploeg, Bowles, Lindsay, & Cooper, 2015)
  - SCORE Study Manual, Chapter 4, Part II (Ray et al., 2015)

# Personalized Education – Case Study



- Education was provided to validate and normalize JD’s symptoms and gain understanding and insight into factors that contributed to his lapses.
- Personalized education included discussion of negative consequences of not taking his medications as prescribed (e.g., chronic headaches resulting from lack of effective management with pharmacotherapy may lead to decreased tolerance and high irritability).

# Personalized Education – Case Study

(continued)



- The Mild TBI Rehabilitation Toolkit includes a section on “Medication Management” which can serve as a resource. (Weightman, Radomski, Mashima, & Roth, 2014)
- Refer to pages 342-344 for suggestions on increasing patient understanding of issues associated with medication management.

# Training Cognitive Strategies



- Internal thinking processes and external actions that help with self-regulation of actions to achieve desired goals.
- Tenets
  - Strategy selection should match problems and patient preferences.
  - Training should provide appropriate practice for using the strategy.
- Measurement
  - Example: Number and circumstance of memory failures on memory log



# Training Cognitive Strategies – Case Study



- JD paired his medications with established routines
  - Morning meds after brushing his teeth
  - Mid-day meds with meal
  - Evening meds at bedtime

# Training Cognitive Strategies – Case Study

(continued)



- The SCORE Study Manual, Chapter 4, Part II, has patient handouts for attention and memory problems. (Ray et al., 2015)
- The Mild TBI Rehabilitation Toolkit includes a section on “Medication Management” which can serve as a resource. Refer to pages 349-352 on gathering information to personalize strategies based upon patient’s existing supports and barriers. (Weightman, Radomski, Mashima, & Roth, 2014)

# Selection and Training of Assistive Technology for Cognition (ATC)



- Tenets
  - ATC device selection should match patient's goals, preferences and skills.
  - Training should provide high dose of practice for using the ATC device.
  - Evaluation should incorporate device knowledge, use and impact.
- Measurement
  - Example: Number of times the correct doses of medication were taken in a week using smartphone reminder

# Training with ATC – Case Study



- JD selected a smartphone app for medication reminders based upon his needs, strengths and personal preferences including ease of use.
- The clinician provided instruction and training in programming alerts.
- JD established a routine of keeping his smartphone available and fully charged, and adhering to alerts to take his medication. He promptly updated reminders when his prescriptions were modified.

# Training with ATC – Case Study (continued)



- The Mild TBI Rehabilitation Toolkit includes a section on “Compensating for Memory Inefficiencies” which can serve as a resource. Refer to pages 239-240 for suggestions on using ATC. (Weightman, Radomski, Mashima, & Roth, 2014)
- The SCORE Study Manual, Chapter 4, Part II, has patient handouts and intervention suggestions for ATC. (Ray et al., 2015)

# Direct Training of Cognitive Processes



- Based on neuroplasticity, most commonly associated with attention or working memory training
- Tenets
  - Tasks should be organized according to a theoretical model.
  - Provide sufficient repetition.
  - Combine drills with strategy training.
- Measurements
  - Performance of drills
  - Performance on standardized tests?
  - Generalization to functional tasks

# Environmental Management



- Modification of the environment to decrease impact of cognitive problems on function
- Tenets
  - Decisions should be collaborative and based on observation of the SM/V in natural settings.
  - Therapy should include practice in natural settings.
- Measurements
  - Impact on the functional goal
  - Logging the usefulness of the environmental modification

# Environmental Management – Case Study



- JD identified desired features for a pill box organizer.
  - Fits in his uniform pocket
  - Accommodates two-week supply to match the length of his typical field training
  - Each compartment large enough to hold several pills
- JD developed routines for using the pill box.
  - Refill the pill box on the same day of each week.
  - Accessible locations for the pill box
    - Bathroom counter for morning and evening meds
    - In his pocket or on the kitchen table for mid-day meds



# Environmental Management – Case Study (continued)



- The Mild TBI Rehabilitation Toolkit includes a section on “Building Habits and Routines” which can serve as a resource. Refer to pages 248-249. (Weightman, Radomski, Mashima, & Roth, 2014)
- The SCORE Study Manual, Chapter 4, Part I, has Clinician Tip Sheet on “Organizing Personal Papers.” (Ray et al., 2015)

# Monitor Performance and Goal Achievement



- Review progress from session to session.
- Evaluate effectiveness of intervention.
- Identify next steps.

# Step 4: Transition to Self-Management



- Guiding Principles
  - Recruit resilience.
  - Build a team.
  - Focus on function.
  - Promote realistic expectations of recovery.
- Actions
  - Plan discharge.
  - Measure and evaluate outcomes.
- Tools
  - Dynamic coaching
  - Goal attainment scaling

# Plan Discharge



- Discharge planning is integral to the therapeutic process.
- Patient factors to be considered in discharge planning
  - Interest and willingness to make behavioral changes
  - Availability
  - Progress towards goals
  - Needs

# Measure and Evaluate Outcomes



- Patient level outcomes
  - Decrease in symptoms
  - Increase in functioning and participation
  - Goal achievement
  - Quality of life
  
- Provider/clinic level outcomes
  - Effectiveness of treatment
  - Wait times, access
  - Satisfaction

# Cognitive Rehabilitation Revisited



- Tenet 1: Cognitive rehabilitation uses a systematic, collaborative, solution-focused process in which the clinician facilitates goal attainment in functional and participatory activities.
- Tenet 2: It is not enough to teach a patient what to do. The emphasis should be on incorporating the new learning into self-generated cues that support the achievement and maintenance of the targeted behavioral change.

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# DID YOU KNOW?

2

There are two algorithms contained in the CPG

23

The CPG contains twenty-three evidence based recommendations

The collage includes the following elements:

- Top Left:** VA/DoD CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF CONCUSSION/MILD TRAUMATIC BRAIN INJURY. Includes the Department of Veterans Affairs logo and introductory text.
- Center:** A flowchart titled "Module A: Initial Presentation (>7 Days Post-Injury)". It starts with "Person injured with head trauma resulting in altered/loss of consciousness" and branches based on "Significant conditions identified?" and "Is the severity moderate or severe TBI?".
- Top Right:** Cover of the "VA/DoD Clinical Practice Guideline Management of Concussion/Mild Traumatic Brain Injury". It features an eagle with wings spread over a DNA helix and the text "VA/DoD Evidence Based Practice".
- Right Side:** A section titled "PRACTICE GUIDELINE FOR MANAGEMENT OF CONCUSSION-MILD TRAUMATIC BRAIN INJURY" with sub-sections for "Patient Guide" and "DISCLAIMER STATEMENTS".

**2016 UPDATE!**

## VA/DoD Clinical Practice Guideline for the Management of Concussion – Mild Traumatic Brain Injury

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For more information, visit [dvbic.dcoe.mil](http://dvbic.dcoe.mil) or download the CPG and supporting tools at [healthquality.va.gov/guidelines/rehab/mtbi](http://healthquality.va.gov/guidelines/rehab/mtbi)



# Questions

- Submit questions via the Q&A box located on the screen.
- The Q&A box is monitored and questions will be forwarded to our presenters for response.
- We will respond to as many questions as time permits.



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# Save the Date



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**Utilizing the Performance Triad for Optimal Traumatic Brain Injury Recovery**

**July 14, 2016; 1-2:30 p.m. (ET)**

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## Next DCoE Psychological Health Webinar Theme:

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**June 23, 2016; 1-2:30 p.m. (ET)**

# Save the Date (continued)



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