Defense Health Agency

Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury Webinar Series

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

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Operator: Welcome and thank you for standing by. At this time, all participants are in listen only mode. Throughout the duration of today's conference, today's call is being recorded. Any objections, you may disconnect at this time. Now, I'd like to turn over the meeting to Linda Picon. You may begin.

Ms. Picon: Thank you. Good day and thank you for joining us today for the DCoE Traumatic Brain Injury June webinar. Cognitive Rehabilitation and Mild Traumatic Brain Injury, Applications in Military Service Members and Veterans. My name is Linda Picon. I am a senior consultant for the Department of Veterans Affairs and the TBI Liaison to the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury. I will be your moderator for today's webinar. Before we begin, let us review some webinar details. If you experience technical difficulties, please visit, dcoe.mil/webinars to access troubleshooting tips. Please feel free to identify yourself to other attendees via the chat box but refrain from marketing your organization or product.

Today's presentation references and resources are available for download from the files pod and will be archived in the online education section of the DCoE and DVBIC websites. All who wish to obtain continuing education credit or certificate of attendance and who meet eligibility requirements must complete the online CE evaluation. After the webinar, please visit, dcoe.cds.pesgce.com to complete the online CE evaluation and download or print your CE certificates or certificate of attendance. The evaluation will be open through Thursday, June 23rd, 2016. Throughout the webinar, you are welcome to submit technical or content related questions via the Q and A pod, located under your screen.

All questions will be anonymous. Please do not submit technical or content related questions via the chat pod. I will now move on to today's webinar, Cognitive Rehabilitation and Mild Traumatic Brain Injury, Applications in Military Service Members and Veterans. Service members and veterans that have sustained a mild traumatic brain injury or MTBI may experience cognitive symptoms that interfere with their ability to participate in desired roles and activity. These symptoms may reroute related to a history of mild TBI and to deployment related complaint such as chronic pain, headaches, post traumatic stress disorder or PTSD,

depression, anxiety, sleep difficulties, substance use disorders and life stressors following return from deployment.

It is critical for healthcare 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 service members and veterans with a history of mild TBI and deployment related symptoms such as PTSD, anxiety and chronic pain. Through case examples and interactive discussion, the speakers will address existing evidence and working group consensus which resolve that in a collection of general principles of cognitive rehabilitations, strategies for assessment and treatment and clinical tools to assist patients self managed their cognitive challenges.

At the conclusion of this webinar, participants will be able to describe the scope and process of cognitive rehabilitation for service members and veterans with mild TBI, identify and apply guidance principles of therapy and articulate available resources for providers of cognitive rehabilitation, that are appropriate for service members and veterans with mild TBI. It is my pleasure to now introduce our esteemed speakers. Dr. Douglas Cooper is the research neuropsychologist for DVBIC in the Department of Neurology at San Antonio Medical Center. He is an adjunct associate professor in the department of psychiatry at the University of Texas, Health Science Center in San Antonio.

He receive his PHD in clinical psychology from the Southwestern Graduate School of Biomedical Sciences, University of Texas, Southwestern Medical Center. Dr. Micaela Cornis-Pop is the national program manager for the Polytrauma System of Care in the Department of Veterans Affairs or VA, Office of Rehabilitation and Prosthetic Services. She's an associate professor in the Department of Physical Medicine and Rehabilitation at the Virginia Commonwealth University. She is also a fellow of the American Speech Language Hearing Association. She received her PHD in General Linguistics from the Babeş–Bolyai University in Cluj, Romania. Now, it is my distinct pleasure to give the floor to our presenters, Dr. Cooper and Dr. Cornis-Pop. Dr. Cooper, take it away.

Dr. Cooper: You all see me? All right, depending on where you're logging in, either good morning to you or good afternoon. Thank you to DCoE for the opportunity to speak with you about cognitive rehabilitation practices. As Linda said, I'm currently a researcher here at DVBIC in San Antonio but for more than 10 years, I spent working directly hands on with service members with traumatic brain injury and I used those or draw upon those experiences to really try to inform what I do which is now conducting research on kind of best practice interventions to help our military service members and our veteran through the recovery process.

As Linda, sort of eluded to, Micaela Cornis-Pop, Linda and myself are really presenting this information to you but we're doing so and standing on the shoulders of a group of exceptionally talented and experienced therapists who we've been working with in a working group, an ongoing working group to help us develop the content through a series of meetings. I am happy to have the opportunity to present some of this information to you today. All right, I'm just working on my technical ... All right, we're going to start off, the talk with a polling question. The polling question is, to get a little idea of who is on the line today, I'm going to ask you whether or not you identify yourself.

It says primary care provider although that's any medical provider that include PAs, Physicians, in a rehab provider we're talking about typically, physical therapist, speech therapist, occupational therapist, kinesiotherapist and so on. I do want to remind you that the DoD and VA does not like gambling so no gambling on the outcomes. This is for educational purposes only. As I'm looking there, it looks like a good third or more of the individuals on here are rehabilitation providers, which is very exciting to see because that's really what the content of this talk is really going to be geared for is those individuals that are actually conducting these interventions and the steps towards that but like myself, there is also a number of behavioral health providers which are critical members in this team and other individuals.

Okay, this talk that we're going to give today is really a theory driven talk and it's about kind of evidence based practice. It's a how to guide or how to for the therapist to conduct evidence based practice. The way that I conceptualize evidence based practice is that it combines the research evidence that we have in the literature about what works. It combines someone's clinical experience and knowledge that they bring to the table and it also involves the patient values and preferences. Combining those 3 components together, I think really gives us sort of evidence based practice.

As we're going to talk about in just a second, there is certainly a growing evidence based for these type of interventions and the therapist or individual that's conducting these interventions, needs to learn how to apply them but also needs to learn how to apply them in this particular population. When I was in graduate school, I heard a wonderful talk one day as I was learning how to do psychotherapy and it was on the difference between process and content. The way it was described to me, is content is the information that you hear that the patient says to you or you say to them. The tools, the sheets, the worksheets and the different things that you say to them and the process is how you go about creating that alliance and helping to work with the patient to bring about change.

I say that because I think when everyone first starts cognitive rehabilitation, whether it's ... as a new student coming out of school, and in their first job, which happens a lot or somebody who has an interest in working with service members and veterans and maybe moved from

another setting. Let's say, a speech pathologist who had been working in a school setting now comes to start working in the DoD with service members that have had brain injuries. You usually feel most comfortable with kind of a pre-determined course and plan and that's kind of the content. I want to say that I've got these workbooks in front of me, that I've got these computer exercises we're going to do and I'm just going to ... to leave this patient through this.

Unfortunately, as those of us that work with this population realize patients aren't always on board with our plan. They come with their own information and in order to really do cognitive rehabilitation well, what you really need to do is be facilitating the process for them so that they are building up self-efficacy and applying it in their life because that's what really matters to the patient. Not the goals and ideas that you sort of brought to the table. The idea of this talk is to learn a little bit more about what that process of how to conduct cognitive rehab with mild traumatic brain injury. How that occurs and which interventions to use so that you can kind of maximize their outcomes.

Again, as I sort of talk about the important parts that Dr. Cornis-Pop is going to sort of reflect with you is steps in terms of developing that alliance with the service member veteran, how you can actually create goals. One of our biggest challenges is what we call setting the hook. Getting somebody on board so that they're going to stay with us to do the work, rather than just showing up for one or 2 sessions and saying, "I'm so sorry but this really isn't for me. I need to get out of here." Then, really, making the changes and starting to transition to self-management. That's how really good cognitive rehab ends, is with the patient taking on that.

Okay, so after telling you that we're going to talk about process mostly, I want to let you know that there is a lot of content that has come out and this slide is just summarizing, some of the various tools that have come out over the last 5 years, that area really content based tools. All of these have first, some exceptional information in them about how to conduct these practices, what the techniques are and so on, and how you might apply them. The content is out there and what we're going to talk to you a little bit more is, about how to actually apply that content through the process.

All right, so one of the things that I just wanted to kind of mention to you is for those therapists in the room, some of these techniques are going to be familiar to you and some of them may not be familiar to you. These are some of the interventions that we're going to go over and talk about that have ... or sort of part of the evidence based practice in cognitive rehab for mild traumatic brain injury. Goal attainment scaling is the first thing. Sometimes called, GAS, GAS goals. One of the big proponents people have heard of Jim Malec and he's done a lot of work with goal attainment scaling in severe traumatic brain injury in other rehab populations. I really like goal attainment scaling in this population because it forces the therapist to keep the focus on the function.

You're developing functional based goals for individuals and that's how we actually make some progress in our therapies. The next technique that we're going to talk about is motivational interviewing. A lot of the behavioral health folks on the line probably are familiar with this because it really emerged, it was adapted from the substance abuse literature, Miller and Rollnick were some of the original people who developed this technique but it's essentially an interviewing and a discussion technique that enhances and engages the motivation of the patient to facilitate some change in their behavior. We've all had the experience in which the patient comes there and has no motivation to change and we sort of feel like, we're spinning our wheels.

One idea is you say, the patient's fault or they're not ready or I'll blame the patient. Another one is what techniques could I use to try to engage that person because possibly what's happening is what I am presenting to this person they're not really interested in that. I need to figure out, how to apply this and adapt this more to them. The next technique we're going to talk about is dynamic coaching. Dr. Mary Kennedy, is a really great proponent of this and really talks about kind of the coach's role in understanding the patient's difficulties and then scaffolding the learning around those difficulties to sort of enhance some change.

Dr. Cornis-Pop is going to talk to us a little bit about applying dynamic coaching in the mild traumatic brain injury population. Personalized education is such an important component. It's important for 2 reasons, one is we know that educational techniques are always the foundation that we're building mild traumatic brain injury care on, teaching them about symptoms, teaching them about expectations of recovery, teaching them about the strategies and techniques that we're using and how to employ those in their life. Active listening so that we validate the symptoms that the patients are coming to us with and then education on specific symptoms and how you can work on those.

Kind of personalizing that education depending on what the person tells you about their experience, the experiences that they've had and how they understand their symptoms and what their functional goals are. Assistive technology is absolutely burgeoning wonderful gift that we happen to have, we're no longer back in the days of buying these giant planners and everyone carrying those around. There is some challenges associated with training on assistive technology and the most important ones is there is just such an explosion of information. It's so hard to understand within that which techniques are actually helpful and which are not. Again, I'm using someone that I'm going to reference, I'm not making a personal thing for her program.

There is somebody by the name of Michelle Wild who has created her website called Making Cognitive Connections. She's done a fabulous job of trying to actually take these techniques, these assistive technology techniques and create some blogs and some other things where both patients and therapist can log in and sort of comment about what's been

helpful and what's not been helpful because the challenge is, you really have to stay on top of this technology, if you want to be successful. The other thing we're going to talk a little bit about is direct training of cognitive processes, like direct attention training. This kind of comes from the world of McKay Sohlberg.

The challenges combining these sort of drill based attentional techniques which strategy training and more functional task to make sure we get better. Then, the last one of course is environmental management. Just simple techniques like everyone in my office knows when I'm writing reports that I keep my door closed because I can't filter out some of the outside noise in the hallway. That works for me and I just have to deal with it. A couple of things that I'm going to talk with you about is military culture. I'm going to read to you 2 quotes, one is ... these are both in a really nice series of papers by Eric Meyer about Military Cultural Competence.

The first one is from one of the founders of John Hopkins, Sir William Osler and he said, "It is much more important to know what sort of patient has a disease than what sort of a disease a patient have." We have a growing appreciation of the fact that someone's personal values and things can actually influence their healthcare utilization and that's no more pressing than in this population. The second quote is from Admiral Michael Mullen who is the former chairman of the Joint Chiefs of Staff and he said, "But I fear they do not know us. I fear that they do not comprehend the full weight or the burden we carry or the price we pay when we return from battle."

"This is important because the people uninformed about what they are asking the military to endure is the people inevitably unable to fully grasp the scope and the responsibilities our constitution levies upon them. We must help them to understand our fellow citizens who desperately want to help us." I think that's critical because my experience has been that, from working in the DoD for a long time is that people have the right intentions but sometimes they don't have the knowledge or the sensitivity to sort of military culture. Don't fool yourself. Military very much is a culture. It has its own history, its own laws, its own customs, its values and its tradition.

That level of acculturation is extremely high, not only when someone is in service, in which that's part of the training and that indoctrination into those values. As people who work in the VA and for people who work like me at SAMC know that even after service, the veterans that I see that still continue to wear hats, showing or t-shirts, showing their dedication and their continued military acculturation, that's an extremely important thing, is to showing that appreciation. Some of those values that we're talking about are being very mission-oriented, having sort of selfless service and the expectation that somebody is going to make sacrifices. Also, the ability to sort of drive on.

Those are critical because sometimes when we see an individual who may not access the care that we think that they need, sometimes it's related specifically to that culture, that acting on those things somehow signifies weakness or unbroken or unselfish and being able to understand where that person is coming from rather than again blaming, sort of a blaming is extremely important component. It's even been said that maybe military culture itself is actually the really patient when you're dealing with associated combat stress symptoms. What we want to do is adapt those military values, those core values of courage and mission focused and not accepting failure.

You can do it, and we can help, and that is the sort of the framework that we use for this. We need to be very carefully as therapist and providers, when we talk about symptom attribution issues. My personal preference is always to start by asking questions of the patient that I'm seeing about what they understand about their symptoms and what causes their symptoms and explore those beliefs just like you explore their military culture. How ... tell me a little bit about your life now, your family, your military experience so you get a better understanding of that. Then, taking that information and then adapting that in terms of personal education back to the person, their beliefs and values and the situation.

Those are really critical, there are certain ... some teaching moments that we sort of have that we'll talk about. Okay, so I'm going to talk, before I turn it over to Dr. Cornis-Pop, sort of briefly about 6 general guiding principles that I want you to use or think about as you're ... that you're going to apply as you're proceeding with the patient in cognitive rehabilitation. I didn't like that, sorry. The first one, and I think people are very familiar with this is, again the concept of recruiting resilience, is what we want individuals to do, is to be able to adapt and bounce back from these difficulties.

The service members and veterans that I see have worked really, really hard off in times at trying to put their lives back together but for whatever reason, they are struggling with some of these symptoms and these cognitive symptoms are interfering with their life. What we're trying to do is really develop sort of this resilience around them. Now, back to our values issue, I need to make sure that I'm not informing my own personal values on the patient and figuring out what their values are. It's very common that I have individuals that say to me, that they have very strong spiritual beliefs that is, part of the main core resilience they have.

An example is I had a patient last week that said, "What I'm struggling with is, I read bible passages to myself in the morning and I'm really struggling to do that and that's an important part of what I do." In that individual, fostering that resilience and trying to build up that is a core piece. Similarly, family, asking a patient, what would you consider to be your source of strength to manage situations when you feel overwhelmed. This is a way that you can take their personal experience and adapt them

into your treatment. The next critical sort of factor is cultivating the therapeutic alliance.

As we said, unlike, when you're doing, when you're working with individuals that perhaps have severe brain injuries early on, you might use more of a almost maternalistic or paternalistic approach that you're almost like leading them through the process early on. In individuals with mild traumatic brain injury, they don't need somebody. They're functioning in the community to a certain level. They're struggling and so what we're really trying to do is foster sort of a collaboration. A collaboration has to be built on trust. You have to ask questions about what someone's personal experience has been with this type of intervention before because they may have had a prior negative experience or prior positive experience and that's really important.

You have to have kind of mutual respect. I think that goal of partnership is really key particularly as you want to transfer the goals and stuff to the patient as we go forward. Giving you some examples of what we're sort of talking about is, what can we do to help you accomplish your goal. That's the type of questions that are open ended that you might ask. Then, use your active listening resisting the impulsive that's there to be the expert but allow that person's goals to actually drive the process rather than your pre-determined agenda about how this is going to go down. We really have to go in this population, acknowledge the multifactorial complexities.

That's one of the key things. There are some individuals that will come to you, that will say, I know that this is 100% due to my traumatic brain injury and that's why I'm having these cognitive symptoms and there are some individuals that will come to you and say, I've got tons of stuff going on. I've got pain, I've got depression and I'll sleep well, I'm having all these. Again, we have to be careful about not coming in, in the first session and just saying, your problems are all related to all these other things because that's going to dismiss somebody and help them to understand that you can help them work with their cognitive symptoms but that there is probably more than 1 things that might be contributing to them in those individuals that have multiple potential comorbidity.

We think about times of teaching moments and so that personalized education is really critical. Sometimes I've had people who come to me with terrible headaches and they're having a really hard time because of their migraine and they also say, "Because of my migraines, I slept terribly last night." I use it as a little teaching moment to then talk about how does that affect your cognition. What makes it worst, right so we need to work on headache management and sleep management as well if we're going to try to get some traction on some of the cognitive symptoms because we know that makes it very difficult for you. Okay, another guiding principle is to build a team. There is a couple of reasons that it's important to build a team.

One is, that it's very rare that you're going to find the individual that has no other symptoms other than memory or cognitive symptoms. Oftentimes, with individuals with traumatic brain injury, there is going to be a variety of cognitive symptoms of emotional behavioral symptoms of physical symptoms of traumatic symptoms and so we really need a team to try to do that. I happen to be here at SAMC in 2004, in the days when things were sort of stovepiped. I can tell you it's incredibly challenging to try to take on all of that individual's difficulties that they're having and try to manage that care.

Working interdisciplinary is the easiest way to do that and probably the most helpful way are the patient because when they present to you, problems, you can walk across the hallway or walk down the hall and say, "Would it be helpful for you to talk about the side effects of this medicine because it sounds like that's what we're dealing with," rather than putting a note in there and saying, follow up and I'll see you in 3 weeks and we'll see if the side effects are still there, extremely important part of this process. Okay. I can't or say, strong enough about the critical nature of focusing on function. For those people on the line that are neuropsychologist or familiar with the neuropsychological literature, it's often the case that when we look at large studies, with this population, that neuropsychological test are largely normal in this population.

It doesn't take into account the fact that service members and veterans often times have different cognitive complaints or difficulties that are affecting their functioning. The more that we can focus more on the functioning and not on a test score or a particular thing, you're going to get a lot more traction. That's really the focus of our treatments. Sometimes we'll do some more kind of global sort of questions. Tell me about your memory problems and how they affect your daily activities or how does that ... which difficulties matter the most to you and then using that, in terms of goal attainment scaling, you can use that to adapt that particular complaint to their daily life implications and how we actually help them.

Then, the final part that I think is important in dealing with this ... with individuals going through cognitive rehab from mild traumatic brain injury is really having positive and realistic expectations of recovery. We know that individuals provided with positive expectation of recovery is a critical nature in this population. However, many of the individuals that we take care of maybe six months, a year, 3 months, 5 months post. You have to be very careful about how you convey that information, otherwise, it can be wrongly interpreted as something I'm doing wrong, I'm broken. Often times what I say to patients is, "It's taken us a long time to get here and it's going take us a little while to work back and get better but you can do it and we can help."

Other technique that you can also sometimes use is would it be helpful to hear a few stories who had similar and have made good recovery. Again, trying to kind of foster some of the core values of other people before you,

have gone through this and they've recovered and I know we've had a lot of people through our clinic where they came to us because they said I had a person in my unit that came to you all and he's doing so much better and I now need to engage in that treatment. That is an important sort of partner. With that, a little bit of background and I'm going to turn it over to Dr. Cornis-Pop who's going to talk to us a little bit about the specific interventions that we're going to use.

Ms. Picon: Micaela, you're on mute. Thank you.

Dr. Cornis-Pop: Thank you. Make sense. Thank you Dr. Cooper and thank you all for being with us on this occasion. I have no financial relationship to disclose and all the views expressed in this presentation are those of the author and authors that have participated in the development of this program and they do not necessarily reflect the official policy or position of the Department of Veterans Affairs or the US government. That description of the program in this presentation is for descriptive purposes only and it's not intended to promote any individual program. Here we're start in a little bit more detail about what we are actually proposing to do in the new revisited view of what cognitive rehabilitation can do and can accomplish for service members and veterans.

I have started with this graph which seems to be rather [Apped] description of what we are looking at in the process of cognitive rehabilitation. At the center of our efforts is the patient and around him are, are 4 main processes that we envision as part of cognitive rehabilitation, these being getting started, setting the stage for functional change, affecting, really accepting functional change and finally transitioning to self-management. For each of these steps, I'm going to go into some detail by reflecting to the guiding principles that Dr. Cooper has gone through before me but also adding some information about the specific actions involved in each stage as well as the tools available to the clinician.

I'm going to use a case study for illustration and this case study is going to be woven through the whole presentation. It is the case of Jaydie, 28 year old male active duty staff sergeant who was referred for cognitive rehabilitation before because of memory complaints. He was exposed to improvised explosive device blast during his first 2 deployments. He experienced being dazed by no lost of consciousness after both exposures, after the 2nd one he followed guidance regarding risk, educational intervention as well as progressive return to active activity following this second event. He has ... after his 3rd deployment and upon return in CONUS, he has been receiving mental health services for PTSD.

Jaydie is married and has 2 young sons. This is not an actual case but it is a representation of many cases that rehabilitation specialist both in DoD and VA received referrals for indicating that they have memory problems or attention problems or difficulties with activities of daily living

returning to school and I'm going to again use this case in what we propose to do to help Jaydie through his treatment. Here we start with the first step of cognitive rehabilitation getting started. Right at the beginning of the clinical interaction with the patient, it is important to build the trust and the collaborative relationship that will lead to this establishment of the therapeutic alliance between the clinician and the service member or veteran.

It is also important to start the clinical process from the mindset that the symptoms associated with mild TBI are multifactorial in terms of etiology. The actions to be completed at this stage, include gathering information and engaging and motivating the patients. Tools available to us are motivational interviewing and the assessment instruments that are typical or specific to each clinician's profession. I'm not going to refer to each one of these but I'm going to go back for a little while to motivational interviewing. Dr. Cooper has mentioned the main features of motivational interviewing. I'm going to just stress some of the ways in which motivational interviewing is important in a clinical ... in cognitive rehabilitation.

Some of the features of motivational interviewing are important for the development of therapeutic alliance and this have to do with seeing the patient at the center of the intervention. In this view, the clinician is the collaborator rather than an expert in the team effort. The important activity is to illicit patient's motivation to change rather than telling them why they should change and at the same time, we all understand the importance of respecting the patient's autonomy to decide to change versus telling them that they need to change. On the next slide, I have listed some of the motivational interviewing strategies which are generally recognized under the acronym OARS, O stands for open ended questions.

A, stands for affirmations, R for reflections and S for summaries. The next slide, we have a little make up dialog between our clinician and Jaydie, that illustrates the use of the OARS strategy. For example the clinician starts with an affirmation, I understand that you would like to work on taking your medications regularly. Jaydie, responds that he doesn't take them at this time, the clinician reflects on this by saying, "You are not taking your meds." Jaydie adds that he forgets some times and the clinician follows up with an open ended question, "What are your medications for?" Jaydie declares that she doesn't really know what they are for, how ... and he's concerned that every time he complains about something, he is given another pill.

The clinician summarizes the main idea coming from this interview, namely that the patient is not sure what's the medications are for and this maybe a contributing factor to his failures to be compliant with the medication regimen, recommended. Listed here on this slide are the areas where it is important to gather information about the patient's functioning and the patient's problems in order to be able to plan a therapy. Again, we are starting with functional deficit, as Dr. Cooper has

mentioned at the beginning the importance of understanding how the complaints, the patient's symptoms actually affect specific areas of activities of daily living or instrumental activities of daily living or work or return to school.

General complaint as I have a memory problem does not give me the basis to initiate treatment. What I need to know is how the memory lapses actually prevent the patient from accomplishing desired activities. Otherwise, I cannot really be effective in planning treatment. The other areas that are important to understanding in order to go to treatment are the symptom's triggers and the symptom's promoters. What are variables in the situation that is a ...exacerbate or lessen the problems and again the comorbidities. These takes us to the reflection of how this happens ... how this reflects on our case study, in the case of Jaydie the information gathered helped us understand that on the neuropsychological reports. There are no performance deficits which is the expectation in mild traumatic brain injury.

His PTSD treatment shows results that ... depict a stabilized picture with only very mild symptoms but patient has good coping strategies to deal with those. Also from the patient centered interview, we understand that his main goal for therapy, of improvement at this point is being able to remember to take his medication. This is the information that we gathered from Jaydie. At this point, I needed to go on to the next polling question and I want you to weigh in into what the potential factors contributing to memory complaints maybe. I'm going to stop with the results here. Excellent responses, certainly all of these maybe factors that contribute to complaints of memory inadequacy in the completion of functional activities.

Now, let's go back to understanding how we are looking at the underlying factors that contribute to memory complaints. On this slide, I want you to look at statements from patients and try to think what the underlying factors can be that represent, that lie, the basis of the patient's memory complaint. This requires maturity on the part of the therapist, of the provider as well as good clinician ... clinical skills. For example, if the patient says, I tried to remember but I sometimes just forget, this can be rather natural or normally occurring memory lapses. If they complain about never being able to find their keys or their glasses when they leave the house, the trick or the factor contributed to this maybe an organizational issue and maybe we can work on environmental modification.

If they tell you that they're just too busy, they have too much to do, that's why they forget things, the reason for that maybe time management. Maybe we need to work on time management. In the case of Jaydie, who was saying that he doesn't like to take a lot of medication, well, it is possible that his failures to take medications maybe related to ambivalence about the value of medication for his overall well-being. If ... and usually we have male service members and veterans, tell us their

wives complain about them always forgetting stuff. This maybe a reflection of normal forgetfulness and last but not the least, if the patient says that he's too tired to remember again, we have to think about sleep.

Again, this is to reinforce the multiple factors and the complexities of the symptoms or complaints that the patients who come to us are actually experiencing. I want to kind of lead this into an allegorical story which I think is relevant for dealing with comorbidities in mild brain injury. This is an old Indian story about a few blind men, trying to figure out what an elephant looks like by feeling out different parts of the animal. They do that and they all come to very different conclusion of what the animal is like depending on the part of the bodies that they have been ... had the opportunity to touch. Some say, it looks like a rope or a wall or a pillar or a snake or a spear and they are in rather acrimonious disagreement about what the elephant looks like.

It always happens in old stories, a wise king comes around who solves the riddle by explaining that you are all right, the reason everyone or few is telling it differently is because each one of you touched a different part of the animal. Actually, the elephant has all the features you mentioned. I think that this is, rather nice allegory for not only religions because it has been used for different ... to refer to different religions but it's also for the way in which we deal with comorbidities in mild brain injury. Last but not the least, during this step is setting up a quick win or by addressing low hanging fruits so that we can engage and motivate the patient into complying or engaging into the therapeutic process.

Dr. Cooper has talked about it, I will just tell you how this was resolved in the case of Jaydie. The clinician asked Jaydie whether he ever used a written calendar or a phone to keep track of his medications. He indicated that he has not, that he does have a smartphone but he has not used it for his medication and the clinician with his permission is offering to show how he can use the calendar function on the phone to help you keep track of his medications. With this, we move on to the next step, the next stage in rehabilitation, in cognitive rehabilitation and this has to do with a planning treatment. At this point, the guiding principle that we are operating from are recruiting resilience, continuing to focus on function as well as promoting realistic expectations of recovering.

I wanted to add something here in terms of our communication and risk management. We focus on risk management in terms of being careful not to create an actual genesis by stressing the possible consequences of traumatic brain injury. This is very important but at the same time, we needed to be open with risk communication about engaging in rehabilitation, because there are demands on the patient in terms of the effort necessary for behavioral change, in terms of the time that has to be devoted in order to achieve behavioral change and follow up with tasks in the natural environment. Also, recognizing that the outcomes of, that we expected that we will be able to help the patient but the outcomes are by no means predetermined.

That we will help but it will require resilience and dedication on behalf of the patient to achieve the goals that he is setting. I'm going to start the discussion of planning by just mentioning the idea of dynamic coaching which has become more and more popular in health coaching as an approach to management particularly chronic diseases. Thinking about mild brain injury, many of the patients who we see particularly in the VA but also in DoD are post to the acute stage of their injury. We, most of the time, we see them 3 months or later after their injury and in some instances, years after injury.

A coaching model where the patient is supported through education incorporating mechanism for developing accountability for health behaviors and developing appropriate goals, this kind of circular process is something that we can consider as part of the ... of cognitive rehabilitation. Moving on to setting goals, during the patient centered interview, the clinician uses motivational interviewing to identify elements that will optimize the development of personally relevant goals. It is again, as Dr. Cooper mentioned, it is important that this goals be functional and that also, that they are developed in a framework which is known by the acronym SMART, which involves goals being specific, measurable, achievable, realistic and time based.

An example of a SMART goal is given at the bottom of this slide, which is I will spend 47 to 54 dollars weekly on entertainment. It's very specific amount of money spent on ... for a certain area of my expenditures and time based on a weekly basis. This has to be compared to a baseline if I, at baseline, spent $100 on entertainment, it is possible that cutting it in half during the first week is not going to be an achievable goal. On the next point, I will present 4 goals and I would like for you to determine which one of them uses the SMART framework. Spend a little dose of time looking at them, which ones are specific measurable achievable, realistic and time based.

They're a little bit long but I would like to spend a little bit of time looking at them because it's an interesting way of determining which ones are functional good goals. I'm going to stop here and the opinion seems to be divided between almost half to have between goal number 2 which I will spend 47 to 54 dollars weekly on entertainment and pay off $20 of the outstanding balance on the credit card, which is a very lofty goal. The second one, the 3rd one and ... was I will deadlines for assigned work task, 80% of the time for 2 weeks in a row, using a 9 step problem solving process. I'll tell you, goal number B is a very good candidate. The problem with it is that it has 2 parts to the goals.

It is ... it will be difficult to measure the achievement of the goal because I'm looking not only at saving money but also at paying the outstanding balance on the credit card. If I achieve one but I don't achieve the other where am I with the goal. How do I measure the accomplishment of the goal so I would go with goal C as the one following the SMART guidelines. Dr. Cooper has talked about the goal achievement scaling

which further breaks down the goal for intervention into a 5 point scale from minus 2 to plus 2 and I have here an example of what we did in the case of Jaydie so I can better illustrate what we are talking about. The baseline is that minus 1 because the patient is not satisfied with his performance at this point.

This is why it is below zero. The desired outcome, the first step of the desired outcome is at level zero and then exceeding the outcome is at equal intervals at plus 1 and plus 2 and we have always have to remember that there can be a diminished function so we have a minus 2 there. There is a great advantage in using goal attainment scaling in rehabilitation, in the sense that you are determining in advance how the goal is going to be judged prior to the intervention, the limitation on the other side is that you have to actually develop 5 different goals, levels of the goal, for each goals so it does ... it tends to be label intensive. We are ... I'm looking at my time and I needed to rush a little bit through the presentation.

I'm going to just mention that the selection of the treatment approach is, which is going to be the next stage in cognitive rehabilitation is going to be determined by the ... what causes the functional problems, what kind of treatment is most likely to engage the service member or the veterans. What are ... are there any assistive technology tools that can be used as, to manage some of the priority concerns and what are the available supports in the patient's environment that would promote the goal achievement. Measurement plan, having a measurement plan is also very important and we have to be thinking and be consistent in how this measurement plan is going to be applied throughout therapy, starting with who will report the measure.

Is it going to be the clinician or the team. Is it going to be the service member or her caregiver. Be mindful that what we measure is specific observable and it is an indicator of function and determine what the time intervals or the frequency of the measurements is going to be. Now, on to the meat and potatoes of cognitive rehabilitation, which is the 5 treatment approaches. These 5 treatment approaches work together with dynamic coaching, motivational interviewing and the 6 guiding principle and understanding military and veteran culture as, cogwheels that turn in unison to integrate all aspects of cognitive rehabilitation.

The 5 treatment approaches that we ... that have shown efficacy in the literature, the special literature are personalized education training cognitive strategy, selecting and training assistive technology, direct training of cognitive processes and environmental management. Dr. Cooper has highlighted the main aspects of each of these 5 treatment approaches. I'm not going to go through them in any detail other than telling you that if you download our presentation, you are going to have more indications about what the penance of each of this treatment approach is, or how we can measure them and what materials are

available at, on the links and in the materials that are listed for you in the ... in the files.

Let me just go through them quickly. We have some time for questions. I think that there are a couple of highlights that I wanted to make ... as general principles of cognitive rehabilitation treatment. One is that it is very important to personalize the treatment than just throwing brochures at the patient with memory strategies does not constitute treatment. The patient has to understand how the specific maneuver applies to his or her problems. It has to have initial ... it has to have adequate amount of opportunities to experience and to train in that particular technique or strategy in order for it ... for him or her to become fluent in using that strategy or that technique in everyday naturalistic situations.

Let me finish with this. Just adding that throughout therapy are not only the end, we have to monitor performance and goal achievement by reviewing progress with the patient at every ... on every session. This is very important for continuing to engage the patient building self-efficacy and resilience. It's also important for the clinician in order to be able to evaluate the effectiveness of the intervention and to identify the next steps. The last step in cognitive rehabilitation is transitioning to self-management. It is a truism to say that the transition starts with the first meeting between the clinician and the patient at which time there is a mutual understanding about what the clinical intervention can do for the patient.

When the clinical intervention, when it will be time for the patient to take over the management of the tools that have been provided to continue to function optimally. Generally, we look at patient factors when we consider discharge planning including the interest and their interest and willingness to make behavioral changes, their availability to participate in interventions, their progress towards their goals and their ongoing or resolved needs. In terms of outcomes we are all more and more aware about the importance of reporting outcomes for the activities that we perform as clinicians. It is demanded of us, it is expected both through our leadership but also through all the accrediting bodies that look at our activities.

Overall, I want to just ... to make it simple for people to look at outcomes to try to classify them into 2 levels of outcomes. One is a patient level outcome, the other one is a provider or clinic level outcome. At the patient level outcome, we are looking at decreasing symptoms. At increasing functioning and participation, in having achieved goals and improved quality of life. At the level of the provider or the clinic, we are looking at the effectiveness of treatment. The efficacy of treatment as well as wait times access and satisfaction. With this, the last slide is something that I'm going to read through because we find that it is a good formulation of how we think about cognitive rehabilitation as a process rather than content.

It is, cognitive rehabilitation in our view, uses a systematic, collaborative solution focus process, in which the clinician facilitates goal attainment in functional and participatory activities. It is not enough to teach the patient what to do, the emphasis should be on incorporating the new learning into self-generated queues that supported the achievement and maintenance of the targeted behavioral change. With this, the last 3 slides are slides that contain reference that we have used to develop our program and I think that it is time for me to turn it over to Ms. Picon. Linda.

Ms. Picon: Thank you so much Dr. Cooper and Dr. Cornis-Pop. What a fantastic and down to earth presentation, that can change and improve our clinical practice today. Audience, if you have any questions for our presenters, please submit them now via the Q and A pod located on the screen. While we get our questions together, I'm going to mention some other products. In 2009, the VA and DoD published a clinical practice guideline or CPG for the management of concussion or mild TBI. Since the release of the original guidelines, research has expanded the general knowledge and understanding of mild TBI. Additionally, recognition of the complex nature of this condition has led to the adaption of new strategies to manage and treat individuals with a history of mild TBI.

Every year, the VA and DoD released an updated CPG, which includes 2 algorithms and 23 base, evidence based recommendations. It encompasses all aspect of patient care, including diagnosis, assessment, treatments and follow up. It's intended for VA and DoD healthcare providers, including physicians, nurses practitioner, physician assistants, psychologist, social workers, nurses, speech language pathologist, and all kinds of rehabilitation specialist, involved in the primary care of service members or veterans who have a history of suspected or diagnosed mild TBI. The expected outcomes of successful implementation of these guidelines are to assess the patient's condition and determine the best treatment method.

Optimize the clinical managements to improve symptoms and functioning, adherence to treatment, recovery, well-being and quality of life outcomes. Minimize preventable complications and morbidity and emphasize the use of patient centered care. The CPG is available at the link on your slide or www.healthquality.va.gov. Learn about this updated CPG in the June 24, VA/DVBIC ground rounds featuring members of the CPG working group. Register for this event at dvbic.dcoe.mil. Please note that while screening for and addressing co-occurring mental health disorders is considered good clinical practice, specific guidance and management of co-occurring mental health conditions is beyond the scope of this mild TBI CPG.

Interested providers are referred to related VA DoD CPGs which address PTSD, major depressive disorder, bipolar disorder and suicide risk. It is now time to answer questions from the audience. If you have not already done so, you may submit questions now via the Q and A pod located on the screen and we will respond to as many questions as time permits. Thank you again, Dr. Cooper and Dr. Cornis-Pop. I have the first question

for you. This presentation focused on cognitive services for service members and veterans with mild TBI and deployment related symptoms but DVBIC data shows that over 80% of mild TBIs in the military are diagnosed in non-deployment settings.

What would you say perhaps, Doug, you can take this question. What would you say is the applicability of these guiding principles and pre-approaches to non-deployment related mild TBI or even in civilian settings for that matter?

Dr. Cooper: Thanks, Linda. I think it's a really good question and yes, even the hidden secret is while we were going through those wars, the largest percentage of individuals have sustained these injuries, sustained them in garrison. I think that there is potential to use many of these techniques and interventions with that population. I think one caveat, has to be that you need to again, ask questions about the individual and get more about just the person. I say that because often times, when I saw individuals that were injured in theater, it might be a year or it might not be that PDHRA like a reassessment time that I actually see them and bring them back into treatment.

In those situations, it's much more chronic and long term and some of the interventions that we talked about are sort of adapted for that. If I'm seeing somebody that's very early on, the types of interventions might be a little bit more adaptive. We might use more just general cycle education and talk about kind of expectations of recovery and just doing a very quick symptom based sort of treatment to do that. I think it certainly applies to everyone and just because someone had an injury in garrison though, doesn't mean that there aren't other things that are going on in their life to include pain issues, prior deployments and other things as we sort of talked about the complexity in this population.

Ms. Picon: Absolutely, absolutely. Thank you Dr. Cooper. I have another question here. The question is, what are the most important aspects to know or be familiar with about military culture, prior to beginning therapy with members of ... or better, a service members or veterans of the military.

Dr. Cornis-Pop: Doug, will you take this question, you addressed it at the beginning.

Dr. Cooper: Sure. I think there is a couple of different components of understanding military culture for a provider and the first part is knowing about what your comfort and familiarity are with that population. Two, is how much you understand about the values and the things that we talked about and then 3, is how much specific knowledge. Rather than giving just sort of broad base, what I would readily say to you is, there are some tools that are available to sort of increase some of that knowledge in sort of a more systematic way. I know that there is a ... something going on now particularly with you should, sort of leading this about trying to get military cultural issues, adapted into the curriculum but for a lot of institutions that's not the case.

I don't know if I have it right now but I'm more than happy to respond back to someone. There is a really good review article that has a whole bunch of different resources for learning about military culture issues and increasing somebody's confidence in that area. I'm more than happy to email that to people. My email is douglas.b.cooper.ctr@mail.mil.

Ms. Picon: Excellent Dr. Cooper. Thank you and I think that also, if you want to send it to us, we can post it within the, via those links and the links that are going to be available for viewers. Thank you so much.

Dr. Cooper: That's a great idea. That's even better idea.

Ms. Picon: Otherwise, you will get inundated with email, right?

Dr. Cooper: You got it.

Ms. Picon: I have another question for the audience, I think Micaela, you may be able to take this one. The question is, is this process effective for patients who may have experienced a mild TBI years before but continue to experience residual deficits or difficulties?

Dr. Cornis-Pop: I think that I would hedge my bets on the effectiveness of rehabilitation when the mild brain injury, when the patient has really remote history of mild brain injury because they have been so many events patient's life since that time that the original mild brain injury, the effects of the original mild brain injury maybe put into question. There are many other life events that may contribute to the patient's cognitive decline at the particular time when you see them. I think that it is worth, looking into what specific functional problems the patient has, is there a way in which you can address those functional problems. You can do a trial therapy, 2 or 3 sessions and see if that has, meets the patient's needs, whether it has the proposed effects on the patient.

I would say, don't say no but at the same time, don't enroll the patient into a lengthy treatment for something that has been going on for a long time. Some other type of intervention such as case management or maybe health coaching, maybe more useful for the particular person to help them regain more control of the areas that they have complaints in.

Dr. Cooper: Linda, can I piggyback on that as well?

Ms. Picon: Absolutely. Please.

Dr. Cooper: I would just going to say, sorry, here we go, I'm not on camera. There is also some data, I'm going to address the issue about the time since injury. There is some data coming out of our clinic here in terms of the score trial and some of the follow up papers that we're doing on the score trial that actually paradoxically show that the responders, the individuals who get better through some of these cognitive rehab and as well as kind of multidisciplinary techniques, tend to be the individual that are more

time since injury and the intervention seems to be similarly effective for people with single injuries and people with multiple injuries.

Now, that's coming, some research is coming down the pike but it's actually some very exciting information that I wanted to share with people, because sometimes, what I hear people say is, "Well, it's not just going to work for me. It's been too long since my injury or I've had too many concussions and I'm broken," and I don't want people to have that message because I don't believe that to be the case.

Dr. Cornis-Pop: That's totally true. I think that the length of times is always a factor, you know, are we talking about 2 year post injury or are we talking about 20 years post injury because we do see people from Vietnam era coming to us in the VA with a history of traumatic brain injury, of 50 years before and that is more difficult to address. There is progress as we know, with rehabilitation. It has been shown in stroke and in other neuro, areas of neuro rehabilitation in 10 and 15 years post the injury so yeah. I basically agree with what you said.

Ms. Picon: Absolutely, so do I and I think people always ask the question about time frame from injury. I think people always ask the question too about the length of treatment, that those are just treatment. How long do you anticipate change or how long do you keep people in therapy? How do you push people into self-management more quickly?

Dr. Cornis-Pop: We don't have exact way of dosing therapy in ... if we are looking at the evidence, the trials that have been kind of all over the place, from a few days to several months and the intensity is also a factor. Do you ... are you able to see the patient on a daily basis? Do you see them once a week? Do you see them once a month? All of these are factors to consider. My rule of thumb is that if you start working on 1 goal, particularly after mild TBI. Maybe a dose of 5 to 7 sessions, maybe appropriate to establish the new behavioral pattern and then check in with the patient to see whether they are able to maintain the behavioral change that you have targeted and whether the goal is ... continue to be in focus.

Dr. Cooper: Linda. Can I just also say one thing? I was just going to say, also, I think part of what we talked about today was that collaborative approach between patient and therapist. Often times the answer is first starting with, what are your needs and what are your values and what are you able to actually accomplish. In the score trial that we did here in the DoD, we use the sort of the compact, 6 week program, because that's what worked best for the service members that were here but I know that my VA colleague often times say, "I can't do a 5 day a week program like that. That doesn't work for my patients." That's what's okay. When I get frustrated with therapist, it's because I hear somebody who's functional and doing task in the community and the therapist tells them, "Stop doing those and come in to intensive treatment."

I never want to hear that. I mean somebody ... that's actually the opposite of what we want. We really want someone to be working around the function activities they're doing and supporting those, even if we have to extend those out over a period of time. I think that's part of that collaborative approach that I think is really critical.

Ms. Picon: Absolutely. Thank you both. Along those lines, questions that I'm getting in also talk about people who have mild TBI and PTSD symptoms. How do you stagger those treatments or how do you integrate treatments for both of these areas based on the patient's complaint?

Dr. Cooper: I'll take this one.

Dr. Cornis-Pop: Okay, go ahead.

Dr. Cooper: Yeah. This is part of my research. I believe so strongly in integrated behavioral health with this and the reason I believe that is, because as we talked about, traumatic brain injury doesn't only affect people's cognitive symptoms. It affects emotions, behaviors. We know that in the VA, for instance, 89% I believe have a ... people with traumatic brain injury have a secondary mental health disorder of which 50% of those is combat stress. Dealing with these symptoms and trying to manage these symptoms is so critical. I can tell you from my own personal experience, I've been there when we would have a patient go to a TBI clinic.

Then later on in the day, they would be pushed over to a behavioral health clinic and then they come back and they sometimes got mixed messages about that and that's why I believe so strongly in this multidisciplinary and sort of collaborative approach so that we can work on these things in unison. Sometimes, it maybe that one of those symptoms, being able to get better control of that, whether that's sleep issues, if I can just get better control over the sleep issues and the nightmares, it's going to make my cognitive symptoms better. It's going to make some of the other symptoms better or headaches for example. Though I think it's really, really important to do that in an integrated fashion as much as you can.

Now, I practice in the private practice setting now and I have to tell you, that's one of the biggest headaches that I have is that I'm just one person managing it and sending it out and I really don't know unless I send it to a certain people in the community, who is going to give the same message and treat things in the same way and not give a totally contradictory message with me but I really believe that in order to affect change, we have to kind of give the same positive message.

Ms. Picon: Thank you Dr. Cooper and I think you said something very important that it's not just about coordinating services but about integrating services. Thank you for that answer. Dr. Corins-Pop. I have another question here that's a little more related to motivational interviewing. How do you address those cases or complaints where the most specific functional

deficit description that you get from the veteran or service member is, "I walk into a room and forget why I've gone there." In other words, you can never really seem to get a specific complaint that they cannot quantify that complaint.

Dr. Cornis-Pop: Well, this ... and this is why we do need specialist in rehabilitation to provide these services and manualizing the treatment is certainly valuable but the art of the clinician is also very, very important. The, I think that there are several things that I would be looking into with a patient. Some of them could be their pain problems that affect memory. Are there sleep problems that affect, are they environmental stressors on the patient. Then, try to, certainly do some testing to see whether, in the clinical environment, whether the memory function itself is, or is not limited and if it is not ... if the testing, if the clinical environment doesn't provide this kind of information then you should be looking further into all these other aspects of the person.

Are there stressors, are there financial stressors? All of these may contribute to a situation where the person cannot keep track of their activities, cannot keep track of what they are doing. Are they emotionally overwhelmed? Are they depressed? It take some detective work on behalf of the, a good clinician to see how they can help a patient who comes with a generalized problems like, problem like this because I think that the message to take from here is that we don't really improve memory. I'm not making a person an Einstein, okay because I cannot make myself an Einstein. I would start there if I could but what I can do is to help them function better and perform their activities of daily living and participate to their satisfaction in their lives.

Dr. Cooper: Linda, just one thing to add, Dr. Cornis-Pop said something that I think is really, really important and that is there is an art to good therapy. As much as we want to drill it down and make it content based, whether it's psychotherapy, whether it's cognitive rehab, there really is an art to good therapy. These are some of the components of that process but I'm always amazed when I see certain people that are just so good at doing it. The one caveat or the one take home that I always listen is, one therapist, once I heard them say, good therapy is about doing for yourself what you can't do by yourself. There is a lot to that because there is very smart people that we take care of that they need someone else to help them to do it for themselves.

Ms. Picon: Absolutely. Thank you very much for your answers. We have just time for one more quick question, before we go into that, I also see some questions, people asking about, are the CPG's post available to the public. They are, in the presentation, you will find the links to be able to access them. For the last question I have here, that I thought was very interesting, it's someone asking about those that come to our clinics, what we suspect there are secondary gain issues. Whether it's a benefit issues or whether they're maybe reluctant to give up, paid family caregivers, those situations where we suspect there may be other things that are

impacting how someone improves in our therapy. What suggestions may you have for those clinicians?

Dr. Cooper: You really save that one for last, Linda?

Ms. Picon: Yeah. I thought that was good.

Dr. Cornis-Pop: Start it off Doug and I have to piggyback on that, you go.

Dr. Cooper: Please do piggyback on it. I would tell you that, one of the challenges have to be with the roles that we play and when you're a therapist and you're working on with somebody, I believe very strongly that you need to be an active listener to work with them in where they are in that moment, that that is not the context for trying to work out secondary gain issues. There might be other people on the team that might have that role. Your role is to try to help that person get better, even if you suspect that there is other things going on and I think probably that's the best answer I can give you because it's an extremely complex topic but I probably think in a team process, that's something that you can talk about as a team and figure out how we're going to shake that out.

Dr. Cornis-Pop: The only thing that I wanted to add is that secondary gain is a much more complex idea than ... if the person wants to have more benefits. It is ... this rarely happens that the person plans it this way. There are other aspects of their, psyche of their personalities that have a role in this and it is our function as a team to address this other aspects of the person's social, psychosocial situation in order to, try to help them out to the extent possible. Again, trial is always ... it doesn't hurt anybody.

Dr. Cooper: Hey, Linda. Before you close things up, I just wanted to give a shout out to Dr. Pauline Mashima who is the leader of our working group, including the 2 of you and many other outstanding people. She really dedicated herself to this work and I just really, really appreciate for really presenting her information but I appreciate all the things she's done.

Ms. Picon: Absolutely. Thank you so much for that shout out. I think the feeling is mutual from here. That's all the time we have for questions today. Once again, from the bottom of my heart, thank you so much, Dr. Cornis-Pop and Dr. Cooper for your amazing presentation. I think the field as am I are very appreciative of the tools and guidance principles that we have discussed today. This really add a unique component to our cognitive resources and that is guidance on how to deliver cognitive interventions to help our service members and veterans really get on board with therapy and move towards health management of their cognitive challenges. Once again, excellent questions from the audience and a great discussions by all participants. Much appreciated.

Dr. Cornis-Pop: Great session.

Ms. Picon: Thanks you very much. We are very grateful. I need to go up. Okay. After the webinar today, please visit dcoe.cds.pesgce.com to complete the online CE evaluation and download or print your CE certificate or certificate of attendance. The online, continuing education evaluation will be open through Thursday, June 23rd 2016. To help us improve future webinars, we encourage you to complete the feedback tool that will open in a separate browser on your computer. To access the presentation and the resource list for this webinar, you may download them from the files pod on your screen or the DVBIC website at dvbic.dcoe.mil/online/education. All your recordings and edited transcripts of the close captioning will be posted to that link in approximately one week.

The chat function is going to remain open for an additional 10 minutes now after the conclusion of the webinar to permit attendees to continue to network with each other. There are a couple of upcoming webinars that we'd like to announce. The next DCoE TBI webinar which is Utilizing the Performance Triad for Optimal Traumatic Brain Injury Recovery is scheduled for July 14th from 1 to 2:30 Eastern Time and the next DCoE Psychological Health webinar called Obesity Eating Behavior and Stigma Among Service Member's Independence is scheduled for June 23rd 2016 from 1 to 2:30 Eastern Time as well.

The DCoE 2016 Summit, State of the Science, Advantages and Diagnostics and Treatments of Psychological Health and Traumatic Brain Injury in Military Healthcare is scheduled for September 13th through the 15th 2016. That concludes our presentation. Once again, thank you very much for attending and thank you to our esteemed presenters. Have a great day everyone.

Operator: Thank you for your participation in today's conference. Please disconnect at this time.