



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

**“Return to Duty Following Concussion: Lessons Learned from Sports Concussion
Management”**

December 8, 2016 1-2:30 p.m. (ET)

Operator: Welcome, and thank you for standing by. At this time, all participants are in a listen only mode. Today's conference is being recorded. If you have any rejection you may disconnect at this time. Now let's turn the meeting over to Mister Gary McKinney. Thank you, you may begin.

Mr. McKinney: Thank you. Good day, and thank you for joining us today for the DCOE Traumatic Brain Injury December webinar, Return to Duty Following Concussion: Lessons Learned from Sports Concussion Management. My name is Gary McKinney, and I'm the chief of clinical practice and clinical recommendation for the Defense and Veterans Brain Injury Center. 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, dcoe.mil/webinar to access troubleshooting tips. Please feel free to identify yourself to other attendees via the chat box, but refrain from marketing your organization's product.

Today's presentation is available for download from the files pod, and will be archived in the training and events section of the website. All who wish to obtain continuing education credits for certificates 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 certificate, or certificate of attendance. The evaluation will be open through Thursday, December 22, 2016.

Throughout the webinar, you are welcome to submit technical or content related questions via the Q&A pod located on the 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, returned to duty following mild traumatic brain injury, lessons learned from sports concussion management. Mild traumatic brain injury, or TBI affects active duty service members at home and in deployed settings. This injury can affect performance, and make a decision to return to duty challenging. Currently, healthcare providers use best practices and evidence from

sports concussions research to help determine when a service member with mild TBI is ready to return to duty.

Presenters will describe return to play guidelines from sports concussion literature, with applications to military environments. They will explore the roles of the certified athletic trainer, and the prevention recognition, and proper management of concussions, also known as mild TBI. Presenters will also highlight a standardized provoked for progressive return activity based on the sports concussion approach.

At the conclusion of the webinar, participants will know how to discuss the impact of mild TBI. Excuse me, discuss the impact that mild TBI may have on service members, and how providers can determine when they are ready to return to duty. They will also be able to articulate approaches for evaluating service member's readiness for returning after concussion, describe the role of the certified athletic trainer and the prevention recognition evaluation and management of people with mild TBI, and apply standardized process for service members and athletes recovering from concussions.

Doctor Scott Livingston served as a DVBIC education division director. He has 28 years of experience as a physical therapist, 15 years as a certified athletic trainer, and eight years as an athletic director, experienced in the Navy medical service Corps. He has 15 years of experience teaching undergraduate [inaudible 00:04:04] science, graduates physical therapy, athletic training, and rehabilitation science. He has 12 years of research experience in sports related mild TBI. He received his BS in physical therapy from Ohio University, his MS in advance that physical therapy from the University of North Carolina at Chapel Hill, and his PhD in sports medicine from the University of Virginia.

Mr. Sedory is an athlete trainer with the United States Marine Corps at Quantico. He is also an adjunct professor, and athletic trainer at George Mason University. He was the past president of the Virginia athletic trainers Association. He was also an instructor in the counter narcotics and terrorism operational medical support, and he received his Masters degree in education at the University of Virginia. I will now turn it over to Doctor Livingston.

Dr. Livingston: Good afternoon everyone. Just to start at the presentation, myself nor Jay Sedory have any disclosures to reveal. The views expressed in the presentation are those of Jay Sedory and myself. They don't reflect the policy of the department of defense, the centers of excellence, or the defense and veterans brain injury Center.

We're going to start out with a polling question first, just to get a sense of who our audience members are. If you take a moment to ask the polling question there on your screen, what is your primary discipline? It looks like we've got a pretty good mix of rehabilitation providers, behavioral

health providers, social workers, case managers, or other, along with some primary care providers, so pretty good mix for today. We thank you for joining us.

Let's get back to the presentation here. All right, so as an overview to today's presentation, I'm going to provide a brief introduction to set the stage for what the scope of the problem of return to duty decision-making for service members with traumatic brain injury. We will get into more specifics on evaluating readiness to return to duty, what the current literature and Department of Defense guidelines are for return to duty. I'll then hand things over to Jay Sedory, who will talk about the role of the athletic trainer in concussion prevention and management. Then, I'll conclude with providing an overview of the defense in veterans brain injury centers standardize progressive return to activity, which is a clinical recommendation for primary care providers, and rehabilitation providers. Then, we will do a quick wrap up of all the items we discussed as our conclusion.

By way of introduction, this is a topic that has been near and dear to me for probably about 20 years, even before conflicts in Iraq and Afghanistan kicked off. I had been working as an athletic trainer. Most of my teaching and research experience in the area of sport related concussion has been with college and high school athletes. I saw significant overlap in some of the challenges, and clinical questions, research questions that were being raised when conflicts in Iraq, and Afghanistan, and elsewhere really brought traumatic brain injuries to the forefront, at least from military sense. I started seeing a lot of parallels with the sports concussion literature.

As you will hear in this presentation, a lot of the lessons learned in assessing managing sport related concussions, as well as returning to play, have been applied to, in significant numbers, to the military, and how TBIs resulting from last explosion or other injuries have been managed.

I wanted to start out with this slide, which shows the Department of Defense worldwide numbers for traumatic brain injury. You can see that this is current through the second quarter of this fiscal year. This is data that is posted on the defense and veterans brain injury website. It's pretty accessible. There's a four to five page report to describe this. This pie chart gives a nice breakdown of the classifications of traumatic brain injury in the Defense Department. You can see that over 80 percent of all TBIs, back to the year 2000, over 80 percent are classified as mild traumatic brain injuries, also known as concussion, and that the overall incidence of concussions in the past decade and a half is just over 350,000. Not to exclude the other categories of traumatic brain injury, but you can see there, by and large, mild TBIs make up the majority of our service members TBI.

The Defense Department defines a traumatic brain injury according to this definition that you see here on this slide. This is the definition that the assistant secretary of defense for health affairs, the Department of Defense, and the department of Veterans Affairs have all agreed upon. In brief, it says that a traumatic brain injury is a traumatically induced structural injury, and/or physiologic disruption of brain function, result of an external force, and indicated by a new onset, or worsening of at least one of the following clinical signs immediately following the event.

These can be, any period of loss of consciousness or decreased level of consciousness, similar to sport related concussions. Loss of consciousness does not have to exist, for a TBI to be diagnosed, at least a mild TBI. Any loss of memory for events immediately before or after the injury, and any alteration in mental status at the time of the injury, and any neurological deficits, or [inaudible 00:11:05] lesion noted on your imaging technique.

This definition is not specific to mild TBI, but covers the whole spectrum of traumatic brain injury. Also, this classification of TBI severity is also based on Department of Defense and Department of Veterans Affairs agreed-upon criteria. The reason I include this here, even though the focus of today's presentation is on mild, is just to show that the range of TBI in terms of severity ranges from mild to severe. The categories are based on the presence, and/or the duration of immediate injury-induced alteration of consciousness, loss of consciousness, or post traumatic amnesia.

Injury severity is determined at the time of the injury, but the severity level, although it does have some prognostic value, doesn't necessarily reflect the patient's ultimate level of functioning. This classification was recently updated by the Department of Defense in agreement with the services and Veterans Affairs, in April 2015, but the focus of today's talk is going to be on the mild end of this TBI spectrum.

Here's another poll question, dealing with the prevalence of traumatic brain injury. The question is, how what of the following our overall leading causes of mild traumatic brain injury or concussion in the military? We will give a moment for people to answer this one. Looked for a minute there like sports and recreational activity was going to take the lead. It looks like the majority think it is motor vehicle collisions, or the 12 point nine, or now it's 13 point four percent of you who answered falls, the correct answer is falls. This is true, both in a military population, again, DOD data, and also in a civilian population. When you look at data from the Center for disease control, there's a pretty equal mix, or mirroring of civilian causes of traumatic brain injury, as well as of the causes in the Department of Defense.

Here is that slide that shows the incidence of TBI in the Defense Department as a pie chart. Leading causes of traumatic brain injury, as you can see here, falls take the lead with just over 35 percent, followed by

motor vehicle collisions, and then we get into some other categories that are close in prevalence; being struck by objects, so blunt trauma, assaults. Unfortunately, there are so many instances where the precise cause can't be determined, and those injuries end up being coded as unknown cause, or other cause, but this data mirrors, if you take a look at the Center for disease control website under traumatic brain injury, in a similar age group cohort, of about 18 to 35 or 40 years of age. Primary cause of falls in the civilian population, or I'm sorry, primary cause of mild TBI in the civilian population is also falls.

The scope of the problem, blast or explosion injuries account for about 70 plus, up to 80 percent of all diploid traumatic brain injuries. This is where some of the epidemiological data gets a little bit tricky to interpret, because on the previous slide, and in the polling question, we said that the leading cause of TBIs in the military is falls. That's overall. In a deployed environment, by and large, the leading cause of TBI is from blast exposure.

There's a significant difference in blast explosion type injuries, and blunt head trauma, both in terms of the obvious cause of injury, but also in the clinical presentation, and expectations for recovery. Much of this research on blast and explosion injuries has taken place in the past 10 to 15 years, as a result of conflicts overseas, and we've learned that the clinical presentation, as well as the course of recovery, and expectations of recovery are quite different when comparing blasts or explosive injuries to blunt head trauma.

One other statistic that many of you have heard, or read in the literature, is that the majority of mild traumatic brain injuries in the military don't occur in a combat setting. If you go back to that literature, what the literature actually says, the epidemiological data say that approximately 80 percent of all traumatic brain injuries are diagnosed in a noncombat setting. Some of that literature was done here at the defense and veterans brain injury center. The issue is where they are diagnosed rather than where the injury actually occurred. So again, the epidemiological data gets a little bit tricky to interpret sometimes, but the bottom line here in terms of the scope of the problem that numbers of mild traumatic brain injury in active duty service members is significant when compared to previous conflicts, and the management of the resulting signs and symptoms and impairments associated with those mild TBIs is significant, and can have significant negative functional impact on a service member's readiness to return to duty, which is a big portion of what we're going to talk about in today's presentation.

Impact on operational readiness. I'll start out with, there are certainly short-term impacts of concussive symptoms, and how those will present themselves, both to the service member, what they are able to perceive, line leaders, squad leaders, commanders, what they are able to observe, but also what, as a clinician, as a primary care provider seeing these patients for the initial encounter would be able to observe. A lot of the

short-term impacts of concussive symptoms can have an impact on war fighter performance. These three bullet points represent a continuum from the short-term impact to a little bit more of the mid range, longer-term effects on activity levels, and then what the duty limiting barriers are, what the impact on operational safety, and effectiveness of both that service member, and how it impacts the entire unit.

I'm going to start out with ... Slide demonstrates both the typical symptoms following mild traumatic brain injury, ranging anywhere from headache, sleep disturbances, fatigue, all the way down, you could see the bottom of that column, irritability, and mood changes. What's really critical though, and an area that hasn't received a lot of attention until very recently is that, how does this manifest itself, and was the potential impact?

You can see some examples here of impact of any of these symptoms. These aren't meant to perfectly match up, but sleep disturbances may manifest themselves as failure to sleep at night, decreased energy level, slower reaction time, etc. Then, the impact that this could have on war fighter performance can range, these are examples.

Some research has been done, and certainly a lot of room for additional research to further validate these, but examples such as poor marksmanship, decreased ability to perform tasks quickly, especially when under pressure, fear of performing tasks and certain operation requirements. Something that can really have a significant impact on the war fighter, and present a challenge for clinicians, and making proper assessment. Certainly, focusing the assessment just on self-reported symptoms alone has limitations to it. Developing an understanding of what some of the manifestations are, and impacts on performance I think are really the keys to making an appropriate return to duty assessment, as we will elaborate on in more detail.

Those are some of the short-term effects. In terms of impact on safety and operational readiness, there are definitely some published papers out there that provide some good insight into post concussion activity level deficits. Much of this work is based on the reference that you see there. [inaudible 00:20:58] from Article Publishing Physical Therapy Journal in 2013.

Some examples of how these symptoms manifest, and impact post concussion activity level in the active-duty service member may include things like impaired marksmanship, their situational awareness can be degraded, and affected in a negative way. If their primary military occupational specialty or job duty involves radio communications, they may experience difficulty engaging in that. There can be significant deficits in those areas, and the ability to quantify those, and validate those, can present itself as a challenge.

But then, the problem is it's even compounded further. The bigger scope of the problem may be duty limiting barriers, in participating in appropriate training, activities, combat operations, our daily responsibilities of the service member. Again, some examples, certainly not limited to the things that you see on here, but distraction or delayed reaction time; if this is a service member on patrol duty, obviously not something you would want, your reaction time to be impaired in any way, or to be distractible. Degraded telecommunications, [inaudible 00:22:25] readiness and safety. Unsafe, or poorly executed vehicle maneuvering can also be a significant issue. Again, just a couple examples all of which leads to what is down there the last bullet point, potential impact on safety and operational effectiveness can be significantly negatively impaired by a symptom, and how they present themselves. These are real concerns for primary care providers, and other providers in managing these service members.

With that as an introduction, I'm going to move into the second section here, which is evaluating readiness to return to duty, really taking a look at what are some of the current approaches that the Defense Department and Department of Veterans Affairs uses to assess our service members and veterans with TBI and concussions. As a quick overview to this section, I'm going to talk a little bit about the current state of mild TBI assessment in military environments, what's currently known, and what are the guidelines and recommendations for return to duty, and then move into what I think is one of the more interesting pieces of the presentation, which is, how do we apply lessons learned from sports medicine, and sport related concussions into some of this decision-making process in the military, and then in turn, what can the military done with those lessons learned to expand and improve upon our concussion assessment, and recovery approaches? Embedded in there, I will also be mentioning a little bit about some of the challenges of the return to duty decision-making with current methods that are out there.

Starting out first by looking at some of the Department of Defense policy. The Department of Defense instruction 6490 point one one, policy guideline for management of mild traumatic brain injury, or concussion in the deployed setting is really the core document that provides guidance as to concussion prevention, assessment, evaluation, and return to duty guidance. This was first published in 2012, and it's all valid and accurate today in a military environment. Overall, it provides a comprehensive guideline for maximum protection and safety of the service members.

The Department of Defense construction really grew out of experiences in conflicts overseas during operation Iraqi freedom, operation enduring freedom, operation new Dawn, and the realizations of the impact of improvised explosive devices, and service members being at what has, prior to these conflicts, been deemed a safe distance away from a blast, but still affected by the injury, and still experienced symptoms either acutely, or long-term. The DODI 6490 is available online, for those who haven't seen it, although I assume most of our DOD providers have read this many, many times. The guidelines I've described, the mandatory

responsibilities and processes, both for medical personnel, as well as for line leaders and commanders. The main goals of this Department of Defense instruction are to identify, track, and ensure the appropriate evaluation and treatment of service members who sustained concussive injuries. I'll define what the Department of Defense defines as a potentially concussive event coming up on a slider to.

The guideline also requires mandatory medical evaluation and mandates a minimum 24 hour rest. At the time of the event for service members exposed to these potentially concussive events. There was a polling question before defining what a potentially concussive event is, according to this DOD instruction. We will go to another polling question, which of the following criteria are used by the Department of Defense to identify a potentially concussive event? I'll give you a few moments here to answer that one.

Gary McKinney is here telling me it's a trick question. It's actually not a trick question. It's straight from the DOD instructions. We have a well educated audience listening today, it is all of the above. Involvement in a vehicle collision, rollover, or blast, while in a vehicle located within 50 meters of a blast, whether the service member is indoors or outdoors, anyone sustaining a direct blow to the head, regardless of what the cause is, exposure to more than one event, or it can be command directed. The correct response is all of the above. I don't think we had anybody put none of the above, which is great.

This kind of captures, what you see on the left-hand side of the screen there, these are what the Department of Defense instruction considers potentially concussive events, those that I just read off that were part of the polling question. Any one of these indicates the necessity, the requirement according to the instruction referral for medical evaluation, and you will see what the recommendations in the DoDI entail. Also, that initiates a mandatory 24 hour rest. Following that medical evaluation.

Service members involved in any of the following events, whether this occurs during duty hours, this also applies to non-duty hours as well, will receive a mandatory concussion evaluation by a medical provider. Involvement in a vehicle collision or rollover, and a blow to the head during activities, it can include training, and it can include recreational sports activities, combative training, any blunt force to the head, service member within 15 meters of a blast, indoors or outdoors, same rule applies, and it can be command directed, particularly in cases of repeated exposure to traumatic brain injuries, or just at the discretion of the line leader.

This slide pretty much says the same thing up at the top in terms of summarizing those criteria for potentially concussive events, but then below that further elaborates the medical requirements, and one of the line leader expectations according to the guideline. I'm going to start over on the lower right-hand side with the line leader requirements. The

requirements are to check out service members using an approach known as the IED checklist, and then also using, within that IED checklist, the acronym is HEADS.

The IED checklist stands for injury, so was there a mechanism of injury, either observed or reported? The E in the IED checklist stands for evaluation, and that's where the HEADS acronym comes in. It is assessing the service member essentially for self-reported, or observed symptoms of, the H stands for headache, and/or vomiting, E is ear ringing, the A, amnesia or altered consciousness, or loss of consciousness. Hopefully you recall that part of the DOD definition for TBI. The D stands for double vision, and/or dizziness. Either of those may occur. The S in the HEADS acronym stands for something doesn't feel right. Often times that's the complaint of the service member, or related to a sports environment, we would say that, you know, might not admit to any of those other symptoms, headache, ear ringing, etc., but something just doesn't feel right, I don't feel quite myself.

That's the E component of the IED checklist. The D stands for distance, and that goes back to what you see right above that for potentially concussive events within 20, I'm sorry, 50 meters of a blast, and whether that occurred indoors or outdoors. The line requirements are to conduct that. Is not a medical evaluation, it's meant to be a screening that would give an initial documentation and cause for referral, or medical evaluation. You also see underlined requirements it says that service members are evaluated by medical if the answer is yes to any of those three questions on the IED checklist; injury, evaluation, that brief assessment using the HEADS acronym, or distance, are referred to medical, and then that information is then reported in one of the Department of Defense databases that are listed there.

Over to your left hand side, the medical requirements are to utilize the military concussion evaluation, also known as the MACE, for screening for concussions. Document the encounter in the electronic medical record using the appropriate codes, and then also utilizing the concussion management and deployed setting algorithm, all of which I will refer to in the next couple of slides.

Again, guidance from the Department of Defense, instruction 6490 point one one, all service members involved in a potentially concussive event must receive a medical evaluation by a medical or healthcare provider soon after the event, but not later than 12 hours. The language in the DODI actually says that this can be delayed based on command discretion, and what the service member's mission requirements are at the time of the injury. Then, medical personnel will evaluate the soldier using the concussion management [inaudible 00:33:18] algorithm, which is part of the objective of this presentation, to show what some of the current assessment guidelines are.

Moving on to the concussion management algorithms. There are really two sets of algorithms, both concussion management in the deployed setting, and concussion management in non-deployed settings. In the deployed setting, this guide is available from the defense centers of excellence, and defense and veterans brain injury Center. We collectively refer to this as our concussion management algorithm, or CMA. It's a tool for all levels of providers in the assessment evaluation, and actually includes a treatment management component, so it's an excellent resource. It was updated in 2014 by subject matter experts at all branches of the military. Their TBI program offices, and changes reflect the most current scientific evidence for all components, prevention, assessment, and treatment.

This is the section referring to the concussion management algorithms, in looking at the deployed versus the non-deployed, or garrison setting algorithms. The key algorithm directives that I would really encourage you, for those of you who are not familiar with the concussion management in a deployed setting guidelines, to go to our DVBIC website under resources, and search for that. The components of it are a combat medic or corpsman algorithm, whoever the initial provider of upon referral from a medic or corpsman whoever the initial provider if they have an algorithm, and then there's a comprehensive impression evaluation algorithm, and guidelines for how to manage recurrent concussions.

These are the key points that you see listed here, personnel are required to use the algorithm to assess and treat concussions in the deployed setting. This is actually mandated by DODI 6490 point one one. Mandatory event driven protocols for any service member exposed to a potentially concussive event that we just went over requires medical evaluation immediately, assigning the service member to a minimum 24 hour rest period, which again, corresponds to the lessons learned in a sports environment. All sports activities with the risk of concussion are prohibited until that service member has that 24 hour rest period, and then is medically cleared.

Now, the concussion management algorithm in a deployed setting also mandates the use of the military concussion evaluation, which the image is here on your screen, just off-center to the left. The MACE can also be downloaded from the DVBIC website, for those who are not familiar with it. Service members who are diagnosed with a concussion after going through this concussion management algorithm decision process have to be given the acute concussion education brochure, which you also see here on the screen, also available for download from our website at DVBIC. Then, the specific protocols for anyone sustaining a second concussion within a 12 month period are also outlined in this concussion management algorithm directive.

That all covers concussions in a deployed setting, concussion management in the Garrison setting, this is more service specific. This example of that is here on your screen is based on the Army's concussion

management in a garrison setting. The Navy has a similar guideline which mirrors this Army guideline based on headquarters Department of the Army objective order that you see listed here, if you want to go back and reference that. But, in a similar manner to the concussion management in a deployed setting, garrison setting mirrors that policy. It is evidence-based, there is a mandatory 24 hour recovery period, mandatory medical evaluation, and then guidance for specialized evaluation if this is a second injury, or in the case of many of our service members in a combat environment, those who have been exposed to multiple blasts, or multiple other mechanisms of injury.

To round up this section, having talked about the current state of [inaudible 00:38:15] assessment and what are some of the return to duty criteria using the military environment is the focus on this last piece, what are some of the recurrent, I'm sorry, what are some of the current rather return to duty decision criteria that they military uses. Again, this very much mirrors the return to play decision-making criteria that are familiar to many sports medicine professionals; symptoms of neurocognitive impairment and balance impairment.

By means of another polling question, before I get into a little bit on the specifics of this, the polling question is, which of the following clinical assessments do you predominantly used in whatever your practice setting is? Whether you are a DOD provider, or a civilian provider, not DOD provider, in making the return to activity, whether it's return to duty, or return to sports decision.

I know many of you, looking at the list, say, Gary, this would be the appropriate to say this is a trick question, because it partially is. Many of you use a combination of those measures, but which one do you predominantly rely on is what this question is alluding to. It looks like we've got either the neurobehavioral symptom inventory or some other symptoms scale, and there are many symptom scales out there, or neurocognitive assessment battery actually looks like it's got the lead. Examples including the ANAM or NCAT.

Okay, so thank you for those who voted, and provided your response to that. It is somewhat of a trick question, because there is no right answer to it. Hopefully, if you were given the choice of accommodation of those measures, that that's the response, because that also mirrors the sports management approach.

So, [inaudible 00:40:29] return to duty decision-making in the military does follow the foundations of lessons learned in managing sport related concussions, in large part based on self-reported symptoms. The neurobehavioral symptom inventory is one that is predominantly used in the Department of Defense. Self-reported symptoms can never go away as a measure. There has certainly been a lot of discussion in the sports medicine literature on sports concussion assessment, as well as in the military literature on not relying on self-reported symptoms. Truthfully, it

will always be an important component of the concussion assessment, but should always occur in combination with more objective measures.

Neurocognitive assessment batteries, these have been prevalent in sports community, I would say, up until the past five years, or maybe even a little bit more, where interest in those has weaned in large part due to lack of normative data, and some of the challenges of logistics of obtaining baseline data, and accurate comparison of pretest, post test scores. Again, we've learned through some of the sports medicine approaches, and sports medicine literature, what are some of the same challenges in the military environment, and although there are tools out there that DOD providers use, such as ANAM, and NCAT, the reliance on those and the only objective measure is not quite as an important cornerstone of concussion management as it had been 10 or 15 years ago, because neurocognitive assessment batteries do have some limitations to them.

Balance and [inaudible 00:42:32] assessments are also important component of concussion assessment in return to duty decision-making, as the technology for these is not always available clinically in all practice settings, and certainly in a field environment. I've never seen a narrow, system set up on the front lines to assess balance. It's just not practical, so there are some limitations, both in terms of the test feasibility, and the cost of the assessments, but some similar limitations that providers experience with self-reported symptoms, and neurocognitive assessment batteries, in terms of establishing a baseline, [inaudible 00:43:11] appropriate measure of change following a concussive injury, or potentially concussive event indicate that the service member has been concussed.

The point here that I'm trying to make in terms of what the Defense Department uses in return to duty decision-making mirrors what lessons have been learned from sports medicine, and assess saying and appropriately managing sport related concussion, and has some of the same limitations and challenges to it.

Applications to sports concussion models, on the right-hand side, I list some of the more present the land assessment techniques that are currently out there, that have been published in literature. There's a number of well published guidelines that are available, promoting cognitive rest and physical rest, newer guidelines coming out recommending exercise in moderation, recommendations for when to resume activity, and how that should occur in a stepwise manner. These guidelines include symptoms and impairment based testing paradigms. Again, probably for civilians, for athletic related injuries, but they certainly do have application to the military.

An area that's been receiving quite a bit of attention in the military are functional return to duty assessments, and tasks, which is what I will get into a little bit more specifically, but I listed below that some of the

challenges are the psychometric, and practical issues associated with a return to duty assessment. Then, what we do when the service members should exhibit a persistent post concussion symptoms behind the typical recovery time frame. Many of our service members are experiencing co-occurring conditions, and not just their mild traumatic brain injury. That has a significant factor in the assessment and management. Then, the exposure to multiple mechanisms of injury, and multiple concussions that the service members often experience.

Without getting into a lot of detail, I did want to highlight a couple functional return to duty assessment tests that are out there. Some of these place an emphasis on exertional testing, and measuring cardiovascular response to that. There are some good measures that incorporate a two-minute return to duty exertion test, with some examples given there. [inaudible 00:45:45], things that really attempt to objectively quantify the cardiovascular response to these assessments, as well as scenario-based return to duty programs. These are the ones that really I think are a great interest, and have great application in a variety of military settings, and military occupational specialties.

[inaudible 00:46:11], I want to refer to as the assessment of military multitasking performance, with the reference there that you can go back to [inaudible 00:46:22] In an article published in 2013, provide detail on this, as does a primary reference that I will indicate at the end, by [inaudible 00:46:32], also published in 2013. The AMMP is really an exciting test battery that military providers should consider using, because it integrates dual tasking and multitask assessment paradigms that are relevant to military functional specific tasks. It also permits the individualized selection of appropriate and individualized tasks for that service member, based on their occupational specialty, and whether they are in a combat, or training type of environment.

Here is just a brief list of some of the components. For the second time, I'm not going to go through all the details that are on the AMMP, but we would refer you to the Radomski article, and the Sheer article for more details on these subtasks of the AMMP. Those are both some great resources and great reads.

We're handing things over to Jay, just to reiterate this type of tool, the AMMP is a good tool, has not been widely tested and validated in a military environment, so it's still in its preliminary stages of assessing its basic validity, and test and retest validity reliability measures to it. It prevents some challenges, as well as some of the other issues I mentioned with persistent symptom, long-term symptoms, and history of multiple concussions that many of our service members experience.

The athletic trainer plays a unique role in this whole process of return to duty assessment. I'm going to turn things over to Jay, who is going to talk a little bit more about the unique role of the certified athletic trainer. Both

the background of the athletic trainer, as well as their role in concussion prevention and management. Jay, over to you.

Mr. Sedory:

Thank you, Scott. I appreciate the introduction there. First of all, disclosures. As far as [inaudible 00:48:40], I don't have any financial interests, or any financial relationships to disclose, so now let's just go ahead and keep moving on.

Let's talk a little bit about the athletic trainers in general. You know, in the healthcare, and generally concussions, we understand that there's a multidisciplinary approach to treatment. I think one of the things that I think about is, there are two variable groups that are usually sustaining concussions. Number one, the military members, and number two are sport athletes. Both populations very physically active, have specific skill requirements in duties they have to perform. Sometimes, you're very self-motivated, almost to a fault. In the civilian sector, the athletic trainer is often providing services to athletes in high schools and universities, and kind of serve into the front line. I think there's plenty of opportunity for athletic trainers to get involved in the military setting, and unfortunately, not widely known, so I think there's room for the athletic trainer, and the concussion team, and I'll talk a little bit about from my experiences working for the Marines and also kind of in the sports world as well.

[inaudible 00:49:57] to the athletic trainer, as far as the health care provider. One thing I think is very unique is that we are visible in the field, in the clinic, in the classroom, and everywhere in between. We're kind of everywhere, and we don't really have those same barriers sometime. I understand there's a lot of limitations on healthcare providers to do a certain amount of encounters, and a certain amount of notes, and RVUs. In our setting, and our [inaudible 00:50:21], we kind of are free from doing that. One night I can be out with a 15 mile hike [inaudible 00:50:29], the next day I could be in the clinic, and then later that same afternoon I could be teaching a class on injury prevention, or concussions.

I talk a lot about concussions during this part, [inaudible 00:50:40] are involved in a lot of parts of sports medicine, and musculoskeletal injuries as well, and how they kind of, funny enough, they kind of go hand-in-hand as a result, so I think it's a good time to talk about concussions and their role. First of all, what is an athletic trainer, and what are they. Number one, they are a healthcare provider. One of the things that attracted me to the profession of athletic training is that we are, you know, from start to end, you know, like the emergency part, I've seen the traumatic injury of falling off a rope going through a rehabilitation postoperative getting back to duty.

A little bit more about kind of education experience though. Right now, the entry level is a bachelors, and taking a certification test, and that's going to move to a Masters at the minimum requirements by 2022, and there's also a doctorate in athletic training as well. [inaudible 00:51:39] that I saw was about 86 percent of athletic trainers have their Masters degree.

I've talked about the traditional setting. One of the things I'll pull the students as they come on base, I'll say, how have you worked with an athletic trainer at high school and in college, and the longer that I've been there, the more hands that I see raised. People are kind of having access to the athletic trainers out in their sports careers, in high school and/or college.

In the nontraditional settings, we'll find athletic trainers at mostly entry-level training facilities, find them in special forces. My wife worked for Disney with the characters, so athletic trainers are in multiple settings within the military, and outside the military and the workforce.

So [inaudible 00:52:25] athletes, [inaudible 00:52:27] athletes, whatever you want to call it, we've seen the use of that term towards the service members more and more. I'm sure you've seen that term, strength and conditioning, the physical abilities, and kind of treating them as their own team. While I look at combat readiness, and I asked the corpsman this this morning, and I said what his combat readiness? He was very simple, and he nailed the hammer on the head. He described the expect of wellness, and making sure that they are ready to go, ready for combat. You know, it's more than just making sure [inaudible 00:52:58] are complete, and [inaudible 00:52:59] are complete. We talked about looking in the member's eyes, in his unit, and talked about seeing how are they doing for the day. While it's hard to do for, you know, 500, 1000 service members in a unit sometimes, he really understood that, So hats off to him to kind of identify that.

So from my perspective, I think about, you know, physical readiness and function, you know, pregame, field time, to post game. [inaudible 00:53:31] processing for the new company on deck, and that's just certainly verifying patterns. Sometimes identifying pre-existing risk factors as a result. You kind of provide corrective exercise, or changes to the lifestyle and habits. You know, also looking at the [inaudible 00:53:48] education on wellness and conditioning. During training, there's plenty of opportunities for [inaudible 00:53:57] injuries occur. You know, hopefully these athletes are getting their care sooner than later. [inaudible 00:54:02] happens as time goes on if they are not properly addressed routine care, whether it be concussions or other injuries.

There's a set of standards that all personnel must complete, whether it be [inaudible 00:54:16], combat tasks, fitness tasks, [inaudible 00:54:18] specific tests. As the athletic trainer, you know, I look at that as my baseball team. You know, everybody needs to be strong, fast, agile, but they all have different skills and abilities, and some of those require different things. While I think that one of the strengths of an athletic trainer is to look at those job skills and duties, kind of re-create them safely in an environment, and testing those, and understanding what [inaudible 00:54:47] duties are, and making appropriate recommendations, and also thinking outside the box in what they need to do in order to be ready as a tactical athlete.

[inaudible 00:54:56] has a close relation to an outpatient physician, athletic director, coaches, and parents, and I think we as a profession do a good job doing that in a military setting, with the company commanders, with the corpsman, with the providers, with all groups, so we can all be on the same page.

In this next slide, you know, just to show how athletic trainers are, this is the best members that I have at this time. Is about 200 athletic trainers across the DOD. I realize that that's not a lot. As you can see, they're mostly at major installations. Compared to other customers, as I said before, depending on your ed, you might have access to an athletic trainer, while high schools and colleges might be another resource for athletic trainers, but I find that their more athletic trainers coming every single year, and that's very promising for athletes to have those services.

Now, talking about prevention, and this is primarily where you used at our setting. Athletic trainers are [inaudible 00:56:06] prevention aspect. It's just risk management, right? Identifying those risks, making plans for changes, you know, reviewing those changes as they are occurring. Whether it be, for example, the top picture of thinking about that helmet, those lacrosse helmets. Whether it be combative, or mat training, one of the things that we want to do to ensure those helmets are fitting appropriately. Maybe they're doing something dangerous, maybe they shouldn't be doing had strikes, and say, hey, let's look at this drill, let's look at this event, because we are on the sidelines, we are out on the field, seeing how training is going, and effectively.

When it comes to prevention, I think the military prompt relation is very good at having a plan ready and available. You know, what happens when X, Y, or Z. One of the things I think we could do better on, on the front lines of the field, is actually practicing that. I'll take something that's very common to a lot of us is like doing things like heat exhaustion, or [inaudible 00:57:02] training. We make sure that we get them from point a to the heat [inaudible 00:57:05] within 30 minutes.

One of the things I think we could do better on when it comes to concussions is, we have to get them from that point of injury, where they fall off the rope, or get off a certain obstacle and hurt themselves, stabilizing them appropriately, and then we are referring them to the hospital or the clinic in a safe manner, so there's no time and motions wasted.

Also, one of the advantages, and one of the [inaudible 00:57:30] kind of brings to the table is [inaudible 00:57:31] and removal. The athletic trainers really get up looking at helmets, pads, learn how to remove them appropriately on the field. I can remember my very early experience in training was having to spine board somebody on a basketball court, with everybody from the student body looking down at you, making sure you're doing everything right. Removing equipment is something that I think is

really helpful, that may be overlooked by our trainers, and those that are running instruction on the field.

Of course, those facilitations on the baseline, getting the beginning briefs, making sure that we are bringing people on at certain times, whether it be the SAC assessment, or ANAM, or [inaudible 00:58:12]. With those results, help them answer questions to go through that as well. I think one of the biggest parts that we are able to make [inaudible 00:58:22] is establishing education for the staff and students.

One of the changes that I can remember at an early on in my career is, you know, there is been a lot of quick training as I call it, going through power points, going through it, and checking the box, [inaudible 00:58:37], and everybody that's on the roster, but I'm much more of a person that likes to make sure that I can look somebody in the face, and talk to them about the issues that we have at that period of time. During safety training, you know, you usually get the small staff that's in charge, you know, that group, and talk to them about concussions, and get them up-to-date information, and give them examples of things that we could do better as well.

Also, the thing about our front-line people, like our corpsman, or [inaudible 00:59:05] that are out there, they have a lot of responsibility as a frontline healthcare provider. You know, sometimes, they don't really get the ability to retrain in different ways when it comes to concussion, so I think, as an athletic trainer, we do a lot of training with them. I think the last corpsman that I remember talking to, he came from labor and delivery, and he has some history of health in that sports medicine aspect, so I think there's a lot of help that we can do there.

[inaudible 00:59:35], This is kind of an interest of mine, is you know, emergency evaluation. We think concussion, we have a diagnosis, but sometimes you have to get to that diagnosis. Sometimes it's, you know, seems to be having stabilized and injury, or something. You know, whether it be a skull fracture, or low back pain as a result. [inaudible 00:59:53] of course, checking in high schools is another resource, another person to see how training is going.

There is always the clinical reaction. Sometimes, people are coming the next day from [inaudible 01:00:04], saying, you know, I slipped and hit my head last night, I've been having problems, I woke up this morning, I had a huge headache. Sometimes they will come into the clinic as a result, where they will get their evaluation through us as well.

Now, management. When it comes to management, we are lucky [inaudible 01:00:22] education to that daily management. So after they see the sports medicine physician, or the primary care provider, we are usually doing the daily interaction with the patient, and daily symptoms review, getting them there, having a lot of fun [inaudible 01:00:36], and just putting all of the notes and everything in their, and having the

physician do the cosigns, but at the end of the day, we are able to communicate with the patient, to the primary care providers, and also, you know, to construct their staff. Because we are in all of those different arenas, we can give really good specific recommendations to the staff [inaudible 01:00:54] those updates of saying, hey you know, Sergeant so-and-so probably shouldn't be in the classroom today, or he could do at least certain exercises, but maybe not these ones as well.

We do have a lot of opportunity for management as well, and take the load off of, sometimes, the primary care managers, and we have the facility. You know, if they slip, and they twist their ankle as they fell, we can take care of that ankle injury, the shoulder injury, and their concussion all in kind of the same area as a result as well.

Scott's going to go on a little bit more about the six step program, in kind of the restrictions and training schedule for the management, but when I look at the return to duty miles and foundation is that there is [inaudible 01:01:30], I kind of separate those out. [inaudible 01:01:33] I think there's advantages to it. Number one, I know there are standards. With hiking, sprinting, pull-ups, whatever it may be, I know there are certain standards that I can go off of. I can look at old scores, I can kind of understand where they're at.

Then, there's more complicated things, like battle drills. These are a little bit harder, because there is not set standards, or valid measures right now, but nonetheless, I can start putting two or three tasks, Together and make sure that their functioning well in different areas, and different levels.

Now, environmental factors, certainly there is a dangerous environment. The idea of working with entry-level trainers that you can [inaudible 01:02:09] as well. So, whether [inaudible 01:02:12] have been dropped, recycled, whatever is being called at your [inaudible 01:02:15], there is certainly a lot of stress. Stress of failing, stress of not being part of a unit, we all know that plays a part of this concussion.

Also, [inaudible 01:02:26] operation of sleep deprivation. Where there's a lot of fatigue, there's a lot of things that are going on in the field, and sometimes it's really hard to separate those things. [inaudible 01:02:34] your symptom management, and you are talking to them in the field, or outside of the field. Many times, they like to run in the extreme heat in the summer. You know, just really dehydration, and sometimes that's all it was. You know, the nausea, the symptoms, the headaches. You know, maybe it's three weeks after their post concussion, But nonetheless, you know, we want to make sure, and check, and see how they're doing, So we need to talk to them through that as well.

Same thing with the environment of extreme altitude, cardiovascular function, it's just really having the ability to talk to the patients and ensure that you can kind of separate some of these things. Sometimes we are on

the side of caution. We bring them back into the clinic, we are able to kind of sit and kind of stabilize them for a little bit, and realize, hey, all it was was a little bit of altitude sickness, all it was was it just a little bit of adjustment period, and not really truly a concussion, which, you know, [inaudible 01:03:25] due diligence at that point in time.

[inaudible 01:03:30] to the patient's. Sometimes, as they come in, and self reporting, I might be documenting their first concussion, despite being their second or third command. So, as I talked to them, I tell them what a concussion is, and look at what they had before. Sometimes, I am documenting the concussions history. [inaudible 01:03:45] sometimes, when that does have a part to play in where they are at in their return, and how cautious they are moving forward, and potentially, what does that mean for the rest of their career.

As far as IT technical tactical proficiency, that academic part, understanding, you know, we'll always know where they are at, we don't always know what the [inaudible 01:04:05] was before, and we don't always know what their academic understanding was before they come. Certainly work with that during session to help us. If there is some changes in that as a result, hopefully those are not lagging some things that we missed, but certainly those that we talked to as well.

So, [inaudible 01:04:23], I think that's really important when it comes to either ACL, or a concussion, is are they ready, are they confident? You know, I think we've all seen athletes coming back from an ACL injury, and they are little hesitant, they are not as fast, they're not as bold as going in, and we want to make sure that our athletes are bold, and they have erected confidence before they get back to training. So Scott, I'll turn it back over to you to talk about the actual trend activity part for the mild TBI.

Dr. Livingston:

Okay, thank you Jay. The very last part, I'm going to go through rather quickly, and get to this section to build upon what Jay had mentioned about the unique pool of the athletic trainer, and ties some of these concepts together that we have been presenting today, both interns of the return to duty assessment, but also what that stepwise approach should be.

Concept here is, go back one slide, here we go. For us, returned to activity clinical recommendation that was developed by defense and veterans brain injury Center, Working with our TBI programs in each of the armed services, the return to activity clinical recommendation can be found up on our DCEO defense and veterans brain injury website, under clinical pools.

In a nutshell, it provides clear guidance in progressing activity, and how to progress return of service member to activity. Separate products exist in this clinical explanation if you're a primary care provider, versus if you are a rehabilitation manager. The intent of the return to activity, why this was

developed was really to build off of lessons learned in sports concussion management on a stepwise approach to return to activity, and to make it a little bit more standardized, adding a couple of elements to it to make it DOD specific, and applicable to service members, whether in a deployed setting, or Garrison setting.

The return to activity specifically alludes to mild traumatic brain injury, or concussion. It is, again, geared towards guidance for primary care providers at the initial clinic contact, as well as for rehab providers, or service members experiencing persistent symptoms. I'll show you a few slides here momentarily that shows various stages of progressions. Unique features about this standardized approach is that it includes progression, guidelines according to three domains, physical, cognitive, as well as balance and vestibular. It also provides guidelines related to alcohol, and tobacco use, which could negatively impair the healing process, the resolution of concussive impairments, and it's in line with Department of Defense guidance, so it doesn't begin until the 24 hour mandatory of rest is completed, and is based not only on subjective measures of self-reported symptoms, but also on objective measures of cardiovascular response to activity.

Real quick, I want to also mention that, for those who are interested in taking a closer look at the progressive return to activity materials from our website, it does differentiate between if this is a service member's first concussion, as well as if it's a second concussion in the past 12 months, or if it's two or more, so it addresses lessons learned from multiple concussion management in a sports environment.

Again, the return to activity, or PRE protocol measures three different domains. The goals on the part of the defense department in trading this was to be more specific than many of the sports return to play guidelines are. This includes both physical and cognitive progressions, but then adds the vestibular balance progression which is, as I alluded to earlier, a key component of the overall concussion assessment.

These are the six stages. Again, very comparable if you look at some of the sports concussion consensus guidelines, and recommendations that are in those, with the caveat that service members that progressed to successive stages of the progression. If there experiencing symptoms, as measured on the neurobehavioral symptom inventory, or experiencing any new symptoms, as well as any adverse cardiovascular responses to the activity.

Really, the key takeaways from this return to activity approaches are based on recent evidence showing that prolonged rest is not recommended, and in fact, early monitored activity is. That progressive return to activity will provide a structured protocol, rather than arbitrary, you know, every day you get to rest a little bit more, as long as your symptoms aren't worse. This puts it in a more objective context.

Also, that the recommendations are based on concussion history, is it first, second, or multiple, and differentiates between one, as a primary provider, what type of recommendations to give the patient, versus if you are a rehabilitation provider, providing some more detailed information.

I'm going to go through the next series of slides rather quickly. Not to read the information to you, but just to show you the level of detail that the progressive return to activity clinical recommendation has. For each stage, it provides the objective of that stage, what activities can be performed, what are the guidelines for rest, and what are the guidelines for advancing, or progressing that service member to the next stage.

That was stage one, rest. Stage two, light routine activity, and specifying what the objective is provides measurable time intervals, as well as specific recommendations for what types of physical cognitive activities can be performed, versus what the service member should be instructed not to perform. Same thing here for stage three. We have light occupation oriented activities. One of the nice features about the PRA recommendation for rehabilitation providers is each of these stages is available as a tear off sheet to review with the patient, and document on the reverse side of it their neurobehavioral sense and inventory scores.

So stage three. Stage four, getting into moderate activity. Again, same approach. What is the objective of the stage, what are the recommendations for physical cognitive and balance activities, what specific things should be avoided. Moving on to stage five, with intense activity, and then finally, to stage six, the resumption of unrestricted activity.

The progressive return to activity in and of itself is a completely separate webinar. I strongly encourage you to go to our DVBIC website, resources, clinical tools to take a look at this. I just want to emphasize what it says here at the bottom of the slide, that each day relaxed minimum 24 hours, specifies what activities are permitted, in large part based on the neurobehavioral symptom inventory for symptom monitoring, but does have guidance for if this is a service member's first concussion, or have they experienced a subsequent concussion in the last 12 months. The guidelines here are for a longer period of rest, five additional days, with referral for more specialty level care as indicated.

Basically, this is the same thing is the criteria that apply. I think this is where the defense veterans brain injury center built sports concussion literature, adding some of the evidence that has come out from Doctor William Leddy, and his group at the University of Buffalo, in adult and cardiovascular responses. Jay and I had a conversation, about a month ago, in preparing for today's webinar, on how frequently athletic trainers are measuring resting blood pressure, resting heart rate, and utilizing those as a physiologic objective measure, but that's exactly what the progressive return to activity protocol is recommending.

Again, guidance provided in there. If there three or more concussions within the past 12 months, does necessitate referral for a higher level of care, and a little bit more complex management. Were going to skip that polling question for the sake of time, because we do want to get to some Q&A. Again, the progressive return to activity the clinical recommendation is a two-part recommendation, both for primary care providers, and for rehabilitation providers. It can be accessed on our website, downloaded for free. It can be ordered in single copies, or multiple copies for free as well, so we certainly encourage you to take a look at that, for more detailed information on how the systematic review of the literature was conducted, and the guidelines were developed.

In summary, for our presentation today, concussion certainly is a common injury affecting service members, whether it's diagnosed in a garrison setting, or in a combat setting, and regardless of the cause of injury, it's a complex problem, it's a common problem. Even with combat operations overseas ceasing, the incidence of concussion still remains a concern from training related incidents, in combative and sports and recreational activities. Concussions do have significant potential impact on the war fighter's performance, safety, and operational readiness, which are our critical concern of providers of all disciplines. The athletic trainer plays a unique role in this return to duty assessment, and management process, and that next year revised approach for progressive return to activity does exist. It was built in large part off of the sports concussion literature, and has been expanded to make it a more objective tool for providers to be able to use.

Lastly, before I hand things back over to Gary McKinney, our moderator, we included a reference list, but I do want to point out two references specifically out here that I would strongly encourage those who are interested to learn more on the topic. The Radomski reference, Doctor Mary Radomski's article, published in Military Medicine 2013 provides quite a bit more detail on the AMMP measure, and what its components are, and some of their initial work to validate that as a return to duty assessment tool. Then I also wanted to highlight, on this slide, the Sheer, doctor Max Scheer's article, also from 2013, returning service members to duty following mild TBI, which a large portion of the content of today's presentation was based on that article. Excellent article, provided a lot of detailed information. My contact information, and Jay Sedory's contact information is here on this slide, but I'm going to turn things back over to Gary McKinney, I think we do have some time for some Q&A.

Mr. McKinney:

Thank you, Doctor Livingston. Thank you, Doctor Livingston, and Mister Sedory for your presentations. I'd like to remind the audience that if you have any questions for our presenters, please submit them now via the Q&A pod located on your screen. It's now time to answer some questions from the audience. If you have not already done so, submit your questions being the question pod located on your screen. We did receive a lot of questions, so I'm going to start by asking, let's see ... This one's

for Doctor Livingston, would you please provide examples of not classifiable brain injuries?

Dr. Livingston: Good question. Am I understanding, at least from an ICD10 coding perspective, and some of the challenges that providers face in accurately coding traumatic brain injuries, these are either the codes for cause of injury, or utilizing the correct codes for severity of injury. It's not so much a problem of providers not necessarily making a wrong decision, and saying, I'm going to take the easy way out, and just put these as a non-classifiable. In many instances, the information is not there for them to appropriately determine what the nature, severity, or exact cause of injury are. A lot of the issue, hopefully, has been addressed.

We are still learning what the effect of switching from ICD9 to ICD10 coding has had on accurately capturing that data within the DOD, but I think that's probably the most significant improvement, is the refinements made to the ICD coding to make it easier for providers to appropriately identify the cause and severity of injury, without having to guess, or default to an unspecified category. Unspecified basically is just that. There's no subcategories to it, it's unspecified because we didn't have enough data to inform a decision on what the proper code would have been to use.

Mr. McKinney: Okay, thank you. Jay, I'm going to ask you, I'm going to combine two questions. First part, are AT appointments documented [inaudible 01:19:39]? The second part is, what interactions do the ATs that are currently located at those sites have with medics and corpsmen? Do they provide training, or advice to the medics on site?

Mr. Sedory: The simple answer to the first question, are AT appointments documented, and I would say yes. In our clinic, if they come into our clinic, and their hands on for anything, whether it be [inaudible 01:20:09] syndrome, or concussion, absolutely. Those are documented. Also, some of my best conversations in training is actually out in the field. If somebody is coming for advice with stretching, or [inaudible 01:20:22], typically not documented, but as far as interaction with the medics Emporium, that's one of my favorite parts of the job. The interaction sometimes comes from [inaudible 01:20:36] that they check-in, they will get to another area of all the clinics, and the providers, and there actually might be a one-week immersion project with us, where they will [inaudible 01:20:45], help us kind of [inaudible 01:20:48] with the sports medicine part is, teach us some taping and some bracing, [inaudible 01:20:53], and bracing techniques. I think that's really positive, and I think that's really good.

Also, in the field, there's a lot of downtime [inaudible 01:21:02] the field exercise, and just kind of waiting around, so I think it's up to the actual trainer to actually go out there and engage them in conversation, and see how they're doing, and how can they help them, and really try to mentor them. I know that word is thrown around a lot, but if we take the lead, Be

there as their safety net, walk them through, take a complicated case, walk them through it, and understand that, hey, [inaudible 01:21:28] diagnosis of, you know, this injury, or this treatment that we are going forward with.

Mr. McKinney: Okay, thank you. I want to kind of focus in on this question. This is from chaplains. As a chaplain, how can I generate an informational training for the service members from this unique webinar? Is it recommendable, or do I need more training to do so? Doctor Livingston?

Dr. Livingston: It's a great question, and I certainly appreciate the chaplains out there who are not only [inaudible 01:22:07] the webinar for this information, but also interacting with our service members who [inaudible 01:22:16]. This is something that is absolutely in alignment with DVBIC's mission, and our role in the education division. Certainly you can reach out to me, we can provide you with not only resources to conduct the training, but we can conduct the training, or help to facilitate that in any way possible, either virtually, as with what we're doing today, with the [inaudible 01:22:45] mechanism, or even face-to-face.

Our defense and veterans brain injury Center has a network of 18 sites, 17 of those around the United States, and one in Germany, the Landstuhl regional medical center, and we have DVBIC personnel on the ground at each of the sites, clinicians, regional education coordinators, recovery sports specialists, all of whom can be part of this process of providing the training. So absolutely it's something that we can do, just I would say reach out to me directly, and I can provide you more information about what types of training materials we have, and how we might be able to assist in you doing that, hopefully wherever you are.

Mr. McKinney: All right, thank you. This next question I think is going to capture a couple of the similar questions. Our biggest challenge is with the patients with cognitive issues, such as [inaudible 01:23:47] professors at University. Any suggestions on their return to duty, highly cognitive duty, and we had a few other questions along that line. I'll give that one to you again, and then the next one I'm going to give to Jay, after Doctor Livingston.

Dr. Livingston: I would say, in response to that issue with the cognitive deficits, and then also the challenge of assessment and monitoring, that's where the provisional return to activity clinical recommendation, if you look on our website, or even if you, for people who [inaudible 01:24:25] question were to contact me by email, I would be glad to send you, it's the rehabilitation provider traditional return to activity that provides much more specific guidance on the cognitive activities that are permitted, and those should be restricted at each stage of the return to duty progression.

As I mentioned in the presentation, this really builds off of the lessons learned in sports concussion management. You can't just tell a service member, go cognitively rest. You know, what is actually mean? What activities can I do, can't I do? When I am given permission to do some

cognitive activities, how long should I do them for? Can I expect to be symptomatic at all after engaging in cognitive activity? So, that rehabilitation provider PRA clinical of recommendation, I know I went through those stages of six stages pretty quickly, but that does specify, in pretty [inaudible 01:25:31] detail, and provides examples of exactly what type of cognitive activities are included, and how those can be appropriately progressed over time. I think that's probably the best approach, is to refer back to that guideline, and be able to follow some of those instructions specifically.

Mr. McKinney: Thank you. This next question I think will be for both of you. From the provider, and also the AT standpoint on the ground, as a corpsman, I found it very difficult to get service members to report the severity of their injuries in regards to possible concussions when I was deployed to Afghanistan. How do you get the patient to be more forthcoming with the information so I can accurately document it?

Mr. Sedory: I'll tackle that one first, and do my best to answer that question. It's a great question, and in fact, those are the hard thing to do, and I can only tell you from experience what I try to do is the daily interaction and the training, [inaudible 01:26:38], being out there part of it is [inaudible 01:26:44] come forward. [inaudible 01:26:48] some of the benefits of being a civilian provider that I've been there for such a long time, and I've been able to establish a reputation of the clinics in our system to get people better.

Essentially, they will see themselves and their colleagues, and their [inaudible 01:27:04] better. We've established that trust over a long period of time to know that, you know, if they want to get better and graduate, they are going to see the staff. As a corpsman, to get them to document and do that appropriately, that's a hard thing to do. As long as you are out there, in front of your [inaudible 01:27:26], and in front of your providers, trying to tell them the detrimental effects that could happen, and how you are going to help them. I think that's the best that you can do. Scott, do you have any input on that as well?

Dr. Livingston: The only thing that I would add is, service members across most of the branches of the Armed Forces are required to have [inaudible 01:27:50] training on traumatic brain injury, what it is, the possible effects of it. I think that's the education training is a big component to it, granted I set are those classes as an active duty service member, and you know, some of it sinks in, some of it doesn't, but I think the education training is a key component. Then, as Jay said, for medics and corpsmen, and athletic trainers really have a relationship with the service member that is, you know ...

The primary care providers sees them, you know, once or twice a year, the rehabilitation provider money see them more often, based on the nature of their injury, but it's the medics, and the corpsman, and the trainers who see them most frequently, and can stress the importance of

the impact a concussion can have on, not only their own performance, but I think most service members would agree that ... If you say, by not reporting your injury, by not being truthful about your symptoms so that we can determine the severity of it, you are negatively impacting the operation readiness and safety of your unit. For most service members, I think that would resonate quite a bit, and get them to do an about-face, and appropriately be truthful, honest about their symptom reporting.

Mr. McKinney: Thank you. I'd like to apologize to everyone that we didn't get to. We are unfortunately out of time at this point, but we will ... Just letting you know, there were a larger list of questions that came in that we weren't able to get to, so I apologize. After the webinar, 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 CE evaluation will be open until Thursday, December 22, 2016. Also, to help us improve future webinars, we encourage you to complete the feedback tool that will open in a separate browser on your computer. You may download today's presentation from the files pod on the screen, or at the DVbic website, dvbic.dcoe.mil/training-events.

An audio recording, and edited transcript of the closed captioning will be posted in the link in approximately a week. The chat function will remain open for an additional 10 minutes after the conclusion of the webinar, to permit attendees to continue to network with each other. The next DCOE TBI webinar, Traumatic Brain Injury and Substance Use: This is Your Injured Brain on Drugs and Alcohol, is scheduled for January 12, 2017, 1:00 to 2:30.

The next DCOE psychological health webinar, Evidence Based Management of Suicide Risk Behavior, A Guideline Perspective, is scheduled for 1:00 to 2:30 PM eastern time, December 15, 2016. Again, thank you for attending, and have a great day.

Operator: This concludes today's conference call. Thank you for participating, you may disconnect at this time.