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

May 28, 2015, 1-2:30 p.m. (ET)

"Practical Application of Behavioral Health Technology Tools in the Clinical Care of PTSD"

Good afternoon, or good morning, depending on your time zone. And thank you for joining us today for the DCoE Psychological Health May webinar, the Practical Application of Behavioral Health Technology Tools and the Clinical Care of PTSD. I'm Dr. Don Workman. I'm a Clinical Psychologist and Division Chief of the Emerging Technology Program at the National Center for Telehealth and Technology on (inaudible) base (inaudible) McCord, and I'll be your moderator today.

Before we begin, let's review some webinar details. Live closed captioning is available through Federal Relay Conference Captioning. Please see the pod beneath the presentation slides. Defense Connect Online and Adobe Connect are the technical platforms hosting today's webinar. Should you experience technical difficulties, please visit dcoe.mil/webinars to access troubleshooting tips. At any time during the webinar, please submit technical or content-related questions via the Question Pod. The event planning team will address your technical questions as soon as possible.

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I will now move on to today's webinar, the Practical Application of Behavioral Health Technology Tools in the Clinical Care of PTSD. As new areas of healthcare and clinical practice emerge, communication methods evolve and expand. This presentation will review practical issues related to the clinical decision to incorporate technology as part of PTSD treatment. The discussion will provide a general framework for considering technology integration into practice, including patient and provider factors, logistical considerations, and evaluation and selection of specific applications. A specific case example will demonstrate the use of mobile applications to support the treatment of PTSD and include special emphasis on ethical and privacy issues.

Webinar participants will learn to describe the relevance of technology to PTSD clinical practice, demonstrate an understanding of issues relevant to clinical decision making for the application of

technology to practice, and synthesize key privacy and ethical issues related to the use of technology in PTSD practice.

We will now begin today's webinar, Practical Application of Behavioral Health Technology Tools in the Clinical Care of PTSD.

Our first presenter today is Dr. Greg Reger. Dr. Reger is a Clinical Psychologist and Director of the Suicide Prevention Program at VA Puget Sound. He is also an Associate Professor of Psychiatry and Behavioral Sciences at the University of Washington School of Medicine. At the VA he leads a team of mental health providers implementing the national VA suicide prevention strategy within VA Puget Sound. He supervises the team's crisis and suicide interventions, case management and suicide surveillance activities. Dr. Reger also provides leadership for the design, development, implementation and evaluation of innovative program improvements, as well as serves as the Chair of the VA Puget Sound Suicide Risk Reduction Committee.

He has led research on the design, development and evaluation of innovative technologies to support service members and veterans with PTSD, including work as a co-PI on a multi-site clinical trial evaluating virtual reality exposure therapy and leading a DA/VA collaboration in the development of the PE Coach mobile application.

Welcome, Dr. Reger.

Thank you, Dr. Workman. It's really great to be here with everyone talking about a topic that is near and dear to my heart and one that I have thought about and worked and collaborated with for many years.

Let me start by just saying that the views expressed in this presentation are those of myself, the presenter, and do not reflect the official policy of the Department of the U.S. Army, U.S. Department of Defense, or the Department of Veterans Administration. I have no financial relationships to disclosure, and I do not intend to discuss the off-label, investigative, unapproved use of commercial products or devices.

So we're going to be talking today about practical issues related to the clinical decision to utilize technologies as part of PTSD treatment. And the emphasis there is on the practical issues. There's a lot of technologies that have emerged. We'll be discussing that. And obviously the scientific literature around those is of interest, but in recent months DCoE has held webinars related to literature review of technologies, and so we won't be redundant and present that again today. We're really going to emphasize today applied issues.

Mobile applications will be utilized as a specific example for consideration of PTSD treatment, although general issues will hopefully be relevant outside of that. And we'll have an emphasis on applied issues including relevant privacy and ethical issues.

To make sure that we're starting off all on the same page, let's just review PTSD itself. CFM 5 updated the diagnostic criteria, and we start, obviously, with exposure to a traumatic event stressor. And here we're talking about exposure to or threat of death, injury, serious injury, or sexual violence. And then we've got four symptom clusters including intrusive symptoms, symptoms related to the avoidance cluster, negative alterations, and cognitions and mood, alterations in arousal and reactivity. And of course these symptoms persist for at least a month and have a meaningful impact on the social or occupational function of the individual.

These symptoms are not due to some kind of medical condition or substance use. And we have the addition of specifiers for dissociative types or delayed expression where the symptoms occur six months or longer after the event.

So this revision kind of guides our framework and what we'll be discussing today in terms of addressing PTSD with different technologies.

Thankfully we are living in an age when we have effective treatments that help people recover from trauma. There are a number of evidence-based treatments. Two of our behavioral interventions include cognitive processing therapy and prolonged exposure therapy. And of course these are treatments that are widely disseminated throughout DoD and VA. And some of the technologies that we'll look at are used in conjunction with these treatments.

So let's just pause and think about how far our discipline has come in terms of mental health. You see there at the top an image of a reclining couch, something similar to perhaps what would have been used in psychoanalytic treatment at the birth of our discipline. And then, of course, an image from what might be a counseling room today. This is an oversimplification. Obviously our treatments have evolved dramatically, or theories, have emerged and evolved over time in dramatic ways as well. But this exaggeration illustrates a point that at the end of the day our treatments really are similar in that we have a person who is a helper in a room with a person who is in some pain sitting together talking. When I was on active duty with the Army, our Brigade Commander, who was new to the unit, came and visited me and looked at our equipment list for the unit, and said, why do you have so little equipment? And my response was, give us two chairs and a private place to talk, and we're good to go, sir. Because, really, we don't need a lot to do our work. We've got two people sitting, talking. One helping and one sharing their pain. Again, an oversimplification but it does lead to the point that things have begun to really change in the last 20 years.

Two things in particular have really emerged in the last 20 years as it relates to our helping disciplines. One is the evolution of our computer age. We have had the emergence and the explosion of any number of computer-related technologies, and then we've also had Operation Iraqi Freedom and Operation Enduring Freedom in Iraq and Afghanistan, which have impacted our disciplines as well.

So let's unpack this a little more.

First, as a result of OIF-OEF, we obviously have the increased risk of PTSD for those who deploy. There have been a lot of different studies, different rates of PTSD estimated in the literature. I like this study by Koch, et al., because, really, if you start to bucket individuals in similar categories, the rates are not as dissimilar as they might appear, and it appears that we've got a rate of about 5.5% of all deployed military personnel screening positive for PTSD, and about 13.2% of those who are combat infantry, or real line infantry folks. And then when you look across the veteran sample, it appears we've got about an eight percent lifetime rate of PTSD. And so we've really got this at-risk population, individuals who have served and returned, at increased risk of PTSD.

So kind of coincident with this, of course, we've had this computer revolution, the computer age. And it has dramatically impacted life in America and across the globe. American adults are using the internet at a rate of about 85% at this stage, as of 2013. The Pugh Research Center has done great job of tracking technology use over time. In 2015, early this year, they reported that 64% of Americans own a smartphone, a mobile device that has smartphone features. And that is up from 35% from 2011. Just really a dramatic increase in a relatively short period of time impacting a huge proportion of the country.

Our young, technologically savvy service members are, not surprisingly, owning these devices at even higher rates. A recent survey at one military installation found that soldiers owned Smartphones at a rate of about 89%, so these devices are widely available to our active duty soldiers. And it's, you know, generally being perceived as a positive thing. Ninety percent of our internet users in America are saying that the internet has been a good thing for them personally. And so we've got this confluence of events where we've got a computer age dramatically impacting how people are using technology and integrating it with their lives combined with wars that are increasing the mental health risks for a large number of service members. And the impact of this is that there has been an explosion of technology tools aimed to help.

This is just a screenshot of a number of tools, technology-based, computer-based tools, that have been developed to attempt to assist. Everything from virtual Iraq-Afghanistan, which are immersive head-mounted, display-delivered virtual environments that aim at supporting exposure therapy for PTSD to any number of apps designed to help with PTSD. Self-based website curriculums designed for those to go through at their own time and place, at their own pace. And then, you know, we've even had the shared immersive environments that can be accessed simultaneously my multiple users to support the psycho-education of PTSD. That's down there in the bottom right corner, the virtual PTSD experience and a virtual world called Second Life. And many, many more.

Telehealth is being used as a technology solution for reaching remote located service members and veterans and the delivery of PTSD care.

And so you see this combination of many, many solutions being proposed to help with this problem. And it's impacting the way we deliver care, arguably in a way that perhaps has not occurred since the inception of our helping disciplines.

So let's pause there for our first polling question. Of those of you in the audience, we're curious, do you personally own a smartphone? I'm going to pause here and give you about 45 seconds to respond so the computer functionality can process, and we'll just see who in the audience and what the rates are among those listening here.

Okay.

So it looks like we've got about 85-ish% of those of you responding to the poll personally owning a smartphone. So not surprisingly, those attending this talk are similar to our young service members who are carrying these at a very high rate. And you can think for yourself, how is your life impacted by this? What are all the functions in your day-to-day life that you use this device? And we'll refer back to that here in a moment.

Second poll. Do you treat patients with anxiety disorders or PTSD? Is that something that you do? Again, getting a sense for our audience here. We'll give you about 45 seconds to respond so the computer can catch up.

Thanks for all the responses.

So it looks like we've got about 75% - close to 75% of you treating patients with anxiety disorders or PTSD. Which is great. It's very helpful to know who is in the audience out there.

Third, have you used technology in the clinical care of anxiety or PTSD? Most of you are clinicians treating patients. Have you used technology – mobile apps, websites – in the care of your patients when you're treating anxiety or PTSD?

Okay. It looks like we've got about 60% of you who have used technology. And that's great. These are, you know, we'll hopefully get to and you'll see there is incredible power in some of these tools, and we hope to be able to help those of you who have not yet done this to think through how to do it thoughtfully.

And finally, our last polling question for right now, do you feel that the internet has had a positive impact on your life personally in general?

Thanks again for the responses.

Similar to most of America, with 93% of our audience reporting that it has had a positive impact on your life personally, it's an incredible tool with real capabilities that may be helpful in many cases for treatment as well.

I noticed as I looked at this polling question, the top of my head is being cut off. The team here is joking that I should tell you all that's the one place that I have hair on my head although you can't see it, so you can just imagine it there.

All right. So, obviously, there's a number of practice questions that arise. We've got this problem of deployment-related PTSD. We have a growing availability of technology tools to address that problem. And the natural question is, should I use technologies in my practice with PTSD? Other questions that emerge are, which technologies are available for use in clinical treatment of PTSD, and how do I know the quality of available technology resources to augment PTSD treatment? How can I know which patients engaged in PTSD treatment would benefit from these technologies? And then what ethical and privacy issues should I consider before using a technology in PTSD practice?

Let's walk through some ways to start to think thoughtfully about these and related issues.

I found it very useful to adapt a framework that was originally recommended for considering the design of virtual environments to support patients with central nervous system dysfunctions to help think through some of these initial questions about whether or not to use a particular technology with a particular patient in treatment. So obviously it was designed for thinking about the development of a virtual environment, but they really do generalize pretty well to other technologies. And the reference there is a Rizo (sp), it's a book chapter. You can look that up in the references section if you want to look at this some more. But one of the questions that I borrowed from this is just a really basic, no duh questions, is can the same benefits be achieved without the technology approach? I was consulted many years ago by some investigators at a university who wanted to develop a technology-based solution to educate a large campus on alcohol-related use and its problems, associated challenges. And they were consulting with me on developing a (inaudible) display-based virtual environment. And as we talked and I learned more about the project, we thought about whether or not the same benefits could be achieved through an alternative approach, a virtual environment is installed on a computer. One at the time is usually a piece of software. And you have a large college campus you're trying to reach with this education. Can you achieve the same benefits with an alternative approach?

How well do the capabilities of the technology fit the clinical goals? So sticking with virtual reality as an example, one of the capabilities of that technology is to allow a user to be psychologically present in an environment other than that in which they are physically located. It's called presence. And so what are the clinical goals and to what extent are those clinical goals facilitated by helping the patient achieve presence in an alternative environment? There are some uses, such as exposure therapy, where that's very helpful. We want the patient to become emotionally engaged with their traumatic memory. And helping them do so with a relevant virtual environment may prove useful. In the case I cited earlier, for psychological education related to alcohol, maybe a very interactive, well-designed website would achieve that goal better.

And then there is how well does the technology solution fit the characteristics of the patient population? Again, we've got to think about each technology and what are the capabilities and potential side effects, and how well does that fit the given patient population. If the patient population has vestibular issues, then maybe a (inaudible) display (inaudible) virtual environment wouldn't be the best fit for (inaudible).

But let's talk about mobile devices as a specific case example. What are the capabilities of the mobile device, and let's think about that technology in detail, and then we'll think about how it could be used clinically.

So first of all it's portable, right? I mean, we're all carrying around these mobile devices in our pockets. Almost, you know, the vast majority of you are. And they're always available. They're with us most of the time. Some of the Pugh Research Center's research shows that a huge proportion of Americans access this device within 15 minutes of waking. They have wireless internet access. We no longer need to be at a cabled computer. And obviously we can use this device in most cases for voice phone calls.

Other capabilities include the ability to access contacts, our friends, our family, quickly and easily without looking up in a rolodex contact information. It's a computer platform, so we can run software applications. And it has the ability in those software applications to notify us of reminders of any sort. We've got a calendar in our devices. We can email. There's the ability to both take pictures and to get a two-way camera going in most devices these days allowing camera-based or video-based communication.

There's hardware connections available through HGMI or USB and many devices. It can allow the external connection of other devices and hardware. There's the microphone in the device that can support, among other things, audio recording. And then, of course, the camera can be used for video recording. And there's other functions as well.

But with those capabilities now, we can start to think about what clinical goals can be facilitated by those capabilities. So here we can crosswalk what we're specifically trying to do in PTSD treatment, many of the PTSD treatments, and those capabilities, and start to think where there's a fit. Or, alternatively, where there's not a fit.

So in our PTSD treatment, what are we trying to do? Well, one of the things we're doing is tracking information, right? First off, in any treatment we want to know if our patients are getting better. We're tracking PTSD symptoms over time with repeated assessment to see if we're having a positive impact on their symptoms and when that occurs.

We're tracking, in exposure therapies, in vivo homework. When did they go out into their community, confront things that they're avoiding because they make them anxious or feel unsafe, and often we're tracking their subs, their subject unit of discomfort, as they do this. We ask them to come back in and tell us about when they did it, how it went, and we talk through that.

We're tracking imaginal exposure homework and exposure therapy. Again, when did they do it? How did it go? What was their subs? And basing a conversation and review of their homework around these things.

In other treatments we're tracking things like challenging questions worksheets, or ABC worksheets and cognitive processing therapy.

So all of this information and more in PTSD treatment is being tracked over time.

What else are we doing? Well, one of our clinical tasks is to support adherence with admittedly emotionally difficult homework. Well, with this device, we have a portable device that is easy to access. It can be used to self-(inaudible), right? I mean, if we think about, really, what are we asking our patients to do when they go to Wal-Mart to do in vivo exposure, and get out their worksheet or workbook and write down their subs pre-, post- and peak. You know, it's much easier and more stealthy, perhaps less stigmatizing, to pull out a device that 30% of everyone else in Wal-Mart also has out to record their homework.

We can support their adherence with homework through notifications and reminders. And then the device, because it can run software, that software can be designed to date and time stamp homework completion which can support either accountability by the therapist to do the homework. And more importantly, problem solving with barriers to doing that difficult homework is encountered.

The camera on the device can be used in some creative ways, too. I love the idea of supporting adherence with difficult homework by encouraging patients to capture photos to memorialize their accomplishments and to bring those photos into therapy for us to talk about. PE Coach on the Android platform is designed with that capability. And one veteran recently came in and we pulled up his app to look at the photo, but he had captured about 30 more of his in vivo homework where he was just so excited to share with me his accomplishments.

And then there's some real future directions here. Those of you with research careers have all been – I mean, I love the idea, I think it's been under explored, the ability to think about how this device could support gaming motivations to support adherence with difficult homework. We know a lot about how good games motivate players to come back and keep playing. And when good games do it well, people play a lot. If we could leverage some of those motivations to support our patients doing difficult work that helps them recover, it would be a really nice evolution.

Third, in PTSD treatment we're supporting education. We're constantly educating patients. We're educating them about why treatment is important, about what PTSD is, why they're not going crazy, that this is a normal reaction to the event that they've been through. And these devices can help support that through internet access. Just like key psycho educational resources, these resources might be available on YouTube through videos, or maybe they're accessing websites that can be leveraged in treatment.

But we're going to keep going. This is really a crux, where these capabilities meet with what we're trying to do in treatment. In our clinical treatment of PTSD, we often are encouraging people to increase or improve their social support. How could this device support that? Can they leverage their key positively-perceived social support? Their rapid access contacts using social media? Increasingly we're exploring telemental health to help get our evidence-based treatments to rurally-located service members or veterans. Can HIPPA-compliant two-way telemental health be expanded and used and leveraged with these devices?

There are options needed for those who are not willing to do our evidence-based treatments, right. We know that, if you think about those accessing PTSD treatment, that those getting our best practices are really at the tip of that iceberg and there's a lot of service members and veterans who are out there not receiving that specialty care. So we do need options for those refusing specialty care. Some self-care solutions, like afterdeployment.org, that offer self-guided multi-session workshops delivering them some evidence-based tools is much needed, and those kinds of things can be delivered through these readily-available devices.

And finally, the possibility that the use of these devices and the incorporation of them into treatment helps to mitigate stigma. This still needs a lot more research, but, boy, I sure hope that the incorporation of these devices and some of the apps that support service members and veterans gives us the opportunity to render effective care to some who otherwise wouldn't come and see us. I know that there are some veterans out there who are not going to come sit down with Dr. Reger and talk about their feelings. I hope that the availability of some of these tools will help us mitigate stigma and hesitation to seek care and come give us the chance to help.

So next polling question. Do you think technology might help mitigate the stigma of help seeking. Yes or no?

A few more seconds here to respond.

Okay. We have an audience that is as optimistic as I am. I love it. About 95% of you are thinking yes, that these technologies may help mitigate that stigma. There are some incredibly powerful tools out there that are helpful. And we need thoughtful consideration of how to use them.

So let's move to some of those considerations. First off, again, very practical here. Logistics. I was recently in a new clinical setting, a building I hadn't worked in, seeing a PE patient for the second time. I'd done the intake. We'd collaboratively agreed to use prolonged exposure. I looked at my own device. Good deal. We've got a data connection in this building, I'll have them install PE Code Session One. Veteran comes in and we're working through it, asked him to install PE Codes, which we'd already agreed upon doing, and he said, I don't have a data connection, I can't do it. Oh, this was so frustrating because I didn't stop and think that maybe an AT&T subscription wouldn't have the same data connection that my Verizon phone did. And that caused a headache. I hadn't designed a backup plan for audio recording Session One, and now we had a dilemma. So plan ahead logistically and consider the data connection at your facility and how to identify if there's a Plan B needed.

When we use mobile apps in session, there's an interesting phenomenon that happens with physical proximity. You're looking at a small screen form factor, and in order for us to talk with them about the content of the app, whatever that might be, and to collaborate it, you often end up sidling up right next to them in order to be sharing a view of that screen. Depending on your patient, that may or may not be comfortable for them, or possibly for you. And so you need to think about that. There's any number of ways that some clinicians have gone about addressing that. Some have obtained a larger form factor like a tablet or iPad or something. Others will look at the app at the same time on their own device while the patient is looking at theirs and guide them. And sometimes maybe you'll just look at the device together, but it may be something you'll talk with them about.

And then if you are looking at a single device, again, there's just some logistical considerations around this inevitable need to show them something on the app or the device, and this uncomfortable moment where you're either reaching for their phone, or they're handing you their phone, or you're looking at it on your phone and you hand them your phone. You may have your own apps on there. You may have a home screen image. They may have some hesitation about handing over their device. Think about it, that device these days, it's almost like our wallet. And handing it over is readily done by some patients and more hesitatingly by others. So thinking about how to do that, how to talk about that, in advance of your first use may be helpful.

And then, of course, there's time constraints. In some clinical settings we have an evidence-based session that takes 90 minutes, we're trying to do it in 60. Or there's enough content for that 90-minute session, but the time constraints of talking through whether to use an app, how to use an app, is challenging. And so we need to think about those logistics, whether additional time is needed, how to leverage time between sessions to support this, having the patients come in with the apps installed, and having a ready familiarity, as we'll talk in a moment, so that you can efficiently process with them what's needed about the app that you've chosen to use in practice.

My mentor in graduate school was Richard Gorsuch. If any of you are factor analysis people, you've probably read his textbook. But he said to me many times – many, many years ago in a personal conversation, we were having problems with some computer, and he said in the way that only Richard can, the greatest evidence of existence of the devil is computers. And I love that quote because it has helped me constantly anticipate technology's problems that are unanticipated. Anytime we use a computer, something could and likely will go wrong, and we just have to be prepared to respond and problem solve on our feet. These days there are very good app developers, and apps are less likely when they are well designed to crash. But remember, we have multiple different device makers, multiple different carriers, and multiple different versions of operating systems. Even the best apps will sometimes fail. Patients will come in with an operating system not supported by the app, and you as the provider will wonder why the app is not working appropriately, and it's probably some combination of these factors. And so anticipate problems and be prepared to problem solve when they go wrong.

An additional set of considerations is really around experience. Provider experience with the evidence-based treatment. If you're using an app that supports the treatment companion app for an evidence-based treatment. And provider familiarity with the app itself. Don't walk in the session having decided to use an app and pull it up for the first time with your patient. Get some good familiarity with it.

You also, ideally, would have some familiarity with the patient's device. I'm an Android user. Apple devices frustrate me because I can never figure out how to get back a screen. I'm just not as familiar with that platform. So I want to make sure that before my next veteran comes in to use PE Codes with me, and they're using an Apple device, that I have tried to expand my familiarity with that platform.

And then, of course, there's the consideration of patient comfort and experience with Smartphones. If you can rapidly assess that, it will help you. Just because a service member or veteran comes in with a device doesn't mean that they've used it extensively. Some families will share a device. Some veterans will come in having borrowed a device from an adolescent child or kid, and they don't know a lot about it. One service member I worked with came in. He was of an age demographic. I assumed, erroneously, he was

familiar with the device, and he said he had never actually installed an app on the device and didn't know how. So consider the experience both you and the patient have.

Of course there are some high quality apps out there. PTSD Coach is a patient-basing education, psycho educational and symptom management tool developed by the VA and DoD. And then, of course, I've already referenced PE Coach, a treatment companion app to accompany prolonged exposure therapy with the treatment provider.

There are other mobile apps out there for PTSD that are also high quality. CPT Coach has been developed as a treatment companion app for cognitive processing therapy. And then there's the T2 Mood Tracker. We were talking earlier about monitoring symptoms over time, and the T2 Mood Tracker allows patients to kind of rate their own distress on any number of categories, and certainly that can include post traumatic stress. It's a simple visual analog scale based measurement tool, tracks it over time, and some clinicians have found it helpful to have patients bring that in to talk about how things went over the last week.

As far as high-quality web resources, there is afterdeployment.org. The post traumatic stress module of Afterdeployment is located there multi-session workshops that will allow those who are unwilling or unable to access specialty mental health treatment for PTSD. You get many of the evidence-based tools to support their recovery.

All right. How do I go about selecting a mobile app to use? Well, that's a really important question. One starting place is the usability of the app. If you're exploring tools that you might want to use in clinical practice, keep in mind that all of us are frustrated by technologies that are not designed with end-user considerations in mind. We can all remember – well, maybe not all of – many of us can remember the days of the VHS recording devices where we had that show we wanted to capture and wanted to record it while we were out at another engagement. We could never figure out how to set the recording, right? These weren't designed with good usability. Many of our web interfaces, especially government web interfaces, are not designed to be highly usable, and they're not intuitive. So as you look at these, keep in mind you don't like being frustrated, let's not frustrate our patients. Try to select tools that are usable. That were designed thinking of the end user.

Then, of course, we've got the quality of the app itself. This is a difficult one because, really, at this point you have your own clinical judgment and the consultation of your peers. Look at the content and evaluate it from the lens of how good is the quality of the content of this app. I've recently learned that APA is preparing to assist with this, and I'm just delighted. Division 56, 46 and 29 are preparing to collaborate on a website with mental health apps with reviews by experts to support all of us as we're considering what apps to consider incorporating into clinical practice. So stand by for that.

And then of course we want to select apps that take into consideration the privacy and security issues. And more to follow on that in just a moment.

But we want to be aware, obviously, of the limitations. I'm very excited about the potential of technology. But we want to be up front about what an app can't do. An app cannot replace a clinician. An app is not going to build a human connection with someone who is suffering. It can't build therapeutic rapport. So these are tools. Very helpful tools, but tools that ideally support the work of a clinician and a patient.

And then, of course, there's always the role of clinical judgment. You, working with your patients, always have the obligation to use your best clinical judgment to decide what tools are indicated and what tools aren't indicated. And we can think together about is a high-quality app ever contraindicated for any given patient? And the answer is probably yes, that there are situations where even a good app is not a good fit for that particular patient. And so your clinical judgment is never replaced by these technology tools.

At this point I'm going to turn it over to my co-presenter, Dr. Scott Hunt.

Thank you, Dr. Reger. I would now like to present our second presenter, Dr. Scott Hunt. Dr. Hunt is a graduate psychologist at the VA Puget Sound Health Care System American Lake Division and a Senior Fellow at the University of Washington Department of Psychiatry and Behavioral Sciences. He earned his Ph.D. in Clinical Psychology from Fielding Graduate University, including an internship at the American Lake VA. He is completing a research fellowship at the University of Washington, American Lake VA. And Dr. Hunt's time at the VA is divided between clinical work in the Psychiatric Assessment and Clinical Center and research into technological innovations that support psychological health.

Welcome, Dr. Hunt.

Thank you Dr. Workman and Dr. Reger. Delighted to be here.

So to begin with, the views expressed in this presentation are those of myself, the presenter, and do not reflect the official policy of the Department of the U.S. Army, the U.S. Department of Defense, or the Department of Veterans Administration.

I have no relevant financial relationships to disclose, and I am not intending to discuss the off-label, investigative, unapproved use of commercial products or devices.

So to begin today, we're going to try to identify some common patient privacy and ethical concerns in the application of technology in clinical care of PTSD and hopefully provide some accurate and easy-to understand information to empower providers when integrating technology tools into clinical care of PTSD.

So it's not uncommon for a veteran or service member to come to our office with a book, or an innovative therapy that they've heard about, or perhaps an idea on how they want to enhance their therapeutic experience. In this case, a veteran came to my office after finding an app that they thought would help to manage their PTSD. So the question becomes how do we evaluate whether to incorporate this technology into their clinical work and how do we evaluate adjunctive therapies in general when it comes to technology. The good news is that it's really that much different than when a patient comes with the book, or something they've heard about on TV as a therapy idea. Of course, integrating technology in the clinical care can at first seem a little daunting because often technology is a new idea to us, and so it gives rise to some apprehension. We need to understand some things about hardware and software in order to become competent technology users, particularly as we start to think about privacy and ethical issues.

But, again, at the heart of it, we're still just being clinicians applying a therapeutic intervention. So let's start by talking about the technology part.

So a mobile application, or an app, is really just a software program that performs one or more specific functions. When we go to a website or an app store, we're looking for an app that's going to perform a specific function, and we really want to find one that's going to do exactly what we want. So we're going to go to a website that we trust and that has reputable reviews. So many websites, like the T2 website, are going to give you quite a bit of information. They're going to have mission statements that tell you what their purpose is. They may have user manuals that give you an overview of how the app works. And really what we want to do is we want to consider the developer's agenda. Are they looking to make money by charging a fee, or sell advertising space when you download the app, or are they hoping to gather personal information every time you use the app. So really kind of understanding that agenda. And I always try to consider if a veteran is using a free app, are they going to get bombarded by advertising banners, and how intrusive is that going to be in veterans trying to use that app for a therapeutic purpose.

When you install any app, the first thing that is going to be asked of you is permission to download the app onto your smartphone or some other device. And what that means is it's going to look into your device and use specific parts of the device. So reading permissions can be a little unnerving if you don't know what is typical or why the app would want access to those areas. Oftentimes they're asking for

permission to go into areas of your smartphone that seem irrelevant to the purpose of the app. But the intent isn't necessarily to do harm, it's more about how the app programs itself into your device. Still you have to be cautious. They may be asking permission to go into areas that have the potential to take control of your device. So some areas to pay attention to are Read Contact Data, Make Phone Calls, and Full Internet Access. These have some serious risk potential. There may be a good reason for an app to go into those areas, but on the other hand, if you're giving permission for an app to make phone calls, they may be making phone calls that have a charge involved. So you just want to pay attention to that.

Smartphones offer great mobility and information at the touch of a few keys, however, control of our phones also ends at our fingertips. For me it's been illustrated because I have children, that as soon as my smartphone leaves my hand, things get downloaded onto my phone. Often I end up with super hero apps downloaded on my phone, or pop music mysteriously enters my phone. Thankfully there are password protections that you can download to your phone, and you should use that. You can and should have phone password protection, otherwise, anything on your phone, someone can access.

In addition, many apps, like PE Codes, allow you to create passwords specific to the apps. More importantly, it's a good idea to have strong passwords, and there are some ways to increase password protection. So some ways that you can do that are by using long passwords that are eight to 12 – sorry. Okay. So some ways that you can increase password security are to add length to your passwords. Passwords typically require a minimum of eight characters and a maximum of 12. Opting for longer passwords of 12 are much stronger than the minimum of eight. Mixing up characters, alternating symbols and numbers and letters. Substituting numbers and symbols, for instance, using a 3 instead of an E or an exclamation point instead of an I. Use each number, letter or phrase only once. Strive to make each character unique. Steer clear of sequential numbers and letters. So passwords that are 123ABC are not particularly strong passwords. And avoid personal information as your password.

It's definitely important to have strong passwords. And people generally don't. In 2013, the most commonly hacked password was the word "password." So that's obvious that people aren't really kind of focusing on strong passwords.

So because Smartphones and laptops easily communicate with other devices, we also have to pay attention to data sharing. File sharing is software or apps that allow internet users to connect to each other and trade computer files. And there are some different kinds of file sharing. One is called peer-to-peer or PTP, and it allows direct file sharing through the downloading of files between devices. And there are a couple of applications that can do that. BitTorrent, Limeware, iMesh. Most often these are used to download music, movies or software. And the problem with them can be that when you download a file with them, spyware or malware can be inserted in them. And it's really a buyer beware kind of system so that you have to really pay attention to the website that you're downloading information from because you just never know what's going to be in the file.

The other kind of file sharing system are what are called Cloud-based data file sharing systems, such as Drop Box or Google Drive or iCloud. And these are systems where data is uploaded to the Cloud via an encrypted transfer system. It's then at rest in the Cloud using bit encryption until it's downloaded by the person that you want to share the file with.

These systems are fairly secure. There haven't been security breaches in terms of the encryption ever being hacked. What tends to happen is that the passwords get compromised. So someone is either phishing or they are able to break into someone's email account and find a password, and then they're able to download information from the Cloud.

One way that you can increase security in any kind of file sharing system is to encrypt the information that you're trying to transfer. So you can use an application like Fox crypto that encrypts your data, and then even if the information is compromised, the information can't be seen because it's encrypted. So any file sharing system has risks involved in it because you have information that is out there and potentially available to anybody who wants to look at it.

So the other thing we want to do is we want to be able to maintain control of our devices. And that's not always possible. Smartphones and laptops get stolen, or they're lost, and so to be able to install remote wiping or remote disabling to our device is really important. Both Google and Apple have these built in. You can increase security even further by downloading secondary apps that wipe or disable information that's held in your device. And there are even apps that will locate your smartphone if it's lost.

We also have to pay attention to the fact that we're using Smartphones and laptops in public arenas via WiFi or the public network. Firewalls control ingoing and outgoing traffic to your device. Most wireless routers have a firewall to protect you from the internet, but you're not protected from others connected on the same network. So someone who knows what they're doing can steal a user name, or a password, or see what you're doing just by being on the same network.

You can protect yourself by doing some fairly simple things. If you're using a laptop, you can turn Sharing off by going into the Settings part of your computer. You can also turn off Network Discovery, which basically makes you a smaller target on the network. You can enable your firewall. Most computer operating systems come with at least a basic firewall, and it's a simple step to keep unwanted local users from poking at your computer.

On Smartphones your service provider acts as a partial firewall protecting you from wireless networks. But your Bluetooth connection is still vulnerable, so you can download apps that will protect you. And so apps like AppWall or Perkersky (sp) increase firewall protection in that regard.

Ultimately, you're your best firewall by staying away from apps which are questionable, or websites that are questionable, because those are really your biggest risks when you're online. But you also want to make sure that you're using encrypted layers when you're transmitting data. So using Hyper Text Transfer Protocol Secure, https, or Single Socket Layer, SSL, are good ways to make sure that your data is secure. And you can make sure that you're using them just by looking up in the address bar and seeing that https or the little padlock up in the address bar.

Finally, turning off WiFi when you're not using WiFi is a good security measure. And it also conserves your battery. So that's a good measure to take advantage of.

So these are just some practical steps for anyone using technology. They are also the beginning steps to formulating an ethical plan for the treatment with technology. They are also some of the things that I start talking with my patients about when we start talking about how we're going to use technology in treatment.

When we start thinking about technology from an ethical standpoint, we want to go back to our ethics code. And our ethics code tells us that really technology isn't different than any other kind of therapeutic contact. So we need to be competent providers by getting relevant education, training, supervised experience, and consultation in areas we wish to practice. With regard to technology, it means being competent in how the technology functions as well as in the clinical appropriateness of the technology. We need to be sure that when we're using technology with the patients, we're obtaining their informed consent, and we need to disclose the limits of confidentiality as it relates to the technology that we're proposing to use.

When a patient comes to my office, of course my first goal is to help them, and my second goal is to do no harm, so ethical practice is about anticipating consequences in the interventions that we utilize. Interventions, including the use of technology, often can have unintended consequences, and so we need to carefully assess risk on a case-by-case basis. I like this Bennett quote because it's a reminder that risk assessment is an ongoing calculation that we need to be thinking about as new information is coming to us.

So how do we recognize risk? There is a lot of different ways. Certainly we want to think about technology competence. And there are patients that, you know, are not a good fit for technology. A lot of the older

veterans that I work with have no interest in technology. Some of my World War II vets, not all of them, but some, don't have any interest in technology. Sometimes my chronically mentally ill veterans have paranoid delusions about technology and don't want anything to do with it, so that's not a good fit.

Sometimes there are privacy risks. I have worked with some domestic violence systems where their Smartphones are often scanned and looked at by abusers, and so including that into a treatment plan would not be a good fit because suddenly that information is going to be available to them, and they're going to be questioned or interrogated about the information that's on their smartphone.

We also want to think about information that might be important to our practice and how we preserve our practice, our scope of our work and so forth.

So in terms of responsible practice, we want to consider confidentiality, competence, and emergency response. So primarily thinking that not using email for crisis response because it's asynchronous, but having a clear plan for emergency response is important, and, of course, making sure that everything is up front and that we're disclosing our plan with our patient.

So there are lots of apps out there. And in part we need to make sure we're choosing well-tested, evidence-based apps that clinically fit the goals we have for our patients. And I think that, as Dr. Reger and I have tried to highlight, that, with PTSD, we can do that. So thank you.

Thank you, Dr. Hunt. Appreciate the information that's been presented, and we'd like to move ahead and see if there are some questions that have come from the audience for answering. A reminder to the audience, if you have not already done so, you may wish to submit questions now via the Question Box that's located on the screen, and we'll respond to as many questions as time permits.

Drs. Reger and Hunt. I have one question that's come in. What is the liability for clinicians for using electronic patient-generated data while receiving treatment for PTSD?

Well, so liability is a factor in all that we do, right, and the question is general enough it makes it hard to respond to directly. I guess the liability really comes from a whole confluence of clinical decision making that ultimately resides on whether or not we are practicing competently and ethically and appropriately. When there are questions about clinical practice, oftentimes the thumbnail test is really have we acted in a manner that is consistent with how a jury of our peers also would have acted. That is, would psychologists in similar situations typically have responded in similar ways. Problems arise when the answer to that question is no. And consultation is one of the primary ways that we all keep ourselves out of trouble. Make sure we have appropriate training and consulting frequently with those with the right kinds of experience to make sure that we are providing high quality care so that those issues don't arise.

Okay. The second question, my concern is that if I have a patient using a mobile app to track PTSD symptoms, and they send the information to me, what am I going to do with the information they send me?

That's a great question, and it really gets at the heart of one of the key issues around the use of apps in clinical treatment. One of the key factors when patients are installing apps or we're using apps with thinking about is this an app that's installed on the patient's device, used by the patient and therefore is their data, or is this app going to be used in some manner to transmit information to us so that the information is now in our hands. When a patient chooses to use an app in conjunction with treatment and it creates data that is on their device, they own that data and they can do with it what they want. When that data is transmitted in some form, then there is a responsibility by the clinician to treat that data with the appropriate responses and HIPAA does apply to data transmission. And so many of the apps that have been designed to date really are designed to be installed on the patient's phone without transmitting any data because it does create additional complications. PE Coach allows the patient to track their PTSD symptoms on the PCL over time. And we can look at that together when they bring their device and their data into session. It does not transmit PCL data to the therapist through email or any other way, and

so we really do have to look at it on their device. Now the downside of that is that the app also doesn't copy that data into the medical record, right? I mean, we'd love to leverage the great capabilities of these technologies to support documentation of symptoms over time. But because of that barrier, many of these apps don't do that. And the end result is that some clinicians end up documenting scores in the medical record as well as the app. Other clinicians, I've heard, won't use the PCL tracking in some of these apps because they've got a clinic process that uses paper or computer-based tracking over time, and so there is that disconnect. There are research projects that are being pursued that will allow a version of the app that is linked with the medical record in appropriate ways that will transmit data like PTSD symptoms over time directly in the medical record in a secure fashion. But obviously those are yet to be widespread.

Got anything to add to that?

No, I think that the important part is that it stays with the patient.

Um hmm.

Gentlemen, what are some – let me move to another question while we're talking about PE Coach. I know that the PE Coach has special security features such as app password protection and the voice files are safe within the app to add a couple layers of security for patients' data. What do you recommend to providers who are explaining the extra security measures that are unique to this or other DA, VA mobile apps – DoD, VA mobile apps?

Yeah. So there are unique features of certain well-designed apps that do make them a particularly good fit for PTSD treatment. We can imagine every time we create an audio file on a device, as the question referenced, a very knowledgeable person about our app here, it does. There's some special features built into the app to make that audio file more secure in that app. If we just pick any off-the-shelf audio recording app, we could create an audio file, but then there's the risk that software that scans the device for audio files will scoop that up and put it in places that are helpful, maybe if it's a music file, maybe it's less helpful if it's an audio recording of your therapy session.

As far as how to educate yourselves and patients on these features and what's available in the apps, I think really, just like anything, going to the evidence-based literature, going to peer review journal articles. There are published discussions of some of these apps. That will be growing as more work is done. And then, you know, again for some of the well-designed apps there are clinician guides that have been designed to really discuss the features, and those can be reviewed as well. As it results to PE Coach or the VA-DoD apps, the National Center for Telehealth and Technology website has clinical guides for many of those tools.

Anything you want to add?

I think demonstrating and highlighting the strength of the app is really important.

Yep.

Another question that has come in. I have been using PE Coach with patients for PE therapy and recommending PTSD Coach for patients who are not involved in PE. Besides the additional tools that you mentioned in your presentation, CPT Coach, T2 Mood Tracker and After Deployment's PTSD module, have you had patients bring in other non-DoD/VA technology tools they want to use? Do you have any that you want to recommend or that you think may be helpful?

(Inaudible), what comes to mind?

None that I would recommend. I tend to try and steer them more toward the T2 –

VA/DoD apps?

Yeah. You know, in preparation for this talk, I went to the Google Play Store and I just searched PTSD. And I would encourage you to do it. And you can see the vast number of apps that are out there to help with PTSD. Many of which I'm not familiar with. And as you start to think about using those, or what your patient could come in with, I've certainly had patients ask about other PTSD apps, and, really, my approach is similar to what's been discussed here. You've got to look at each one individually. There's so many out there that it's difficult to predict which one they're going to come in with and discuss and share with you. And many of them are innocuous, right? Basic psycho educational material, some kind of tracking, but thinking through and looking at them with an eye towards the issues that Scott discussed is really important. Again, my experience is in a broad range of technologies, not just apps, so there are virtual environments for PTSD. I certainly would recommend people take a look at that, the Virtual PTSD Experience and Second Life is a very unique resource that was designed to support an interactive experiential learning that's similar to like an interactive museum that you might go into and gives users a chance to interact with an environment and learn about PTSD in a really unique way. So I thought that was a really great resource. So there's a number out there, but those would be a couple to look at.

Another writer asks, are there contraindications that you've run into for using mobile apps in clinical care?

Yeah, I think – well, I think this entire discussion highlights some of the issues that can arise that can make them contraindicated. They may be contraindicated for clinician reasons. For example, I've often had clinicians in onesies and twosies in workshops say, well, what do you recommend, I'm not a smartphone user and I really don't care for technology, what do you recommend? Well, I recommend you maybe not use it. You know, there are provider factors that would create a contraindication. Certainly patient factors, some of which were referenced in this talk. The types of patients that may not be interested, their symptoms may create a contraindication, even some physical symptoms could create a contraindication. And so really looking at it case by case. But in many cases, a well-designed app that supports the treatment you're during will be a good fit.

There's also the issue of timing, and sometimes it's more about the placement of where the app is. So sometimes people come in, and they have an app, and it's not that the app isn't right for the treatment, it's that it's not time for the app. So it's really about maybe forestalling the use of the app until it's time. So a person may be starting therapy, and maybe be pre-contemplative and saying, you know, this is a good app, but let's wait a little bit farther for the therapy to progress.

Another question that came in is should Smartphones be used in clinical care based on the individuals or do you think at some point it will become mandatory that clinicians are able to use them?

Could you read that one more time just because I –

Should Smartphones be used in clinical practice based on the individuals or at some time in the future do you think it will become mandatory that they be used?

It's hard to imagine a scenario where they would be mandatory, and my response is based on just my high value for the role of the clinician's judgment and what is the best way to care for this patient. I think that is something that we have a great, high regard for in medical treatment in general, and certainly in mental health and PTSD treatment. I guess the question leads my mind to certain logistical features that could support an encouragement to use certain apps, the most obvious of which comes to mind is in PTSD treatment for exposure therapy. There are serious logistical challenges for some providers in some settings to audio record the (inaudible) exposure and the full therapy session. And that is probably the primary reason it's been adopted so widely in that treatment is to solve that problem. So I can imagine a clinical setting where it's like, hey, everybody should use PE Codes because it solves that problem. But thinking of it as being mandatory is harder for me to get to. It may become ubiquitous because it's so helpful. As the quality of these apps improves and the devices become more and more ubiquitous, but it's hard to think of a mandatory – I don't know. Any thoughts on that?

It's hard for me to imagine being mandatory. It's more an injunctive. It's more like a workbook in some ways. So to think of it as – I guess I think of it as mandatory as more of a significant feature in terms of replacing the therapist. I can't see it as taking on that role.

Yeah. You know, it will be really interesting to see where these technologies evolve to and where they go. It's hard to predict. I mean, who would have predicted 20 years ago that we would be carrying around high-powered computers in our pockets. But at this point I think the vast majority of the developers and researchers out there see these technologies as tools to support the quality work of the clinician. And to the extent that they do that, they'll be adopted, and it's less a question of whether or not they will be mandatory and more of a question of to what extent do they actually support that work.

Thank you. Perhaps one final question. In your opinion, what percentage of DoD or VA providers are currently using these technology tools in their clinical practice? How close are we to a tipping point?

That's a great question. So there has been some survey research around this, at least for PE Codes. A lot of money has gone into developing these applications believing that they supported the work of the patient and the provider. So PE clinicians who were trained in the VA were surveyed about their use of PE Coach after the release of it, and the results of that survey were presented in conference and I believe they are currently in review. And the bottom line is that of those several hundred providers who responded, of those who had seen a PTSD patient in the last year, exactly 50% have used PE Coach in the treatment of patients with PTSD. So, as you can imagine, that is an encouraging statistic. I think it's fair to say that the primary dissemination efforts have been through announcements, emails, conference presentations, trying to make sure everyone knows it's available. It's also incorporated into the training of new providers. But that's a nice statistic just a couple of years after it's released, that 50% have been using it. And we'd love to see that impacted. And there is plans to kind of research further how we can support implementation of tools that are helpful.

Comments, Dr. Hunt?

No, I think that pretty much covers it.

Well let me thank you both, Dr. Reger and Dr. Hunt, for a very informative presentation and useful answers to a number of questions.

Back to the audience. After the webinar, please don't forget to go to the URL http://dcoe.cds.esgce.com and select the activity 28 May PA webinar. This will take you to the login page. Enter your email address and password. If this is your first time visiting the site, enter a password you would like to use to create your account. Select Continue. Verify. Correct or add your information, and select your profession. That will allow you to proceed and complete the activity evaluation. Upon completing the evaluation, you can print your CE Certificate. You may also email your CE Certificate, and your CE record will remain in the website for later retrieval. The website is open for completing your evaluation for up to 14 days. After the website has closed, you can come back to the site at a later time if you wish to print your certificate again, but you will not be able to add any evaluations.

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The Chat function will remain open for an additional ten minutes after the conclusion of the webinar to permit attendees to continue to network with each other.

Thank you again for your participation. The next DCoE TBI webinar topic, Outcomes Following Concussion, is scheduled for Thursday, June 11, 2015, from 1:00 to 2:30 p.m. Eastern Time. And the

next DCoE Psychological Health webinar topic, Outcomes, Anger, Aggression, Violence in Male Service Members with PTSD, is scheduled for Thursday, June 25, 2015, again from 1:00 to 2:30 p.m. Eastern Time.

One last time, thank you for your attendance. Have a great day.