DENISE KENNEDY: All right, let's get started. Hello, everyone. Welcome and thank you for attending our VA Mobile Health Discussion Series webinar. My name is Denise Kennedy and I'm going to run through a few brief technical reminders before we begin the discussion about the Hearing Aid Distance Fitting App, also known as HADFA.

Your phone lines are muted-- we'll be taking questions through the chat feature. If you're experiencing any technical difficulties please use the chat function available to you at the right of your screen. To respect everyone's schedule, we'll keep this moving so the discussion ends on time. Today we welcome Brian Stevenson, innovation coordinator for the VHA Innovation Program. Also joining us for questions today is Dr. Chad Gladden, telehealth coordinator and audiologist.

As mentioned before, if you have any questions for our presenters or the HADFA team, please use the chat feature. We'll stop intermittently to answer those questions or get to them at the end. If for some reason we don't get to your question, we'll send out an email following the webinar with any relevant answers. To download the presentation, please click on the file name below the chat screen and that should

download the presentation. And with that, I'll turn it over to you, Brian.

BRIAN STEVENSON: All right, thank you. Good afternoon, welcome to the VA Mobile Discussion Series. As just mentioned, my name is Brian Stevenson. I am an innovation consultant working for VHA Innovation. We're really excited today to bring you an overview of the Hearing Aid Distance Fitting Application, otherwise known as HADFA.

HADFA is a joint effort between Connected Care, VHA Innovation and the business owner: Prosthetics and Rehabilitation Services. My partner in today's discussion is Dr. Chad Gladden, audiology telehealth coordinator and one of our primary clinical leads for HADFA. Dr. Gladden will be helping me respond to questions in the chat section and during our Q&A at the end of this presentation.

In 2012, VHA Innovation and Rehabilitation and Prosthetic Services embarked on a joint effort to develop a distance hearing aid fitting application. While the proof of concept was successful, the prototype performed field testing in 2015 and used an interim device that proved to be cumbersome – signal

loss served as a point of contention for field operatives. However, in 2016 the Integrated Project Team received an award for HADFA to further develop the solution, forgo the interim device and replace it by allowing the provider to tap into the Veteran's hearing aid directly through Bluetooth.

HADFA is unique in that it utilizes approved interfaces available on ONE-VA TRM: VA Video Connect, Virtual Meeting Rooms and the Telehealth Management Platform to name a few. We'll be testing HADFA at the James A. Lovell, Miami and Louis Stokes Cleveland Health Care Centers. Our development cycle will complete in August 2017, after which we plan to disseminate HADFA from the audiology clinics.

This slide serves as a high level overview of HADFA's workflow, both externally and internally. HADFA uses cloud-based virtual meeting rooms through VA Video Connect software allowing the provider to hold a video conference with the Veteran while simultaneously making adjustments to the Veteran's hearing aid through Bluetooth. That's a pretty exciting feature.

Now, I'd like to walk you through a HADFA encounter – how it will look and feel to the provider and the Veteran. Initially, the

audiologist meets with the Veteran in person and helps the Veteran to install HADFA on their respective smartphone, whether iOS or Android. Then the tutorial begins and the provider steps through the initial setup and installation of HADFA.

Typically, this is done in person. However, it can also be done by the Veteran if they feel comfortable prior to their first HADFA encounter with the provider. The Veteran must agree with the VA Privacy Policy before clicking “Next” to complete the HADFA installation.

At this point, the Veteran's hearing aids are connected to HADFA. The Veteran opens and closes the battery door on their hearing aids to start the Bluetooth pairing mode. HADFA will begin searching for the Veteran's hearing aids as shown here.

HADFA indicates that the right hearing aid has been found and that the left hearing aid has been found by placing a check mark next to the left and right device on the HADFA screen. HADFA is now set up and ready to use. The provider and the Veteran will then determine a future date for the next HADFA

encounter, by which the Veteran will receive an email that contains the code for the VMR, which is short for virtual meeting room, and a password.

We're going to go into a hypothetical fast forward and imagine that two weeks later we are conducting a follow up appointment virtually. Before I go into this, I do want to let you know at the end of this during the Q&A, I'll be posting a link to HADFA on VA Pulse, which will allow you to watch some video demonstration and dig a little deeper into what HADFA can do for you.

To establish a connection to the provider for the future encounter, the Veteran enters the VMR information into HADFA by logging into the VVC with the information the provider sent to the Veteran in email. So this split screen that you're looking at here-- imagine the left side of the screen is the provider-facing HADFA application and to the right is the smartphone or the Veteran's iPhone or Android device that they're connecting to HADFA with. And here, HADFA begins to log into VVC.

The Veteran is prompted to accept the HADFA/VVC encounter.

Our first indicator that HADFA is working properly is that the Veteran will first see their image in the video encounter. Subsequently, the provider receives the chat session request on their provider-facing equipment and clicks the “Start Conference” button to begin the encounter.

The HADFA Audiovisual Encounter begins. The provider now has the opportunity to review the Veteran's concerns from their previous visit. For the purposes of this demonstration, let's assume that the Veteran reported to the provider that his daughter was complaining that his television was too loud in the home. The provider asks, some of the time or all of the time?

The Veteran responds, all of the time. The provider connects to the Veteran's hearing aid and makes a slight adjustment so the soft sound of speech will become available to the Veteran and this is done through Bluetooth. The provider then informs that he or she is making the adjustments and will return shortly to speak with the Veteran.

Once the adjustments are made, the provider saves the settings and returns to speak with the Veteran. In closing, the

provider sets up another HADFA encounter to discuss with the Veteran whether or not the adjustments were good or require further augmentation. This connection is made through Wi-Fi or cellular connectivity, so it proves to be a highly rural and remote solution as well as an in-house solution for any Veteran that would like to use this service.

Before we close this portion of the discussion, I'd just like to share some information concerning our plans for testing and moving forward. Right now, we're in HADFA Phase 1, which focuses on the patient-facing application only. We're using static VMRs, which will be used in the encounters which are manually input into TMP. We've entered our project into VIP and have completed our first Epic. We've also engaged 508 Compliance-- we're beginning our application. And we touched base with Privacy to make sure that-- while we believe that we are not transmitting any PHI or PII-- we are still working with Privacy to make sure that we have our i's dotted and our t's crossed.

We're very excited by the shortcoming HADFA Phase 2, which will focus on the provider-facing application and integration into TME using dynamic VMRs. Dynamic VMRs will be made

available in January 2017. Right now we're testing in our home-based environment and we're working out some of the protocols before engaging those dynamic VMRs.

We're also looking into Mobile Device Application Review and looking forward to making HADFA available on Google Play and the Apple App Store at the end of this period performance, which would be August of 2017. It may not be available at that time, but that is when we will begin dissemination to Veterans and to the field. And I would like to turn it back over to Denise and those on the call for fielding any questions. . Thank you so much for joining our presentation.

DENISE KENNEDY: Excellent. Thanks, Brian. We do have a question here. Is the audio during the visit coming through the Veteran's hearing aid or on the phone?

BRIAN STEVENSON: So that is coming through the speaker on the phone.

DENISE KENNEDY: Okay. And, it looks like there are a few people typing, so do you want to talk a little bit about pushing

this out and creating some awareness around the app? Are there any opportunities for any of our listeners to help you spread the word about the app?

BRIAN STEVENSON: Absolutely. We've already established some rather savvy clinical champion teams at the James A. Lovell VA HC, Miami VA HC and Louis Stokes Cleveland. If you're interested, reach back out to us if you'd like to participate in the pilot.

Perhaps you're a Veteran or a Veteran employee that would like to experience this remote service to have your hearing aids augmented. OIT has provided us with the smartphones and equipment to do it and we're just now beginning to field those Veteran participants who are going to help us develop this further. Also, we have VA Pulse. I'm going to drop a link in the chat right now -- here is HADFA on VA Pulse.

Join a team, leave comments, ask questions-- and there's a lot of video there for you to view and experience how HADFA might operate, so please check that out. We'll also interface with public relations as our product grows into fruition.

DENISE KENNEDY: Excellent.

BRIAN STEVENSON: We welcome recommendations.

DENISE KENNEDY: Excellent. Thanks, Brian, didn't mean to cut you off there. We do have a couple of other questions here. The first one is… How is this different from the TeleAudiology program, especially the equipment used? Or is this similar?

BRIAN STEVENSON: So yes and no-- it may be similar. But what it does is it creates a virtual meeting room by which the Veteran doesn't have to come into a facility. And the fact that we're actually integrating with TMP, the Telehealth Management Platform, means that we're going to be able to schedule things out in advance or even, perhaps, have ad hoc experiences or encounters.

And this will lay some groundwork for other Telehealth modalities that would like use the same type of protocol with TMP for their needs. Does that get close? Would you like me to embellish more or maybe Dr. Gladden has something to say about that?

DENISE KENNEDY: Dr. Gladden, anything to add to that?

CHAD GLADDEN: Yeah, I do. Most of the services right now are being carried out or are services are from a given provider to set CBOC using some standard desktop video conferencing. Sometimes it is a webcam, generally connecting to some established hardware and peripheral devices. So that's the way that we are doing the fittings follow up services right now. This app does create the potential to do a lot of the aftercare types of visits actually in a home, so the dynamic of how the connection is made is a little bit different since we're using an app and a webcam virtual meeting room to facilitate that. But it changes the dynamic from where services are placed-- not at a given medical center or associated CBOC, but actually in a home environment which is a huge plus for providing more convenient and accessible care.

DENISE KENNEDY: Excellent. And this one might be for you Dr. Gladden; or Brian, if you want to chime in. How will the programming work with different hearing aid companies?

BRIAN STEVENSON: Well, there are two different manufacturers moving ahead with HADFA. We've established a general

framework that each one of the manufacturers, or at least the two that we're currently working with, are adhering to. And so they're basically embedding our video conferencing capabilities, our scheduling system and the dynamic virtual waiting rooms processes into their apps. We see quite a bit of interest from the other hearing aid manufacturers. Once we can work through this with two of those vendors, there would be opportunity for the others on contract to follow as well.

CHAD GLADDEN: I might embellish that to say that this specific contract was to have two of our major manufacturers provide HADFA solutions. So we went through the CVN Telehealth [INAUDIBLE] and wrote a task order for this, and received a response from Oticon and from Phonak, so they're both developing for HADFA. Think of HADFA as just a version of the hearing aid distance fitting application per the manufacturer hearing aid type. In the future, we hope to see this transaction inspire other manufacturers to develop similar apps for use with their Bluetooth technology and smart devices.

DENISE KENNEDY: Excellent. And another question here-- can you explain the VMR and VVC a little more?

BRIAN STEVENSON: Sure. On the [INAUDIBLE] TRM, we specifically sighted in our requirements that we wanted to utilize applications that the VA had already taken the time to integrate into the architecture. So we did our homework first and found the Connected Care Community has been utilizing VA Video Connect.

VVC is similar to Cisco Jabber. The virtual meeting room is the place in the cloud between the VA firewall and the Veteran in the external space where they come together.

Any of you who have used FaceTime and things like that-- you're connecting two places. Ours is a bit more secure because of the authentication process but the VMR is the result of the VVC connection where the encounter actually takes place. Dr. Gladden, do you think I covered that well or would you like to embellish anything there?

CHAD GLADDEN: No, that's exactly what the virtual meeting room is. It essentially allows two connections – one from a patient, the other from a provider – to meet at a given time. It also builds into what Brian had talked about and that's the Telehealth Management Platform.

That is a scheduling application and has been something the telehealth community has looked for because of the dynamics of telehealth where we are not only scheduling a given provider. It's also the space and a given endpoint when we're looking at managing some of the bandwidth requirements and a variety of other things. The virtual meeting space builds into an overall infrastructure that is evolving into something needed for quite some time. Resources that have been put into making that come to fruition.

DENISE KENNEDY: Excellent. And we have another question here. Are there telehealth audiology modalities that actually have the patient completing hearing testing at a remote CBOC and a provider elsewhere?

BRIAN STEVENSON: So that leans into AACE a little bit doesn't it, Dr. Gladden?

CHAD GLADDEN: Yes, the current diagnostics are going on, but yes.

BRIAN STEVENSON: So we're working on a couple of projects

that deal with remote testing or allow the Veteran to come in and handle maybe 90 percent of their own tests, whereby the encounter is only a 10 percent feature. It's like testing for a product like AACE, which stands for Automated Audiology Clinical Extenders; that's a topic for a whole other mobile discussion series that we'd love to show you all. What about additional modalities for HADFA, Dr. Gladden?

CHAD GLADDEN: In theory, it's just the ability to embed HADFA or the video connection. We're embedding video into our virtual meeting room, as well as the scheduling system.

BRIAN STEVENSON: What's the process?

CHAD GLADDEN: It potentially could be embraced or used with other smart-based devices; tablets for instance, where they're doing some of the audiometric testing or some of the automated testing where you might be able to do a live video encounter with the patient in the same framework that we're using for HADFA.

[INTERPOSING VOICES]

CHAD GLADDEN: --audiology applications are moving in that direction with live synchronous opportunities. Being able to bring that into their infrastructure is becoming more of a reality.

DENISE KENNEDY: Excellent. Thank you. Can you tell us a little bit about how this idea became a reality? Was this innovation part of the employee competition?

BRIAN STEVENSON: So no, it wasn't exactly. I know that most folks getting to know VHA Innovation over the year have come to know us by way of the Employee Innovation Competition through the VA Idea House. I will sidestep and talk about that a little bit-- that's how we get our work.

We don't choose our jobs. There's quite an array of expertise that comes to the table and helps us define what our jobs will be – we love all of the work that we're handed.

So with innovation being disruptive by nature, this is something that came to us by way of strategic competition, or industry competition. It's governed by a different set of authorities. VACI can often be involved in that.

And this came around in 2012 and has seen a few changes. Initially, when I talked about the distance hearing aid fitting device that was where it started. It had to grow up from the 2012 endeavor, which had an interim device that hung about the neck. As you can imagine, that is kind of cumbersome in today's technology. In 2012, it may have been a bit more cutting edge. We took a look at signal loss and things like that and in the coming age of video conferencing and all of its capabilities, it was a smart to move away from hardware-based systems and go with soft-based platform for iOS and Android.

DENISE KENNEDY: Excellent. I don't see any other questions coming in right now. I don't know if you have, Brian or Dr. Gladden, any final thoughts while we give a last call for questions here in the chat box. I don't see anyone typing, but-- oh, now I see someone typing. But if you have any other things that you want to expand on here while we wait for these last questions to come in.

BRIAN STEVENSON: All right, I want to thank you all. I know we had an hour to talk, but sometimes an hour is a long time. And one of the great joys about this for us is its simplicity and its

effectiveness and its capability to get to the point quickly in what it does and follow up to the scheduling parameters that we're attaching it to. Dr. Gladden, do you have and highlights you'd like to share?

CHAD GLADDEN: No, I don't think so. You've hit on most of them. I think it is a technology that's getting out the door-- a lot of work that's been done just to get it to this point. But I do know that it's something that, I think, will be embraced and then widely used within the audiology community once we get to that point. But very exciting work and it is great to be a partner of the Innovation Group as we bring this forward, so thanks.

DENISE KENNEDY: We did have one question that popped up here and I hope I'm reading this right. If the Veteran has a CommPilot, will they be able to hear through their hearing aids?

BRIAN STEVENSON: Dr. Gladden, I don't know what a CommPilot is.

CHAD GLADDEN: Yeah, so they will be able. So you're

interfacing directly with the hearing aid. We're using Bluetooth Low Energy essentially from the phone directly to the hearing aid to make that type of a connection. So if there are additional accessories, those would potentially be used as long as it would be compatible with Bluetooth Low Energy.

So the CommPilot, for instance, that being an older device-- there may need to be some updates or upgrades to that existing unit to communicate effectively with HADFA. So there may be some scenarios where older pieces of technology may not be compatible, but for any of the new hearing aids that are coming out-- they're all going to be Bluetooth Low Energy and be able to use smart devices with a programming interface.

DENISE KENNEDY: Excellent. And for those of you who did not see the question and response on the chat feature, August 2017 is the estimated timeline for completion. And with that, I definitely want to thank you, Brian and Dr. Gladden, for this great presentation.

Brian has included some links on the post where you can get the slides. Also, there is the Discussion Series link and a recording of this webinar that will be included in a couple of

weeks on the website listed on that chat. And if we just go to the next slide here, there is a link for any feedback that you have for us. Let us know about any additional webinars that you would like to see.

And with that, we'll get back to your Friday. I hope everyone has a very happy New Year. Our next Discussion Series will be in January on REVAMP, and we're very much looking forward to reconnecting with everyone then. So with that, thank you so much. Have a great holiday and Friday. Thanks so much, Brian and Dr. Gladden.