DENISE KENNEDY:

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.

You have the option to listen to the presentation through your computer or on the phone. If you want to dial in using your phone, please dial 201-479-4595 and enter pass code 278-96-558. The dial in information can be found on the slide in our presentation and was just also pasted into the chat feature in the lower right-hand side of your screen. If the chat box is not visible on your screen, click the light gray chat bubble, located at the bottom right, and the chat box will appear.

If you have your chat box open, you will notice we just pasted a link. If you would like to download the presentation, please copy and paste this link into your browser, and follow the instructions for downloading. Your phone lines are muted, but if you are experiencing any technical difficulties, please use the chat function, and someone will be in touch. If you would like to participate on Twitter, please use the hashtag #VAmobilehealth.

To respect everyone's schedules, we'll keep this moving so the session ends on time. If you have any questions for Eric, please use the chat feature, and we will get to them as time allows. If we don't get to your question, we will send out an email following this webinar with any relevant answers.

With that, I'll turn this over to Eric Guidash, Web and Mobile Solutions Project Manager in VA's Connected Health office. Today, Eric is going to spend the first part of the presentation introducing mobile imaging. From there, we will turn it over to Jonathan Draper, Senior Project Manager for Calgary Scientific, to give you a demo of the imaging product. Eric, over to you.

Eric? We can't hear you. You might be on mute.

Please stand by. We're having some technical difficulties. We'll be with you in a second.

ERIC GUIDASH: Hey, this is Eric. I'm here. I don't know what it was. I got kind of delayed on that. But it sounds like somebody's moving around a lot of paperwork, and it's static, and I think it's overriding me talking.

DENISE KENNEDY: Thanks, Eric. I think we're working on that on our side, but we can hear you great now. Thank you so much.

ERIC GUIDASH: All right. Hello, everyone, and thanks for joining today's presentation, and welcome. Again, my name is Eric Guidash. I work for the Office of Connected Health, Web and Mobile Solutions as a Project Manager. Today we will be going over an overview of the Mobile Vista Imaging Project, as well as a demonstration of the product, and then of course any questions that you may have.

So, this has been somewhat of a long effort. I've got a slide here on the Mobile Imaging Project Journey, and essentially, the impetus for the start of this project was back in fall of 2012. And at that point, we started doing market research, or the organization started doing market research, with industry, to figure out what's on the market, what's available, what kind of technology is out there, and how it meets our needs. So that went through from fall of 2012 and into spring of 2013, at which point in time we started to build a procurement package, and that was turned over to the contracting shop in summer of 2013. And through the procurement process, a contract award was finally made in mid-February of 2014.

Since then, the project was kicked off in March of 2014. And basically during that start date and now, there's been work on solution prep, testing, and pilot. [INAUDIBLE] is that we will get to a point of national release and start implementation [INAUDIBLE] late 2015 and [INAUDIBLE] take us through probably sometime in fall for national release. There's a dependency, and we're still trying to figure out the schedule on that, and you'll see that later in the slide deck.

So, the VA's Mobile Imaging Project really has numerous aliases that you'll hear, and it really is this project. So I've come across some of these aliases, and sometimes you hear multiple names for things and wonder what they are. But our project really is called the Mobile Image Viewing Solution. It's known in short as IVS, for Image Viewing Solution. It's also been known to be called Mobile Imaging, ResolutionMD, and ResMD.

Now, the core feature of this solution is the ResolutionMD product, which is an FDA approved medical device. It's a COTS product. So that provides the core software and functionality that will be produced through this solution, and then it has some APIs that tie it into or sets it on top of this imaging. So it basically provides diagnostic quality images, primarily for mobile devices. So it's taking this imaging and moving it to a mobile platform to make it portable.

So basically what it does is the solution aggregates images from instances of this imaging nationwide. So there are local VIXs at each of the facilities. It goes out, and it consolidates all these images through the technology that exists under VistA imaging, and then it provides that on a mobile device, and it provides you the capabilities to work those images, things such as zoom and rotating, changing viewpoints, measuring. There's just numerous features that can be done with that.

One of the important things with it is there's a collaboration tool that can be used with clinical staff. So that collaboration tool provides real-time collaboration capability for multiple users, like if you're doing a remote consult training or what have you. And the collaboration tool is HIPAA-compliant with no exposed PHI during collaboration.

Parts of the solutions that you will see. It's basic. It has interfaces, or GUI interfaces, or app interfaces, whatever you want to call them, but it provides an iOS interface, which is an Apple version that would show up on your Apple mobile devices, an Android app version that would be used for other mobile devices, and it also has an HTML client version. And what that means is it can run in a web browser.

And so when it runs in a web browser, it can run on a web browser on a mobile

device, such as a Windows Mobile tablet, or it can also run on a desktop. So you have a desktop at your office, and it's tied into VA network, and you can use this as a viewer on that desktop as well. And VA-wide, we have an unlimited enterprise license, so it can be used by all staff, VA-wide, whatever we need for it.

User information. So there's some specific things that you need to know or be made aware of. So the solution is intended for use as a diagnostic review and analysis tool by clinical staff. Those clinical staff must have VistA credentials. Being that this is tied into VistA Imaging, one of our VistA systems, you have to have VistA credentials, and this solution uses those credentials to allow you access to it.

The other part of it is if it's being used on a mobile device, which is the main intent of it, that mobile device has to be a government furnished equipment. And government furnished equipment has to be registered with VA's Mobile Device Manager. So OINT has set up a process to try and integrate mobile devices into VA's network.

So your mobile device has to be on the VA network, and to do that there's two main modes of getting it onto VA network. Each of the facilities have a local VA Wi-Fi network, so if you're simply using the mobile device doing rounds or whatever in a hospital, or at a place where you don't have access to desktop VistA Imaging, that device is simply on the VA network or the VA Wi-Fi network, which means it's already on the network, and you have access just like you would with your VA desktop. If you're remote, and you're not on VA Wi-Fi network, then you can get in through either cellular connection, which means the device has to have a data plan, or you can also [INAUDIBLE] through a non-VA Wi-Fi network that you may be located on, as long as each of these have an [INAUDIBLE].

DENISE KENNEDY: Hello, everyone. We're getting some feedback on the line and having some technical difficulties on the back end. If you're on your audio line, can you please mute your phone manually? Thanks so much. Eric, thanks for being patient with this. Thank you.

ERIC GUIDASH: OK, so as long as either of those access cellular or a non-VA Wi-Fi provider and you

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have access to an internet connection, then you can get in the VA network. But to do that, you have to have what they call VPN, a Virtual Private Network. And you have to remote in through that VPN. And VA has that capability.

So on a mobile device, there is a client that is on there, and it's the Cisco client, and it's loaded on there, and basically you would use your credentials, just like you do a VA system, and you would remote in to the VA network, whether it be you're on your home Wi-Fi network, or you're using a data plan with cellular connection. And you would be connected through that VPN to the VA network. But you must be on the VA network to use this system, just like any other VistA system that's out there on the desktop systems that are on the VA network.

So here's some technical information that folks may want to know, and some you may not care about, but this solution renders images on a server. As part of the solution, there is a bank of servers, and they're called ResMD servers. And what these servers do is they render the image. Once they pull it from this imaging, they render it, and they display it on the mobile device.

The good part about that, or the pro of that is, there is no persistent data on the mobile device because the servers do render it. They just display it on your device. So if that device is ever lost or stolen, there's no leakage of VA sensitive or PHI information.

So the solution protects personally identifiable information and protected health information, as well as the fidelity of the image. Insurance solution usage is HIPAA-compliant in that images cannot be manipulated through the solution. It's a read-only solution. But again, it does provide those features and tools where you can manipulate the view of images, or you can collaborate with other clinical staff on a remote consult training or anything else that's needed. So it does pull the images from VistA Imaging, and the way it does that is through [INAUDIBLE].

DENISE KENNEDY: Sorry to interrupt again, Eric. If you are using your computer to dial in, can you please also mute your mic, as we're hearing some typing in the background? Thank you.

ERIC GUIDASH: Thanks. So, each facility has a VIX, and that VIX is VistA Imaging, and so it's a localized server that sits there. And it really [INAUDIBLE] where [INAUDIBLE] that is our main point of [INAUDIBLE] really a centralized index can actually go and pull images from multiple or any facilities that are within our system.

The solution provides for technical support 24/7, so 24 hours a day, seven days a week, via telephone, vendor website, and email support. So there is a pretty robust support put in place for it.

One of the features to note about this is the solution is not tied to PACS systems. So VA's policy is that PACS systems will push images to VistA Imaging as the storage for VistA Imaging. And so when this solution was configured, it is configured to use VistA Imaging.

That main cost product also does have the ability to tie to PACS, as it's got the APIs and that to do that, but with our configuration and our policy, it doesn't make sense to do that, so it directly ties to the VistA Imaging. So, if there is a case where a facility is not pushing images from PACS to VistA Imaging, you will not be able to see them. You won't be able see them in VistA Imaging, you won't be able to see them in the solution.

So the project status. So currently, we did a pilot. Once we did get the pilot, we did a pilot. It was done at the Puget Sound VA Medical Center. It was completed in late December.

That site was chosen because it has two things. It's got what we call the VistA Imaging Patch 138, which is a patch for VistA Imaging that's in a tested scenario, and it's a dependency for this solution. That patch provides the web services for any third party solutions to access VistA Imaging and pull those images from VistA Imaging. So that patch is currently at six or seven sites, but Puget Sound has that patch, and they've been working it and using it and working with the test team for any issues that are going with it.

But the other thing Puget Sound has is it already has government furnished mobile

devices. And of course, the other minor dependency on this is that you do have to have government furnished equipment or mobile devices, and so that's currently being done on another effort through VHA. And there are facilities that already have these, and then there are facilities that don't.

So what we're doing right now is we're in the mode of we finished pilot. We're going through the process of gaining approval for national release, which is through OINT and VHA. They both have their release processes. And then once those approvals are given, we have to probably align with the release of Patch 138, due to the dependency on the web services that are needed to access VistA Imaging.

Once we do get to deployment, we know that deployment's probably going to take approximately eight months. And the plan is to do a rolling deployment by VISN. So every few weeks, we'll go out to a VISN, implement, check, make sure everything's working, and then get the sign off that that VISN's done, and then we'll move on to the next VISN.

So again, the start of this is still in flux, and it's dependent on that Patch 138. We are currently following that to gain a release date on it, and we will more than likely align with that release date. Our expectation is probably sometime in mid to late spring we'll do that, and we'll be able to start releasing, and then we will finalize releasing of the solution by fall. Sometime in the fall.

DENISE KENNEDY:	Before you turn it over to Jonathan, Eric, we do have a question from Cliff. He wants to know, "How does an end user log into this application? Is that information logged or tracked?"
ERIC GUIDASH:	It is. So they log in with their VistA credentials, and this solution uses those. It's build on top of VistA Imaging. It uses the standard VA credential and authentication and authorization, and so their VistA access codes will get them into the solution.
	And then there is an audit log. We did run through that, and when you access stuff like this, you have to be able to audit it. And VistA Imaging has that capability. So this solution, when somebody's coming in through this solution, their credentials are

passed all the way through to those audit logs in VistA Imaging so that when those audit logs are viewed, you can tell who entered, what they looked for, and what they accessed.

DENISE KENNEDY: Great, thanks. And that's our only question. If you have other questions, please use the chat feature, and we'll stop periodically for them. And please remember to keep your lines muted. Thank you.

ERIC GUIDASH: So at this point, we have a demo that we're going to provide to you for the solution. And Jonathan Draper from Calgary Scientific, the folks that developed all this, is going to provide you the demo.

JONATHAN DRAPER: Hi, thanks, Eric. So I'm going to just switch from the slides to share my web browser, and then walk you through this demonstration. So you should be seeing now the page that says Study Browser. And this is running in Google Chrome on my Mac computer. You could just as easily run it on Internet Explorer on Windows computer. It's really agnostic to the platform that you're using. As Eric mentioned, we have solutions that are on iOS and Android devices as well. So it really is a very accessible solution.

So what I'll do at this point here is query for some data. So this will connect to the VistA Imaging back end, and you can query for any different patient information there if you've got a particular patient ID or whatever the criteria is, and then double click on this to load it into the view.

So as this is loading in, I just want to point out that none of the data is actually being downloaded to my computer, as Eric pointed out before. Everything is done on the server in the back end. All the images are processed and rendered there and then just transmitted in real time down to the client. So as you can see, I can scroll through a large stack of images.

This is a CT scan of the abdomen with some contrast in the aorta. Very large data set. So this one would be several hundred megabytes, and you don't need to wait for anything to be downloaded to your device. So you get fast time to view your

images. And then the security aspect, the fact that you haven't downloaded any images. If you lose your laptop or your iPad in a taxi cab, you haven't lost confidential patient information with that device.

As it was mentioned, this is a fully diagnostically cleared solution by the FDA, a 510(k) Class II device. We can do the basic functionality that you would do in a hospital radiology reading workstation. So I can scroll into the images, zoom in, pan the images around, or adjust the brightness and contrast.

Now just to comment that through the webinar, you might see some delayed performance. As you're actually interacting and using the system, you get very fast and responsive performance.

DENISE KENNEDY: And Jonathan. Oh, I'm sorry to interrupt, Jonathan. We do have a question. Can you open a comparison study at the same time, for example, a CT or MRI?

JONATHAN DRAPER: Yes, absolutely. I have just one data set that's been anonymized for the purposes of the demonstration today, but any CTs or MRs, other data sets, you can load them and view them side by side. Just for demonstration purposes here, I'll go to a split view and load the same data set alongside it here. So you can get multiple views lined up side by side and have reference lines that show how they relate to one another.

One feature that we have in here is a related studies feature. So if you're looking at a patient, if you know that they were scanned maybe a month ago, six months ago, to hit the related studies, it'll go back into that archive and query for that patient again, based on matching patient criteria. In this case, I've got some non-DICOM data that's associated with this patient that I can view alongside with this data set.

So here's a JPEG image and also a video clip. Now, the video clip really won't come through well on the webinar. But just to give you a sense of what it will look like, I'll just let it load and play, and I'll pause it there so you can see how it appears. But yes, it's possible to get all of those different data sets, different studies, and compare them side by side.

Aside from the basic 2D viewing, we've got some other tools. You could annotate on there, place measurements, or place a [INAUDIBLE] in a stack, and then some advanced viewing functionality as well. So if I go to select a [? MIS/NPR ?] view, this lets us do some advanced visualization that you might not be able to do outside the hospital in many cases. Let's expand it to the full screen here.

And now we're looking at, all fully reconstructed on the fly, these sagittal or coronal reconstructions. I can double click on the view to bring the coronal view to the large screen. And then just by adjusting some of these reference lines on the side, I can adjust the orientation and positioning of the slides so that I can get a good look at the aneurysm and the aorta of this patient.

I can also look at a six slab rendering of the data as well. So if I want to go from a 10-millimeter slab up to, let's say, a 40-millimeter slab, then you can really get a good representation of the aneurysm that this patient is dealing with. You can see a lot of calcified plaque in there, as well as the ballooning here, so obviously this is a patient that they'd want to take to surgery right away.

So a lot of information here. Easier to visualize than what you might see on just the basic 2D images.

Going a little bit beyond that, we can look at full 3D renderings as well. So again, this is all done on the back end as well, in real time. None of this is pre-cast and loaded on the server. But we just load the original slices, and then compute these in real time, and stream them down to the device.

As you can see, it's fully interactive, so I can rotate around the images, zoom into it. I'll also do a little bit of segmentation here. So if I want to really look at the blood vessel here, and maybe get rid of the bone, I'll just place a couple of points on here. Let's say I want to keep the blood vessel. Let's remove the bone here, segment, and it'll take out all that bone on the back end. I can bring it back a little bit so you can see some landmarks in the background, but really focus on the aneurysm there.

I'm going to, at this point, just switch over to my iPad and show you some of the functionality on that as well.

OK, so you should see in just a moment.

My iPad screen's sharing on there. So this is the same functionality as the study browser that I brought up first in Chrome, tuned for the iOS device. And again, you get the same functionality if you're logged into your Android device, using that application. So I'll search for the patient here, get a list of all of your records, and then again just load that data into the server and have the images sent down in real time to my device.

Now with a touch device, a mobile device, you've got some different interactions, and the UI, User Interface, is tuned a little bit differently because it's a different interface than using a mouse and keyboard. So now the gestures are very familiar for a mobile device, so I can just drag my finger up and down the screen to scroll through the images. I'm just using a pinch gesture to zoom in and two fingers to drag the image around.

And then again, as we had on the web browser, some of this other functionality. If you want to do some measurements, for example, measure across the kidney here. So my finger is going over-- I'll come over to the spine and measure across there. So my finger's on the spine, and you get that nice lens view up to the top left of the screen that shows you a nice magnified view so you can get good precision, actually, where you want to place that measurement. So you can see, 48 millimeters across that.

We can do the same advanced views, so switching it over to the [? NIC/NPR. ?] We can look at the sagittal reconstruction in real time and adjust the thickness of the rendering.

And then finally the 3D as well.

So the ability to have this advanced functionality on an iPad is great. There's lots of

different use cases for it. Just one, for example, is a doctor in a hospital that's going bedside with a patient. They can actually take a device right out to the patient and show them images that they can understand and have a good conversation with them and help to communicate what's going on with that patient. Especially the 3D reconstructions, they're good for the patients. The 2D images are a little bit more difficult to understand and build up the picture in your mind of what's actually happening in your body.

I'm going to switch back over to my web browser to show you the collaboration functionality. So Eric mentioned that we've got the capabilities to bring multiple users together to look at images and really work in a collaborative fashion in looking at these images. So I'll just bring this up here and copy the collaboration link. And you can either send it by email-- I'm just going to put it in another chat window here to send to my colleague.

And you can send this out to multiple different parties as well. It's not just one to one. You can send it out to multiple different people.

And really the use cases that we have seen for this are vast. You can have a more junior radiologist in the hospital that's looking at some images and needs the opinion of the senior radiologist who may be at home for the evening or out on a date for the evening. Rather than having to have that person come back into the hospital to look at images, they can step out of whatever they're doing, and pull up a link on their mobile device, and get immediate access into the images, make a decision on the treatment of that patient, and continue to go on with what they're doing.

So I can see here in my panel here, Abdul has joined the session with me. I'm going to give him interactive control. And so now, on his screen, you'll have to just imagine here, he's seeing exactly what I'm seeing, and he can actually control the images as well. So as he scrolls around, I can see his cursor on there, and he's controlling the images now, so he can talk me through something while we're looking at the images.

Just to take it a step further here then, we've just recently added this capability here for the voice and video. So you'll see my face appear on here as I turn on my video screen and then Abdul as well. So now we can have a full conversation here about this patient, looking at the images. We don't have to bring up another application, but we can move these images around if I'm looking at something. And he can see the transparency behind there, so you can see the video right in the context of the patient view.

So really it's about bringing access to all the information throughout the enterprise about the patient so that you can see all the different kinds of records, all the images, do everything that you need to do with them, and as you're collaborating now, bringing people together so that you can look at all these images and make decisions together, all in one place. One thing to point out as I'm collaborating here, all of the patient information that you would have seen previously in the top corner here is now gone. So it's in a completely confidential mode. There's no patient information on the screen.

The link that Abdul received, it doesn't have any patient information as well. It's just a link with an expiring token in it. As soon as I end the session here, he will receive a notification on his desktop or his mobile device that says the session has ended. And the link that he received from me is a dead link. It doesn't go anywhere now. So it's a completely secure patient confidentiality, but it provides all the information that the doctors need to make those important treatment decisions.

I'll switch it back over to the presentation there, unless there are any questions about that.

DENISE KENNEDY: We don't have any additional questions. We'll give everyone a minute to see if another one comes in or if Eric or Jonathan, you have anything to add.

OK, with that, we can wrap it up. Thank you all for your participation today. A link to a survey will be sent to you today. Please take the survey, and let us know what you thought of today's presentation and what topics you would like us to cover in the

future. We hope you join us next month for our presentation on MOVE! Coach.

Oh, we do have one comment that I want to read here. "This is really impressive, but is there a plan to develop a non-view only mode that could be used for Telederm?"

ERIC GUIDASH: Boy, I'm not sure what they mean by non-view only mode. Hey, and I was talking to the mute, so I missed those couple of slides for the references.

DENISE KENNEDY: OK. Jane, we'll follow up with you and get some more information and connect with you afterwards and make sure we get your question answered. And Eric has his-- we have some links for the presentation. We'll also send the presentation to you, so some additional links that you can access information. And also we'll send a survey and a copy of the slides to you out today.

And next month, we're going to focus on MOVE! Coach. And thank you, everyone, for your participation. And with that, we will wrap up today's session.

ERIC GUIDASH: Thanks, everyone.

JONATHAN DRAPER: Thanks, everybody.