DENISE KENNEDY: Hello, everyone. Welcome, and thank you for attending our VA Mobile Health Discussion series. My name is Denise Kennedy. Let me run through a few brief technical reminders before we begin the discussion about product effectiveness. 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 that is available to you at the right of your screen.

So to respect everyone's schedule, let's keep this moving so the session ends on time. Today we welcome Ferenc Ayer, program manager for VHA Product Effectiveness. As I mentioned before, if you have any questions, please use the chat feature. We're going to stop the presentation intermittently to answer those questions.

And to download the presentation, please highlight the file on the bottom right of the screen. And if you double click it, it'll prompt you download that. So with that, I'll turn it over to our presenter. Ferenc, over to you.

FERENC AYER: Great. Thank you very much. Good afternoon, everybody. What I wanted to cover during this afternoon's session is really basically what is or who is product effectiveness, what do we do, how are we involved, especially when it comes to connected care. And I also wanted to provide you some examples of just what it is that we've done. It's kind of a larger example and then the smaller example. And then lastly, I wanted to leave you with some tools that we've developed and our team has developed for teams that are involved in mobile app development. So I'm just going to continue here.

What is product effectiveness? Product Effectiveness is actually an organization that was formally in 10a but now we're in a new office of organizational excellence. And we reside within the office of Quality, Safety, and Value. Our charge is really to conduct independent assessments of various products and process improvements across the VA chain. Our focus is very much on the business value or you can even call the enterprise value of change. So what we're doing is, what is the impact to the enterprise?

And ultimately, our goal is very much to be independent of the project or program team that are implementing change and as objective as possible, being a VHA entity. But ultimately, what we want to do is come and look at these products, understand how effective they are, are they meeting their goals, and what decisions you need to make based on our findings. So we try to come up with recommendations that program teams can then use to get decide the next steps for their product.

As far as how we support Connected Care, we've had a longstanding relationship going back to when Connected Health was first founded. What we do is primarily-- we've been asked to look at various components of the Connected Care product offering or service line. The main thing that we do, however, is put together a measurement strategy or measurement approach for how we can evaluate products that are being released or even process changes that accompany those products.

So generally our approach is pretty much standard, in the sense that what we do is we actually come in and develop a measurement approach for how to evaluate a product. We collect data once it's available. We analyze the data, and we report on it. So that is, more or less, what we do every time. And obviously our methodology can be applied to the current state, so baselining efforts that can be applied to what I call transition efforts, which is usually like a pilot or something that is meant to go through iterations that may not be the final product, and then the future state products as well. How do we prepare ourselves for a big change that may be a year or two away?

And then it ultimately gets down to, OK, what is the purpose? Why do we want to assess in the first place? And this is a slide-- and I'll get to this in a little bit as well-- but I've included a presentation I made at VeHU a few years back. And this is one of the slides that I borrowed from that deck. But ultimately, the reason you want to do all this, you want to go through evaluations and testing, is you want to understand whether your products are functioning properly. Are they yielding the benefits that you expected? Are your end users using the product effectively? Are they satisfied with them? And do we have the infrastructure in place to support the products? So ultimately, are you maximizing your investment?

And then lastly, I think on one of the previous slides I identified that our approach is very much based on that enterprise value. And what we do, from a data collection perspective, is we look at both quantitative data, which we generally identify system-derived data, so that could be something like a VSSD database. If we're talking about wireless devices, it could be data utilization. It could be bandwidth utilization.

Qualitative is another aspect of what we do. And that's usually survey-based or interview-based or other similar paper-based responses. In qualitative, the qualitative aspect-- which can be quantified as well-- but that is kind of the reason I wanted to talk to everybody here today, is that this is the request that we get the most often. Because some of the most difficult things to measure are usually not easily measurable. So that tends to be the qualitative aspect of a lot of products and process improvements.

And with this slide here, it just provides additional detail from a qualitative perspective especially, what is our approach on how we work with Connected Care teams as they develop their products. And usually we work with teams in collaboration with their subject matter experts to develop questionnaires. We put together web-based tools to collect the data. We help with the communication. We collect the data, analyze it, and report on it.

So that gets us to the first example. But before I get into it, I just wanted to open the floor for any questions up to this point.

DENISE KENNEDY: Thanks, Ferenc. So far, no questions. Just a reminder to those listening in, if you have a question, please type it in the chat box and we will stop periodically and answer anything that comes up. So back over to you.

FERENC AYER: Excellent. Thank you very much. So what I want to do here is I'm going to provide you with two examples. And again, my assumption is a lot of people are very interested in mobile apps and how do you develop them. And from my perspective is [INAUDIBLE] interesting, how do we measure that what we actually put out there is effective?

So what I'm doing here is I'm going to give you two examples of assessments that I've conducted here for Connected Health. The first one here is the Mobile Health Provider Program, which is the program that actually distributed iPads to initially three facilities, and then an additional 15. So this dates back a little bit to between March 2014 and June 2015. This is when I conducted the assessment.

But the point here is that when the Mobile Health Provider Program was initially rolled out, it originally targeted to 18 facilities, and roughly 7,000 iPads were distributed across the country to those 18 facilities. My program office worked with Connected Health at the time to conduct a very comprehensive measurement of how effective that rollout was. So we actually put together a very comprehensive measurement plan that looked at both the quantitative and the qualitative aspects of this rollout.

And ultimately our goal was to understand what are those initial experiences of the end users who were receiving these iPads, and what was the impact of their overall productivity? Because there were certain expectations coming in, that if you provide mobile access to people, especially into Vista and CPRS, that it should help them with their workflow, and it should help them as they treat patients. So in whatever capacity they're involved in patient care in the field, it should help them.

So we essentially took those goals and made them into measures within our measurement plan. The bulk, again, of the information I'm going to show you here is the qualitative aspect of it, because I think that was really where it yielded us the most important data. So let me just-- without further ado-- keep moving along here.

So the slide here that you're looking at really just defines, again, what I mentioned as far as-- what we did is we took the goals and objectives of the program, and we started deconstructing it into smaller and smaller pieces that we call-- so our process starts with what we call benefit outcomes. And an example of a benefit outcome might be satisfaction, increased end user satisfaction.

We then break that down into measurements. And measurements are basically groups of metrics. So if you're talking about satisfaction, you might have satisfaction [INAUDIBLE]. And then that might be a measurement. And then under that, you develop metrics, which could be based around various aspects of satisfaction.

So what this slide here really details, it's just how did we break this down. And this is specific to the questionnaire that we deployed. So we looked at various aspects. We wanted to get a profile of the users, so that's the demographics. We wanted to understand, from their

perspective, what was their experience with using the iPad? And then another category here-- and I'm in the middle bullet point, by the way-- another category was, what was the impact for the clinician specifically? What was the impact of their clinical workflow?

The next bullet is what was the utilization, and this is more quantitative information. And the utilization was qualitatively collected and also quantitatively, and we married the two up, to see how they matched. And in general satisfaction, which we always sprinkle in our questionnaires some general satisfaction, regarding people's experiences with the product itself. I'm going to keep moving on.

So the reason I wanted to show this is to really illustrate, based on our process, once we're done with everything what does the output look like? And in this particular case the output, then, is again categorized based on a lot of those sections that I mentioned. So what you see here it is an output based on all the people that we surveyed. What was the overall satisfaction rate with the iPad for this specific example. And you see it across all facilities, from overall satisfaction.

The second piece of our briefing here, now, is we wanted to start looking at, if you're going to start partitioning the data by what are ways that you can take-- especially a lot of this qualitative information-- and start getting some value out of it. So how do you try to understand relationships?

So for example, what you see here is the work setting. This was one of the things that we wanted to understand is how are people using these iPads? So what you see here is we try to categorize whether people are using it outside the hospital, are they using it in inpatient units, are they outpatient providers or staff? So again, this is really to try to start honing in on what is the profile of the person who's actually using this? How can we characterize them?

And also, obviously, this deck is going to be available to everyone, so I'm going through some of these slides quickly. I'm more just trying to illustrate the quality of the data that we're getting in and how this could be applied to your own endeavors or, in this particular case, how this helped us with some of the goals of the assessment.

Moving on, as far as the profile of the users, looking at the data-- and a lot of this data was really derived from what I think is always the best-- whenever you distribute a questionnaire, there's always a concern that if you give them a lot of questions with Likert scale responses, so a scale of 1 to 5, the concern is that people are just going to very quickly try to respond and not give you good solid answers. So what I always like to do, when I develop these questionnaires, is I like to put in some free form response, or ask them a positive, as far as how has this positively impacted someone, or what is a best practice that they've identified. I also try to put in a negative.

I feel that when people respond, in a free form manner, that is usually the highest quality of information that you get, as long as people give you good responses. So based on a lot of that

qualitative write-in feedback, for this particular assessment we're actually able to identify specific roles of people and what they were doing with their iPads. And that's what you see here and, I think, on the next slide as well, where we're able to draw better profile of our end users and show what they were doing with these iPads and how they were benefiting from them.

And for example here, you can see the top right picture there is a home-based primary care nurse, who can actually access the patient's chart and upcoming appointments while away from the facility. We found that home-based practitioners and home-based staff were some of the biggest beneficiaries of these iPads.

This slide here, I think, just identifies additional uses that people indicated were very helpful to them with these iPads, so for continuing education, for patient education, just obtaining resources like Micrometics and up to date.

And what you see here is we also wanted to look at-- realizing that whenever you deploy a wireless product at your facility, we wanted to look at data connection speed as well. So this is a little bit of us pulling in some of our quantitative data, to see if we can marry it up with the qualitative. And the purpose here, obviously, is if you have a facility-- and so if the facility is on the right there and had lower satisfaction responses. But if you were to look at the facilities on the right that generally did not respond very favorable to the surveys, then what are some root causes that you can look at, that may explain that?

So what you see here is that, if you take a look at some of these facilities that provided not the most stellar responses and then you look at the data connection speed at the facilities, then all of the sudden you start seeing correlations, that facilities that have the lowest satisfaction also had the lowest data connection speed, which is indicative of something, that maybe these people weren't too happy with their wireless devices because they didn't have very good data connection.

The other aspect of our assessment, obviously, is we want to understand what are some opportunities for improvement, what are some recommendations, and that's what this slide here demonstrates. I'm going to keep going. So that covers the first assessment. I'm just going to take a quick pause, in case there are any questions. I don't see anything in the chat window there.

DENISE KENNEDY: No questions yet. I think we can keep on rolling. And please remember, if you're listening in, if you have any questions we can stop periodically and tackle those as they come up.

FERENC AYER: OK. Perfect. Good. So the second example here, I think, is more applicable to a lot of the teams that I've had discussions with here over the last few months, which is an app, a mobile app that may going on a tablet PC, it may go on a desktop, it could even go on a phone. So what I want to show here, again, is I just want to highlight an app and how I collected the

data and what kind of information that yielded for us.

So the example that I'm showing here is an app called Preconception. Preconception Care. And it's an app that the Women's Health Services actually took into production, I think, back in 2014. So towards the end of 2014 it was being piloted. And our team was requested to come in and assess that app. And I feel that this is probably more in line with what most teams are going to be looking at, is a relatively small number of field testers or pilot testers or end users.

So for this particular case, what we wanted to look at is, again, how do we paint the portrait, or the profile, of the people who are participating in this? And what you see here is we had 40 testers total who were testing this Preconception app. They were all VA staff. And in this particular case, we had 19 respondents. So we're just showing you here which facility were they from, what their role, and what their work setting.

And what this does, obviously, is it helps us with our analysis, especially when we try to correlate data. Although the data set is very small, it can still help us, I think, with drawing some correlations. So this here, I think, is just an understanding of what's the frequency of use, how often did our field testers actually log in and use the product?

The next item here is just our key findings. So we try to be very short and sweet with these, be concise at a high level. What is the key takeaway here? So what you can see here is that, in this particular case with this app, is that four out of five of our respondents were either satisfied or very satisfied with the app itself.

We like to sprinkle in some quotes of what people think or provide us. And then what this here is we like to take various questions and then show you in a visual aspect of what were the responses like? Did people actually find this app very useful for various categories or various scenarios?

And then based on the previous chart, what did people say? What were some of the quotes? So we like to sprinkle those in as well. And again, this is additional questions about how did the app impact various patient care activities, so just different visualizations of the data.

And then what you're seeing here is some of the correlations here. So what we're looking at here is how women's health providers-- so people who indicated that they are women's health providers versus non-women's health providers-- how did the two of them respond? So this goes back to our characterization of the people responding.

And then similar to the last one here is areas of improvement. And then this concludes that second example. And I'm going to get to the toolkit.

DENISE KENNEDY: I see a question here from Jane. How much coordination did you do with Human Factors about the Preconception app? Some of the items you asked about are usability-related questions.

FERENC AYER: Yeah, Jane, good question. On a lot of the app assessments that we do, we work with Human Factors very closely, so collaboratively. From our perspective, as we're kind of the logical next step. So I think Human Factors often does either formative or summative assessments. What we are is even after that. So after the product is actually piloted, that's usually when we come in and do our assessments.

For this Preconception app, I do not recall how much collaboration we actually had with Human Factors. But on a lot of our assessments we're usually consumers of the Human Factors output. And I hope that answers your question.

So I've shown you some examples of-- and hopefully the examples are pretty clear-- I've shown you some examples of some of the assessments we've done. And as Jane mentioned, when it comes to field testing, there is a little bit usability. And who exactly is domain is that in? So obviously there is little bit of a fine line there.

But what I wanted to do now is to show you what I developed for other teams. Because clearly there are a lot of teams that are deploying apps, and many of them have come to me asking, exactly what's a good way to instill a tool or a questionnaire that is fairly standardized, that you can use in a lot of different apps, regardless of whether they're informative or they pull data or they can push data, or if they're light or heavy? What are some ways that we can actually put together a questionnaire?

And that's what I have here. And this is, obviously, not perfect. It's still, I think, ever-evolving. But what it is-- and it's called the Product Effectiveness Application Survey Framework. And it's just a Word document. But what it does is it does provide some guidance on what project and program teams should use, or what it is that they should be aware of as they're trying to evaluate field tests or pilot tests or whatever kind of evaluations that they're doing. Because I think a lot of times there may be instances where other teams, such as Human Factors or Product Effectiveness, are just not able to allocate resources to do the assessments. So this is kind of a self-help kind of document.

And the way this is configured is there is a document. And it's an attachment here, downloadable for everyone. What the Framework does is it-- I'll show you a picture of it-- it actually walks you through the scope of how you should do questionnaires. And one thing I'm going to do is change survey to questionnaire because, obviously, what we talk about a lot, when you deploy a mobile application is, we're not doing a direct survey necessarily. So we're not asking people about their jobs or their work environments or those kind of things. What we're really doing is we're asking a quality improvement assessment or a questionnaire. So I do need to change that in here.

But I think the gist of this is still what are some of the considerations that you need to take as you develop your own questionnaire? And that's really the purpose of it. This is intended to help teams, give some give them some guidance on how to develop their own questionnaires

for assessing their product. And I've put down a couple examples of how this is put together. What I wanted to do is put in some good examples that people can use, so they can take almost verbatim take out of this toolkit here and put into their own app assessment questionnaire. But other questions-- as you can see here, number 11 on top, are highly configurable.

So what you see here for number 11 is if you have an application that has multiple functions, you basically want to use the frame of this question here and fill in with what are some of those functions? So again, this is meant to be a framework that's highly modifiable. So if you have an app with, let's say, three key functions or features, what you do is you can take number 11 here, put in the three functions, and then that can be part of the questionnaire. And then you can use the same Likert scale to obtain the results.

And as you can see with number 12, there are areas where you can put in certain aspects, where you can configure these questions and get the responses that you need, and the responses as well.

The next slide here just has other questions that I think are more standard, that can probably be applied to that just about any application, especially the ones about efficiency. So if you look at, for example, question number 8 here, in the middle of the page, the question there would be like, using the blank app here, we'll say the substantial amount of time compared to my previous process. Number 9 is the standard overall satisfaction question. Number 10 is the Net Promoter Score, which in the industry has been shown to be a best practice kind of question, anytime you put out a questionnaire. So I would recommend this app to either other staff or veterans or people I know.

So these are some very standard questions. But again, they've been consolidated here for guidance. And the intention, again, is how do we consistently apply questionnaires to these tests and these pilots, using a very similar nomenclature, wording choices, so that we can start, ultimately, having a more standardized way of collecting this information and comparing it across.

The next slide here just has the copy of this toolkit. It also has a presentation that I mentioned earlier. It's actually a presentation I did at VeHU six years ago about all the considerations that you should make when you deploy iPads into a hospital setting.

And then lastly, if there any questions, my email is on the second-to-last page here.

DENISE KENNEDY: So we do have two questions for you here. The first one is, does Product Effectiveness run a field questionnaire on all the mobile apps released?

FERENC AYER: Yes. And I think the answer there-- and that's actually the reason that I came up with this toolkit-- the answer is no. Unfortunately, we have limited resources. So what we do is we actually have a prioritization meeting with Connected Health or Connected Care

leadership, where we try to prioritize which apps we work on. So I would actually say the vast majority of apps we do not work with the teams on.

DENISE KENNEDY: Great. Thanks. And then we also have a question, do you have behavioral psychologists on your team, to craft some of those questions?

FERENC AYER: We do have a couple PhDs on our teams. So we have a cross-disciplinary team on our side. We do have a couple PhDs that are more organizational behavior focused. But I would say, collectively, we've been doing assessments within the VA-- at least I have here for over six years-- so I think a lot of it is also just experience gained from having done a lot of comprehensive assessments. So yes, I would say we have both the folks with the background and education in this, as well as folks such as me who have actually just done this a very long time. And I've been able to identify what generally tends to be a best practice or utilizing industry best practices.

DENISE KENNEDY: Great. Thanks. And the last question that I see here is, how you assess impact to physician workflow and workload? How can you prove productivity has improved?

FERENC AYER: Yes. I think it obviously depends on what the app is. I think the easiest example for this might be the iPad. So the first example that I cited. Obviously, when you talk about physicians especially, there are so many different specialties, so many different settings, that it's very difficult, I think, to come across with a broad stroke and say this has increased efficiency whatever, 5% or 10%. So that's the reason that I really focus in on these case studies of physicians with the iPad.

So for example-- and I can't remember what slide that was-- but especially for inpatient versus outpatient, for example. If we were to look at physician in an outpatient setting, they may not benefit as much from, for example, from having an iPad accessible to them. Because they tend to-- if you're a primary care physician-- you probably have your own rooms, where patients come to you, you're going to have a desktop right there. You may not benefit so much from having mobile access. Your true benefit might be maybe that when you're at home, you can actually log in and check patient records. Or you can maybe do some education or do some lookups that you need to be behind the firewall on.

Other profiles, for example those home-based primary care staff especially, we were able to identify that there was a significant amount of efficiency by just the fact that they could pull up all this information. So I think the best way to do this is by discipline or by specialty. And then, generally speaking, from my perspective-- because I'm looking more across enterprise-- I don't necessarily do time motion studies, but that is one aspect that can be utilized. But from my perspective, I think I'm looking for more what are easily identifiable benefits that would resonate with a lot of people in that discipline or that setting? So for example, those home-based primary care folks, that's a very strong example. Another is inpatient physicians who are rounding or you've got your Pharm D's that round, with their ability to have mobile access to CPRS. I could easily come up with a very lowball estimate of how much does that save them

during the day, of not having to run back to their office and look up some charts, if they have a little iPad they could slip into their pocket?

Or if you have a shortage of workstations, again, even if it's 10 minutes a day saving for one Pharm D, for example, rounding, you extrapolate that across the country and you can come up with some tangible numbers. And that's obviously a very conservative number. But I try to stay very conservative. So a very lengthy answer on that, but I hope I answered that question.

DENISE KENNEDY: And drifting a little bit from the physician and provider perspective, we have a question about if PE is coordinating with anyone from the Veteran Experience team, looking at veteran employee experience? Are you collaborating for any best practices there?

FERENC AYER: No, actually that's a great question. I think we are one step removed from talking to Tom Allen and the Veterans Experience office. We're currently doing a lot of work with the VA Community Care Initiative. But we have not had any direct conversations with Tom Allen or his organization. But I think we're very open to it. I feel that as an organization with all of the assessments we've done-- and obviously Connected Health apps and Connected Care in general, is just a small piece of the work that we've done. So I think we are much broader across VHA. So I would welcome it. But if you can get me in touch I think it would be great.

DENISE KENNEDY: Excellent. And with that I think we have a wrap. Ferenc, do you have any last parting words for those still on the phone?

FERENC AYER: No. I think if anyone needs me, feel free to contact me. I'm [INAUDIBLE]. And thank you for the opportunity today. And I hope that this was informative and helpful.

DENISE KENNEDY: Thanks so much. And for those of you on the phone, if you look here at the left side, there is a questionnaire to let us know how we did today. Give us some feedback. Any topics you'd like to cover in the future, we do these one Friday a month. And with that, I'll give you back to your Friday. I hope everyone has a great weekend.

Ferenc, thanks again for joining us today. And we'll call it a wrap. Thanks all. Have a good day!

Thank you. Bye.