

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 about the Remote Veterans Apnea Management Platform – also known as REVAMP.

Your phone lines are muted. We will be taking questions through the chat feature. If you experience any technical difficulties, please use the chat function that is available to you at the right of your screen. To respect everyone's schedules we'll keep this moving so the session ends on time. Today we welcome Dr. Samuel Kuna from the Philadelphia VA Medical Center. He's the sleep center director, and is also the clinical lead on REVAMP. We also welcome Priyanna Mehta, working on REVAMP's quality assurance.

As I mentioned before, if you have any questions for our presenters please use the chat feature. If we don't get to your question, we will send out an email following this webinar with any relevant answers. To download the presentation, please click on the file name below the chat screen. With that, I'll turn it over to you, Dr. Kuna.

DR. SAMUEL KUNA: Well, thank you very much. REVAMP is, as mentioned, the Remote Veteran Apnea Management Platform, and it's a personalized interactive web application that we're developing for Veterans with obstructive sleep apnea. So REVAMP has a Veteran-facing platform that collects information from the patient and shares that information with the Veteran. REVAMP also has a practitioner-facing platform where practitioners can review the data that was entered by the patient and use it

to conduct patient management. The goals of REVAMP are to improve access to care, standardize delivery of care, increase staff efficiency and allow the VA to assess patient-centered outcomes-- who is using CPAP and determine benefits they get from the treatment. Then, we compare REVAMP outcomes across programs to improve delivery of care.

We've performed some initial pilot testing that's demonstrated the potential of REVAMP to lower costs, improve patient use of CPAP treatment and improve the health care experience of patients with sleep apnea.

We believe that REVAMP will fulfill an important need. OSA is recognized as the third most common chronic condition in the Veteran population, and patient demand is growing rapidly. Sleep care utilization is averaging a 16 percent growth annually over the last five years, and this is threefold greater than what is being seen in primary care. That patient demand has overwhelmed VA sleep programs and restricted Veterans' access to care. In May of 2016 we had over 21,000 open sleep consults, and just six months later that number rose to almost 31,000. Many Veterans live too far away from a sleep center to gain access to the specialty care, and so they don't even try. In FY '16, the VA incurred a cost of \$183 million in CPAP equipment and supplies, so we have a growing patient need for these services.

To access REVAMP, Veterans will use their DS Logon and access it through the VA mobile app store using their iPhone, iPad or other mobile device. The practitioner will access REVAMP from the VA-networked computers using their PIV card. Our goal is to have REVAMP in field testing at 10 sites by early March.

Current care to delivery of Veterans with obstructive sleep apnea is inefficient, and it doesn't take advantage of existing technologies. Veterans typically must drive to a VA facility-- which is often hours away-- taking time off from work and school. There they complete paper questionnaires, but the information collected varies across the sites, and entering it manually into CPRS is inefficient, and the documentation is often incomplete. When Veterans with sleep apnea on CPAP treatment are seen in follow up, the practitioner must often rely solely on patient reporting and does not have access to the information from the patient's CPAP unit. The CPAP unit would provide evidence of whether the patient is having trouble using the treatment, and how well the treatment is working. That objective information is essential for patient management and is often lacking. Next slide.

REVAMP does away with these outmoded practices. By combining REVAMP with existing Telehealth technologies Veterans with sleep apnea can be diagnosed and treated without having to travel to a sleep center. Veterans complete validated questionnaires on REVAMP that are reviewed by the practitioner. By administering the questionnaires at intake and follow up we can evaluate patient outcomes. The Veterans are mailed the portable monitor for home testing, and watch videos on REVAMP instructing them how to perform the test. Veterans diagnosed with sleep apnea in the home sleep test can then be started on auto-adjusting CPAP treatment. The information from the unit on patient use and treatment efficacy is transmitted wirelessly to the REVAMP platform.

Both ResMed and Philips Respironics-- the major CPAP manufacturers used in the VA-- have agreed to share the data on their servers and send it

to REVAMP, and agreements with other manufacturers are being pursued. Veterans can view their PAP results on the REVAMP platform, and we have evidence that this improves their use of treatment. Practitioners can review the PAP data on the REVAMP to help patients so they have access to the objective information.

A very innovative feature of REVAMP is that it auto populates templated progress notes with the information that it collects from the patient. These notes can be copied into CPRS, enabling complete accurate documentation and saving practitioner time. REVAMP can also export patient data to spreadsheets, allowing assessment of patient-centered outcomes.

So with that overview I want to turn the presentation over to Priyanna Mehta for a demonstration of the features in REVAMP.

PRIYANNA MEHTA: Thank you, Dr. Kuna. As Dr. Kuna mentioned, after this overview I'm going to walk through a high level demonstration for you of the patient and the provider's platform to see how they interact. The patient will use single sign on externally to access the patient platform, and the provider will use single sign on internally. As Dr. Kuna mentioned, a practitioner will utilize a PIV card, as well as other options, and then the patient can use Norton, DS Logon, et cetera. So for the sake of time, I will not be showing that sign in process today but will instead begin with the demonstration.

So beginning here, this is where the provider actually looks up the patient so they may be registered in REVAMP. Inside the provider application is a

patient look-up feature. Here the provider will enter the first name, last name and social security number of the patient. This look up feature then goes out to the Master Veteran Index-- or MVI-- to locate and pull the patient's demographic information down.

Once the patient's information has been found through MVI, the provider will see a screen, such as this, with the patient's demographic information. You can see a lot of the fields have already been pre-populated with the information available from MVI. Any additional information can be entered by the provider and modified to correct any errors. There are a number of required fields needed to register the patient. From here, the provider will use the Save button-- in the upper left next to the magnifying glass-- and by saving, the patient has now been added as a patient to REVAMP.

Once the patient has been added to REVAMP they will receive a welcome email. That's not shown here, but the patient gets an email message letting them know that they are now a part of the REVAMP program; that will direct them to the patient platform. There is a link provided there so that they can go straight to the platform from the email, and when they arrive here at the platform you can see that they will log in. And when they log in this is the first screen that they will see – this is known as the intake process.

As a new patient logging into the patient platform for the first time, there are a series of steps where they will confirm their profile information, watch a brief video and then complete the validated questionnaires that Dr. Kuna mentioned earlier. This is the first page of the intake process, known as

“My Profile.” Here users click through a number of steps using the Next button.

As the patient clicks Next once we have verified all their profile information you can see at the top of this screen there has a green check mark, letting the patient know that they've completed the intake process. And now, we are on the second step known as “About REVAMP.” Here the patient will watch a brief video that gives them an introduction to REVAMP, and why they have been referred to this program and how it can help them with sleep apnea.

Once they have viewed the video, and clicked Next, they will arrive at the third and final step of the intake process. This is called, “My Sleep Health.” Here, they will complete a series of validated questionnaires that will provide the practitioner a baseline. Here you can see there are a number of questionnaires listed, and all of these questionnaires must be completed in order for the patient to complete the intake process.

OK. Going to the next slide, here's an example of the first questionnaire, known as the initial information questionnaire. This is just a view to give you an idea of what a questionnaire may look like. The patient would go through, make any selection, click Submit, and then after each questionnaire they are returned to this page, which will show a check mark next to the left.

But once all the questionnaire have been completed-- as you can see here, they all have a check mark to the left-- the patient would click Next, and then arrive at this screen here, just letting them know that they have

successfully completed the account set up. They are informed their provider has been notified and will contact them with any next steps.

Once the patient completes the intake process the provider has a baseline of information from the completed questionnaire that the patient did in the platform. Here you can see in the provider platform the practitioner can review each of the questionnaires, and review the responses that the patient gave for those questionnaires. Here is an example of the initial information questionnaire with the responses that the patient provided. They can export this data, as well.

Okay, so once the provider has reviewed all of the patient's questionnaire data and determined they should perform a sleep study -- particularly a home sleep study -- they can go to the sleep study section of the platform. Here they can actually schedule the study for the patient. They would enter in a date scheduled and select the study type. Once they do this, the patient receives a notification that they have been scheduled for this study. This notification by email will also direct them back toward the patient platform where they can go to a sleep testing section in the platform. This is where they will be able to see a video that will tell them how they can complete their study at home, for example. We see here the NOX-T3 monitor and recorder. So the patient will watch this video, perform the study at home and send the recorder back to their clinic.

Once the provider receives the recorder in the mail and reviews the results of the study, they decide if the patient has a diagnosis of sleep apnea and if the patient would need a CPAP machine assigned to them for treatment.

Here they can access the PAP machine area of the provider platform, which is where they assign the patient the device, if appropriate.

To do that they need a serial number and a manufacturer-- which, in our initial release, we are working with ResMed and Philips, and have plans to add others in the future. By assigning the device here, this allows REVAMP to retrieve the data from either ResMed or Philips as the patient uses the device.

Now we return back to the patient side of the platform.

Here the patient has been using the device regularly. They have access to a section in the patient platform called "Treatment Results." This is where they can get their PAP data, such as this section here, which is known as My PAP, which shows them their PAP usage. The display you see here now is showing a last night view – it shows the patient how much they used their PAP machine for the previous night. It shows the patient was using the device nine hours and 40 minutes. They can hover over the bars underneath to get additional information on when they had the mask on, when they took it off, et cetera.

The next screen that you see here is the "My Mask" section, and this will show the patient data on mask leaks. A happy face tells the patient that their mask leakage was in an acceptable range, or below 24 litres per hour. And this would indicate that they're having a good mask fit. If it was 24 litres per hour, then it would show an unhappy face and then provide the patient additional information on where they can get help on mask fit improvement.



I would like to mention that the AHI screen-- which I am not showing here-- also displays in a similar manner, and it uses a threshold of 10 apnea hypopnea events per hour to determine if the patient needs to review that. It would also show a happy face if it's below that, and a not so happy face if it's above that.

As the patient is able to access and see their data in the patient platform, the provider may also review the patient's PAP data in their platform. Here you can see a bar graph that shows the treatment adherence data per patient, showing how much they are using their PAP device. This is a display that shows the past seven days of data. The provider can also change the view to set it to specific dates, to view last month. Here is [INAUDIBLE] graphics available to the provider to review the patient's data. And this is an apnea events type graph, which shows the AHI broken down by event type. This can also be modified to view by different time ranges-- last week or last month-- and not shown here is some additional data, including the PAP patterns of use. They show when the patient was wearing the mask, when they took it off-- a graph that shows the AHI on its own, as well as one that will display [INAUDIBLE].

OK. So that concludes the overall demonstration and walk through of the two platforms today. I would turn it over now to Dr. Kuna to give his closing remarks for the presentation.

DR. SAMUEL KUNA: Thanks. So we're very excited about this new approach to management of Veterans with sleep apnea. And we see the immediate gains as being a rapid expansion of home sleep testing. that rely

on getting things out to the patients' homes so they don't have to come to the sleep center, reducing costs to the VA and improving access.

Rapid expansion of sleep telehealth: REVAMP is going to collect information from the patient, and share that with the patient and the practitioner. But if you combine that platform with existing sleep Telehealth technologies you can develop a clinical pathway, which allows you to reach Veterans without them having to travel to a sleep center. And then we see this as possibly being applied in a hub-spoke model where, perhaps, sleep centers that have more resources can provide that to VA medical centers that do not have sleep resources to meet the demand they're facing.

The bottom line is that we want REVAMP to improve Veteran access to care for their sleep disorders, and see this as moving beyond sleep apnea. This platform is something that could be applicable to the treatment of Veterans with insomnia and other chronic medical conditions.

We're just bringing up a slide in which we would like to acknowledge the support that we've received, and the team that has been working closely together in the development of this project. The original supporter was the VA Center for Innovations, led by Patrick Littlefield. The core REVAMP team members have been myself, Dr. Katy Sarmiento, Carl Stepnowski at the San Diego VA and Blake Henderson as the project manager. The IT team that we have been working with to develop the web platform has been ASM research, collaborating with Intellica Corporation. The business owner has been Connected Care, led by Dr. Kathy Frisbee and Dr. Neil Evans. We've had key collaborators through the Office of Specialty Care; Claibe Yarbrough, the National Director of Pulmonary Critical Care and Sleep;

prosthetics with Penny Nechanicky and Lou Beck; and then also Dr. Kevin Galpin in Telemedicine.

We want to thank all of these people for their support, and for working together so closely.

DENISE KENNEDY: Excellent. Thank you so much. We have quite a bit of questions popping up here, which is great. So I'm just going to start at the beginning and I'll tee them up to you Dr. Kuna. And if you want to pass that along, and defer that answer, please go ahead and do so.

The first question: is the provider assigning the device and manually entering the serial number?

DR. SAMUEL KUNA: Yes. That would be done by the provider who has access to the REVAMP platform. So they would need to have the serial number of the device in order to link REVAMP to the manufacturer's server.

DENISE KENNEDY: Excellent. And the next one: Is there a specific HST device that will be the standard? Or is it any HST device that may already be in use?

DR. SAMUEL KUNA: It's the latter. So people can use whatever home portable monitor they are currently using. We did not want to be prescriptive in the development of the platform. We wanted this to be able to be used within whatever clinical program that was already existing, and that this would then increase the efficiency of that program. That was why we felt it was so important to have as many of the PAP manufacturers on the platform as possible. So that practitioners not only did not have to go

from one manufacturer's website to another, but that also they could use whatever PAP machine they wanted for taking care of their patients.

DENISE KENNEDY: Excellent. Thank you. And the next question is: are the PAPs in the system all wireless?

DR. SAMUEL KUNA: Yes. There would need to be a wireless transmission of the data from the patient's home to the manufacturer's server, and then the manufacturers are sending that, on a daily basis, to the REVAMP platform. And both Philips Respironics and ResMed now have wireless transmission as a standard part of their current model line.

DENISE KENNEDY: Great. Excellent. And the next question is a two part question here. So the first part is, what kind of info is sent within the automated emails from the REVAMP system? And the second part of that-- because I think the second part is important too-- is, how are these emails compliant with the privacy/security standards as this involves active patient treatment info?

DR. SAMUEL KUNA: So that's a great question. The email reminders are just reminding patients about appointments, things that they need to do. If they have not filled out questionnaires in a timely manner they would get a ping reminding them to do that. All of this is going through very comprehensive VA security oversight. The platform itself will be within the VA firewall. So we are confident that, going through that process, we are assuring the privacy and security of the patients.

DENISE KENNEDY: All right. We're just reconciling questions here as there's a lot coming in. So can REVAMP be used for in-lab PSG scheduling?

DR. SAMUEL KUNA: No. It would not be used for in-lab scheduling. So it's really an outpatient system for keeping people out of the sleep center. We recognize that not everyone will be able to use REVAMP, and there are patients with complicated medical problems who will need to come into a sleep center. So we see REVAMP working in parallel, but not as a substitute for in-laboratory testing.

DENISE KENNEDY: OK, great. OK. So here is a question. Can you tell us how this relates to our ever-growing compensation and pension population?

DR. SAMUEL KUNA: So this is an important question. Certainly, I think some of the demand that we are seeing in sleep medicine for diagnosis and treatment of sleep apnea is related to the fact that people do want to get service connected for the condition. I think there are measures that we need to be taking, although I don't think they're specifically related to REVAMP.

For example, perhaps ensuring there is a chain of custody on the portable monitors that are being used to ensure the Veteran is actually doing the testing at home. REVAMP simply facilitate the ability to address patient demand, but it does not create a policy on how those patients should be processed.

DENISE KENNEDY: Excellent. Thank you. So is there an initial 10 centers that have been selected?

DR. SAMUEL KUNA: Yes. We have selected the 10 sites. They're ranging across the country, and we've been meeting with them over the past year in order to coordinate the initial rollout. We are hoping once REVAMP has passed that test we will scale it up to include many other VA medical centers with the goal of being a national platform.

DENISE KENNEDY: Okay. And then another question: How is the provider notified when a patient's info is ready for review?

DR. SAMUEL KUNA: We have a case management dashboard on REVAMP where the practitioner can go and look to see the patients, and what has been completed, and what is pending.

DENISE KENNEDY: Excellent. Thank you for that. Will this information be brought back into the VA medical record? Or will the VA have a consult entered to document for the patient?

DR. SAMUEL KUNA: Currently REVAMP does not talk with CPRS, but it has been configured to do so in the future. Currently, the progress note is generated within REVAMP by that automatic export that I mentioned. That note needs to be copied and then pasted into the CPRS progress note. We do very much want, in the future, to make that direct connection between REVAMP and the electronic medical record.

DENISE KENNEDY: Excellent. Thank you. Are IT and Biomed on board for this program?

DR. SAMUEL KUNA: Yes. We have been working with those departments, and it's not something that is actually needed at a local level because it's going to be available through the web and within the VA firewall. DENISE KENNEDY: Excellent. And we have a question here that I feel we get quite often on these calls. REVAMP is based primarily on electronics medium, and there are patients that are not maybe savvy with using electronics. The questioner is concerned that the patient may not understand how to apply the HST device despite watching the video. What then?

DR. SAMUEL KUNA: So I think this can be addressed by, for example, the clinical video teleconferencing. REVAMP is this platform which is collecting data from the patient and sharing it with the patient practitioner. But if you combine that with telehealth technologies, you greatly strengthen what can be done. If a patient is having trouble in applying the sensors -- say the first attempt has failed-- you can try again, and then ask that patient to go to a local VA facility and set up a clinical video teleconference. And then, we can show them how to do it over the video conferencing.

DENISE KENNEDY: Great. Thanks. And Dr. Kuna, I wanted to back to an earlier question about whether or not any HST unit could be used. One of the attendees here posed a question that the answer was that any PAP can be used. Can any HST unit be used? Not being a practitioner, I'm not exactly sure how to probe the answer there.

DR. SAMUEL KUNA: I'm sorry that I caused confusion with that answer. Any home sleep test monitor can be used, and people would still be able to use REVAMP. REVAMP does not exclude the use of any home sleep test portable monitor. So whatever is being used, if it's a type three, type four--

regardless of the manufacturer-- it can be used with this platform. The home test monitor does not integrate electronically with REVAMP, so we currently do not have ways of bringing in the results from the home sleep test monitor into the REVAMP platform. We have included in REVAMP some very minimal information that the practitioner will need to manually enter-- to give us the Apnea-Hypopnea index, for example, oxygen saturation index-- so that we can monitor the severity of the patient, and tell where we started in the patient management.

DENISE KENNEDY: Excellent. And the questions keep coming in, which just shows the remarkable interest in this program. Moving right along, are watchPAT devices accepted for this model? For REVAMP?

DR. SAMUEL KUNA: Yes. They are fine. So again, there is no direct link between the REVAMP platform and the portable monitor that is used for home sleep testing. The direct link is with the PAP machine. So the PAP machine is talking, essentially, to the REVAMP platform, but there is no such link with the home sleep test.

DENISE KENNEDY: Great. Does REVAMP need specific IT support to initiate the process at the local VA level?

DR. SAMUEL KUNA: No, it does not.

DENISE KENNEDY: Excellent. And I think you answered the question about the data and workload all going to CPRS. Currently that's not supported. That's correct, right?



DR. SAMUEL KUNA: That is correct. We do not have a direct link at this time between revamp and CPRS, but we have configured the platform so that it will be able to do that in the future.

DENISE KENNEDY: Great. So there was more of a comment here, but I wanted to bring it up because I think you might have a strong opinion of it there. Someone says, if a center has no problem with patient access, should we should stick with one to one visits and interactions? Any thoughts on that?

DR. SAMUEL KUNA: Well, this is not a mandatory program, and it will be offered to VA medical centers to improve staff efficiency. One of the things that we've found to help with patient care during pilot testing is that it saved a considerable amount of practitioner time to be able to use the REVAMP platform, which auto populates the progress notes so the practitioner did not have to manually enter all of that information. And even if there is no specific access problem, I think everyone's looking for improved efficiency that will give practitioners more time to take care of other patients.

DENISE KENNEDY: Excellent. Thanks. How were the patients initially selected to start in the REVAMP platform? Did they go from a sleep medical consult to the REVAMP by a sleep provider?

DR. SAMUEL KUNA: That is correct. So the way we did it with our first pilot study was that when consults came in we asked patients during the triage process if they had access to the internet. And those that did, we offered them the opportunity to participate with the REVAMP platform. We had very positive response from the patients from that experience.

DENISE KENNEDY: Excellent. Thank you. How are the HSTs being sent and received? Is there a central system for this?

DR. SAMUEL KUNA: Oh, that's an excellent question. We would love to see that happen, and we're working towards that. But currently, the way it would be done is that the monitor would be mailed from the local VA supporting REVAMP, and then mailing materials will be included where the Veteran could return again by mail. We've been doing this at some of the VA medical centers already and it's worked quite successfully. In the future, we are hoping that a centralized location can be established that will allow the monitors to go out and be returned through a centralized distribution center.

DENISE KENNEDY: Excellent. And we have about 10 more questions to go, so I hope you can get a sip of water, Dr. Kuna. You've just been barreling through these, thank you so much.

DR. SAMUEL KUNA: Well, this is great. I'm glad we're getting such great feedback.

DENISE KENNEDY: Excellent. Are most VA sleep centers shipping out their own HST equipment, or contracting with home sleep test companies?

DR. SAMUEL KUNA: I think both are being done, and both would work using the REVAMP platform. So again, it doesn't prescribe a particular practice, it only tries to facilitate what practice is going on.

DENISE KENNEDY: Excellent. Thank you. And then, can patients access this website through a tablet as well, and can the questionnaires be performed by patients in their clinic?

DR. SAMUEL KUNA: Yes. I like that idea a lot. The answer is yes, the patients can access the platform from a tablet. One of the thoughts or suggestions has been that tablets might be available in the waiting rooms. So the patients can fill out these questionnaires, and then they would be available for the practitioners to see. So again, in that particular instance, the patients are coming in to the sleep center, and are filling out the questionnaires there, and are having an in-person encounter with the practitioner. It doesn't have to be that the patient is at home and the practitioner's in the sleep center, or in the VA facility. We tried to develop this in to be flexible, so that it doesn't require a particular clinical pathway to be used.

DENISE KENNEDY: Excellent. Thank you. OK. Moving right along here... Does this replace EncoreAnywhere?

DR. SAMUEL KUNA: Well, EncoreAnywhere and AirView-- so EncoreAnywhere is Philips Respironics' platform, and AirView is that of ResMed-- and then Divelbiss and Fisher Paykel I believe also have their platforms. REVAMP does not replace those, and it will not have as much of the detailed information as would be available on the manufacturer's platforms. But it will have the essential elements that are needed for management. It will have the patient use, it will have the residual AHI, it will have the information about the air leak from the circuit. If the practitioner

needs more detailed information, they can then go to the manufacturer's platform in order to answer the question that they might have.

The value and importance of the REVAMP platform is that it is collecting the data from all of the manufacturers-- and currently now the two major manufacturers-- in the VA. So we have a single platform, and that then can allow us to monitor what patients are doing across the VA. Then we don't have to rely upon getting data out of Philips Respironics and ResMed. We will have a national network in which we can look at how Veterans use their PAP treatment and then compare to the functional outcomes on the questionnaires that they are completing to look at patient-centered outcomes. We see this as a very powerful tool for looking at many questions that we have about how to best manage patients with sleep apnea.

DENISE KENNEDY: Great. Thanks. And as a little bit of a follow up to that we have one questioner that says, we've been unable to get permission to use EncoreAnywhere at our VA. Will we be able to change the setting on a patient's CPAP/BiPAP unit remotely through REVAMP?

DR. SAMUEL KUNA: No. You will not be able to change the settings on the patient's machine. That type of function would need to be done through the manufacturer's server. However, I do want to mention that there is a new-- it's called an FSS bulletin-- where IT is now acknowledged, as approved, the use of wireless data transmission for PAP machines. And if the person who asked that question would email me at [samuel.kuna@va.gov](mailto:samuel.kuna@va.gov), I will send that FSS bulletin, which may be of help at your local VA. The FSS

bulletin, I should mention, is also posted on VA Pulse under sleep medicine.

DENISE KENNEDY: Great. And we have more questions here coming in for you. Will patient identification-- for example name, social security number, et cetera-- be located on the vendor website? Or will it just be the machine serial number, and REVAMP pulled from that serial number?

DR. SAMUEL KUNA: DME companies will not have access to the REVAMP platform. So there will be personal health information and identification on the platform, but again it is within the VA firewall, and has gone through all of the VA privacy and security criteria regulations.

DENISE KENNEDY: Excellent. I'll combine some questions here. The first one is, when will it be available to all VAMCs? And the second one is, how do we know if our center is part of the program? If not, is it possible to ask to enter the program?

DR. SAMUEL KUNA: Well, we're certainly interested in people notifying us that they're interested in participating. The process of getting REVAMP has taken longer than we would have liked. We will have the pilot testing at 10 sites starting in March. We expect that will go through into the summer, and then it will move into enterprise where the 10 VA medical centers will start using it in routine practice. Our plan is that soon thereafter we will be scaling it up and offering it to other VA medical centers.

I don't have a specific time schedule. Much of it is dependent on getting through the regulatory aspects of the VA, but we've come a very long way, and are optimistic that we're close to getting this out to at least the first 10.

DENISE KENNEDY: Excellent. Thank you. And more questions here, what is the rate of technical difficulties faced by the patient in the pilot project so far? Any insight into how patients are responding to the pilot?

DR. SAMUEL KUNA: So the initial pilot was done about two years ago at Philadelphia and San Diego. We had very good feedback from the patients about the use of the platform. We did not experience difficulties. Again, we're selecting people who already have access to the internet, so they're not coming in as completely naive. While that may exclude some people from using the platform, we believe that as time goes on more and more people are getting onto the mobile devices, and will have access to the platform.

When we triaged patients-- so someone asked previously, how did you find the patients-- when we triaged the patients, and asked them if they had access to the internet through any kind of device. Eighty percent of the people said they had access. We were very gratified with that and don't feel there's a significant digital divide because of the fact that most people now have an iPhone, an iPad, or some other mobile device that allows them access.

DENISE KENNEDY: Excellent. Thanks. Okay, so are you working to have information plus connections to the program available on the My HealtheVet website?

DR. SAMUEL KUNA: We have certainly discussed the value of having an interface on My HealtheVet. We do not have that at this time. It makes a lot

of sense to me that there would be a connection, but currently the two are not communicating with one another.

DENISE KENNEDY: Great. Thanks. And we have a specific question here from a listener. Their center had no HST and has an eight bed lab. Cloud Follow Up and TeleSleep are used for follow up. How do you envision this would affect their set up?

DR. SAMUEL KUNA: I see it as something that will allow them to collect more information from the patient by having the patient provide a great deal of details through validated questionnaires. And that it would improve their staff efficiency. So that type of a sleep center doesn't have to use HST. They can stick with their in laboratory testing if that's what they're comfortable with and they have the resources to do that.

But now with REVAMP they can start looking at outcomes. What CPAP adherence do our patients have? How does that compare with their results on the functional outcome of sleep questionnaire? How does it compare with the Epworth Sleepiness Scale, and the changes that they see on CPAP treatment? All of these things they'll be able to generate in reports exported out from the platform to track the quality of care at their center.

DENISE KENNEDY: Excellent. Thank you. And we're in the homestretch of questions here. How do we negotiate mask fitting and patient instructions using this platform?

DR. SAMUEL KUNA: So if the patient is remote from the sleep center, and is having trouble traveling in, there would have to be some arrangement made with the DME company-- or respiratory therapy at a local VA-- in

order to provide that type of service. Some of it might be done through video teleconferencing, but I do think that an in-person interaction with the CPAP set up is something that is very important. So there would have to be some strategy that's developed in order to allow the patient to get delivery of the equipment, instructions on how to set it up, and fitting for the mask.

DENISE KENNEDY: Great. Thank you. And when does the patient in the REVAMP program see a physician or provider for follow up?

DR. SAMUEL KUNA: It depends on the clinical practice at the center itself. The patient would be filling out questionnaires on the platform electronically to indicate what type of response they've had; symptoms that have improved; difficulties they are having; what's their Epworth score; what's the change in their functional outcome of sleep questionnaire score? That information would then be available to the practitioner when they are visiting with the patient. Now, that visit could be in person, it could be by phone, or it could be by clinical video teleconferencing. It's however the sleep laboratory arranges to do that type of follow up. But at that visit they would have the information not only from the questionnaires, but also from the PAP data.

DENISE KENNEDY: Excellent. And final two questions here. The first one is, will individual sites be able to put out individual questionnaires?

DR. SAMUEL KUNA: We have built in capabilities for that to occur. Yes. So again, we realize that each site has particular preferences and particular needs. So what we've done in REVAMP is that we have a core set of questionnaires that we would like everyone to use to have a uniform data



collection across the VA. However, the sites would also have the option of adding questionnaires at their site that they are familiar with-- that they've been using-- that would be helpful to them for managing the patient.

DENISE KENNEDY: Great. And I believe this is our last question today. Can patients who have had in-lab studies, and started on PAP, be added into REVAMP for follow up purposes?

DR. SAMUEL KUNA: We are planning to do that. Currently the way the platform is configured, it's to bring patients in who are just starting out -- who have not yet been diagnosed -- and they will start at the beginning. We have recognized that as this platform matures we would want to bring in people who are already on positive airway pressure. For example, people who have been diagnosed outside- VA care and are transferring their care to the VA. They may not need any kind of testing and they're just going to be followed for their PAP treatment -- we want to allow those patients to also use the REVAMP platform.

It's on our items to develop, but currently the platform is designed for patients who are newly referred for diagnosis and evaluation of sleep apnea.

DENISE KENNEDY: Excellent. And before we do our last final wrap up, any parting words, Dr. Kuna? I know you've been talking for a solid 40 minutes.

DR. SAMUEL KUNA: Well, I'm very excited by the questions. They're right on. We have accomplished a great deal in the work that we've done, and we're really looking forward to seeing this go into production. And believe

me, we're trying to get this moving as fast as we possibly can, so that the people who have expressed so much interest in it will have access to it as well.

DENISE KENNEDY: Excellent. And thank you so much to both of you for this presentation today. For everyone who is still with us, on screen there is a feedback link. Please let us know what you thought of today's presentation, and if you have any other suggestions for presentations in the future.

If I missed your question, I'm going to keep the chat box open for a couple minutes here. Please go ahead and use that, and we will make sure to follow up with Dr. Kuna directly. And also Harold, who's been running this from behind the scenes-- thank you so much, Harold-- has put Dr. Kuna's email in the chat box as well.

So with that, I hope everyone has a great rest of your day today, on Friday, and a great weekend. Thanks so much, all, and with that we'll sign out.