Telehealth: Tips and Tricks Learned from Providing Virtual Care to Veterans

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- [Christy] I would like to welcome Dr. David Jedlicka and his team to discuss telehealth tips and tricks learnt from providing virtual care to veterans. Thank you so much, Dr. Jedlicka. And at this time, I hand the mic over to you.

- [David] Thank you so much, Christy. I know I can speak on behalf of Tia and Megan when I say we're very excited to be here and to be able to give this talk. I think this will be informative for a lot of folks. And hopefully with everything going on in the world with COVID-19 that you'll get some important and useful information out of this that you can start applying to your clinic right away. All right, so as far as our disclosures go, Dr. I'm sorry, Dr. Murray's old name, Dr. Oliverio, Dr. Kennedy and myself are all employees at the VA. I also am an employee at the University of Pittsburgh as a part time instructor and we do not have any non relevant financial disclosures to announce.

So, what are we hoping that you learn today? We're hoping today that you will be able to describe some different methods where you can connect to your patients and provide telehealth perhaps in some ways that you're not doing right now. We're going to be giving you some information about how you can be using phone or video based telehealth options in many different domains, including some specialty items, which each one of us today we'll be talking about our own specific domains that we kind of specialize in and how you can apply telehealth to things just outside of working with hearing aids or hearing loss. So it wouldn't be fair, I think to the community if I didn't share this slide with everybody. Audiology Online has some amazing talks on telehealth. These are some great ones done by some of the best audiologists we have focusing on this area. And there's many that are offered by our industry partners as well. So if you're interested in learning more about their products, Audiology Online has such a tremendous library available for people to review and use for their clinical practice. So, today the purpose of this presentation is we wanna talk about how we're using telehealth in our audiology clinic here at the VA, which can really be applied to anywhere. It doesn't matter if it's private practice, hospital or school. There are many different ways that this can be translated universally to the field of audiology. We're

gonna highlight a lot of our mistakes that we made because as we transition to a clinic that was pretty much only seeing patients in person to now completing all of our visits virtually, we have made a lot of mistakes. So hopefully you can take our lessons learned and apply them so you don't make the same mistakes. We wanna help make you more comfortable with doing this as well. That was one of the biggest things with our clinic was I think, most of us prior to being forced into doing these telehealth appointments, we weren't really feeling comfortable doing them but now it's just kind of a way of life and I don't think that we will ever turn back. And then we're also gonna talk a little bit about what different programs are available for you to use to complete these telehealth visits. We're gonna talk a little bit about the ones that are available, are approved at least by the VA. Now, it's not gonna be a comprehensive list and certain apps might be allowed, not allowed wherever you are. But we're just gonna talk to you about just some of those options that you have available. So, it's also important that we talk about what we won't be covering.

So we will not be talking about how to basically set up a telehealth program. We're not gonna be talking about all the different items you'll need. You know, I joke and say it's boring because I'm much more focused on providing patient care, but it's extremely essential. There's some great telehealth classes here on Audiology Online about how to set your programs up. And I don't think without consulting those, we would have been able to be as successful as we were here in Pittsburgh. We're not gonna talk about what you can do when you don't have a telehealth solution available. These are only going to be covering cases where telehealth is a successful option for a patient. And we often will get asked a lot of questions about billing for this. We unfortunately if you're interested in that we'll not be covering the billing services. We are lucky enough at the VA where we can provide virtual services to patients across the US. So if you're interested in the billing thing, there's some other courses out there that will cover that, but this will not be one of them. And lastly, we're not here to tell you what to use or not to use for your own practice, we wanna give you all the information that we have so that way you can make the best choice possible for what would work for your clinic.

And that's the biggest takeaway is that every clinic is going to have a different setup that will work best for them. So like I was saying earlier, prior to COVID-19, and our clinic closure, we weren't doing much of the virtual care. But we did have it available. And we would go to a lot of these seminars, do a lot of Audiology Online trainings and learn about it, but we weren't really applying it to our everyday practice. Luckily, the VA has some of the pioneers in telehealth care. I know that Chad Gladden and Darrin Worthington were in on the ground floor as far as building these practices and working at getting them available to a lot of the VA audiologists. And then out in San Francisco, doctors Anna Black and Andrea Bourne, they've provided us with a lot of good information about how we can take our setup and make it work locally. Out in San Francisco, they provide coverage all the way from Naples, Florida, out to Hawaii, so they're covering the whole country. So they have been just a great resource for us at the VA and have provided some of these talks you'll see Audiology Online which may help you in your own practice.

So this here, this is a list of telehealth options that you'll see. So when people think of telehealth, we nowadays are thinking more of video based telehealth but really a lot of us have been completing telehealth over the phone for a long time prior to I think the mid 2000s. Here at the VA we're doing a lot of just our follow up care for hearing aids fittings over the telephone and it worked out well. But that's really expanded so you can still do telehealth visits over the phone. But you know with computers, tablets and smartphones available now you can now have the video component available which is nice. For a while the VA Video Connect app was the only really approved method for us to provide these video telehealth appointments with our patients from home. It was something that they had to download and use for us to complete the appointments. But given everything that's happened in the world with COVID-19, this is a list of other items that have been approved by the VA for us to use. So what's nice is a lot of these things the patients are comfortable with, they know how to use it. Any audiologist should be familiar with least a few of these in order to have them available to make life easier for their patients. So this list is always changing. We might see some things

being removed from this as far as what we have available to use, we might see things being added but this is just to show you just how many different options you have available to connect with your patients. In this talk, we will be giving 10 different tips of things that we have learned that you can provide to your patients. So you're gonna see these sporadically pop up. And tip number one here today is to make sure that you check and test all of your equipment prior to completing telehealth visits. Now, that just kind of seems like it's a basic fact, but actually the very first telehealth session I tried to complete while I was doing some work from home, I had to do it around noon. And when I was connecting in remotely to the VA system, there were a lot of other people who were connecting in from home as well. The system was so overwhelmed that I wasn't able to use the whole system in order to connect with the patient. So whenever I tested the system at 7 a.m. and there weren't many people on, it worked well. But later in the day, it didn't.

So it's a good idea to check your equipment but to periodically check it as well. So that way if you know you'll be needing something in a high demand time, it won't fail on you. So, like I said, we're gonna talk about some different case examples. And the first example we have here today is a 78 year old veteran. We saw him prior to the clinic closing, and he was a previous full shell hearing aid user, and he wanted to stay with the same style, same manufacturer, it should have been a very easy fitting, but then when our clinic closed, we unfortunately had to cancel his appointment. So we contacted him, told him about the closure, he was understanding. And we talked about how we could get these hearing aids programmed and sent to him. That way he would have the new technology available for him to use. So luckily we were using a manufacturer we could upload his most recent settings into the new hearing aids. There have been a little bit of a change in his hearing loss but nothing too significant. But just to make sure like audiologist should do we were using real ear measures but in this case, we are using simulated real ear measures. We agreed that once the clinic does open up, we will contact him, we'll get them scheduled back in our clinic to do some follow up care as well as to do on ear, real ear measurements. And he said, hey,

I'd be interested in doing a telehealth visit, if that's available. So we said, hey, that works with us. I asked him about what type of phone he was using. And he said he used an LG smartphone. That's perfect. We could have used one of those connectivity apps that we were talking about earlier to do this visit. He didn't have a computer at home with a webcam. And I didn't ask any specifics about the cell phone. But he said he did have an email address that we could send them the link, he could download this item to his phone and join the visit. So everything was good. Tip number two, you wanna make sure that you can help your patients check their connections. So whenever you're talking to your patients at home, whether it's them connecting into their WiFi, making sure they have that available, or even if you'll be doing some visits when patients are at work or if they're at another hospital and you're connecting remotely that way. There can be things pop up like if you try to use one of these apps and the patient's connecting from work and their work has a block to the firewall, next thing you know, it's not gonna work out too well for them.

So in addition to you checking your own connections, you wanna make sure that your patients have checked their connections as well. So that way if there's an issue, you can walk them through that. So let's get back to example number one here. Whenever we had the link sent to the veteran, we set up a time and he was supposed to click on the link, enter in the video chat at that time. The veteran did not show up at that time. So I got him on the phone and called him and he said that he wasn't able to pull up the link to download the app on his phone. So when we were talking about his smartphone the further we come to find out it exactly wasn't so smart. He was using a flip phone, but he thought it was a smartphone because it had Bluetooth connectivity, which he had previously used a Bluetooth device. So we were able to complete the telehealth visit just by using the phone. No video was required. The patient was reporting doing very well with the hearing aids. We did some outcome measures, everything was great. Like I said for this guy, he was staying with the same style of hearing aid, same manufacturer, there were no major issues and we still have him on the list to come back to have these real ear measures completed and to do some more follow up

measures once the clinic does open up again. Example number two here is a little bit different. This was a 74 year old veteran, is going with RIC style hearing aids. He was a previous user, but he was switching manufacturers. So there were things that were going to be a little bit different for him this time around. He called the clinic actually because he had been fit in the clinic and was scheduled for a follow up, but he was having some issues figuring out if he was inserting his new wax traps properly. So when he called the clinic, we asked him, would he be interested in just doing video telehealth follow up right then and there because we knew that he had an iPad and he said absolutely, it'd be great. The other thing to note too, was the veteran lives with his daughter. So when we were talking to him, we knew his daughter was available for some resources if needed. We wanted to use the iPad because it would be a little bit easier for him to see us provide some demonstrations about how to change the wax traps.

So this was working out to be a very easy case for us to complete telehealth. So, tip number three here to interrupt this is, we want to recommend to you that you should prepare for your telehealth visit when your patient is in the clinic. So for example, if we knew this patient that we're just talking about now was going to be in the clinic, tell them to bring their devices with them that they could be using. And then you can download that when you're with them. So you can show them how to use it. Providing a little bit of counseling about the devices that they might need at home might take a little bit of time in your fitting session, but it could end up saving you a lot of time later on. So if you're there as the expert and you can provide them with some extra help, that's going to really be a major benefit for you down the line. So with this veteran, we gave him the instructions on how to download the VA app so that way we could do the video chat and we stayed on the phone with him the entire time to work it through. So when we were talking about having his daughter available we wanted to make sure she was involved as well, because he's getting older, they have lived together their entire lives and she doesn't have any plans on moving out. So there may come a time when she has to be the primary caretaker of the hearing aid. So we try to involve the family

as much as possible. And we include this for telehealth as well, because if it's somebody that you think of as a non-traditional telehealth patient, even though they might not be the right person for telehealth, they might have somebody in their life that could help them out. So in this case, off the bat we didn't think the veteran's daughter was going to be needed, but she was available for us as a resource. But the more people you can get involved with this, the better of a safety net you have built in case a problem does pop up. So lo and behold, a problem did pop up with this patient. He couldn't remember his Apple user ID or password. He couldn't remember his password for his email address. So unfortunately, we were unable to connect to him directly. However, his daughter was there. She had her own iPad. We sent a link to her email address. She was able to download the software, we were able to do the video follow up, we could easily see he was changing the batteries, adjusting the volume control and changing his wax traps. Without any issues, everything was great. It was great just because of the ability to have somebody else there as a backup option. Now my little specialty area to talk about here is just how to do some balanced testing at home. So again, a lot of times when we're thinking about telehealth, we're thinking mainly just about what can we do in the hearing aspect of things but think about the other services you can provide.

So with balance based telehealth, there's a few different ways that you can do this. But for this type of telehealth, this has to have video capability because you won't be able to look at the eyes or do some actual measurements without being able to see the patient. And this is another one where I strongly recommend having a family member or a friend or caregiver available so that way you can really do the best job of getting recording on the patient without them having to move around and make it more challenging for themselves. So, as far as more traditional testing goes, the Hallpike test is one that works really well from home, they can do this on their bed. And again, if they have a family member present, if the person is with them, is videoing her eyes, so you can see them, you have the patients in the bed and you give them the instructions to do the Hallpike. They do it. And as the person is looking or pointing the camera at

their eyes, you're looking to see if there's any nystagmus present. If there is, you can make your diagnosis and see if canal three positioning is feasible or even appropriate. And then you can walk the patients to doing that, canal three positioning is something that has been given to patients through at home exercises for a long time. And it's gonna continue to be that way. So if you're able to do this through telehealth, all of a sudden you've now expanded your scope of the services you're providing in a way that you may not have even thought possible. The other thing which our clinic has really gotten involved in with the last few years is doing some functional balance tests. Now those are things that we're doing just to determine if a patient is a fall risk. Two of the ones that you can do at home through telehealth to see if a patient might be considered a fall risk is the Romberg Test. I think most audiologists are aware of what this test is and how to administer it. But if you have somebody videoing the patient, or if they can set their device up in a way where you can watch them, complete this test as you give them instructions, that will give you a good idea if they are a fall risk. If you want something that's a little bit more specific to fall risk, the Timed Up and Go Test is a great one to administer. The only thing that the patient needs is a chair, an area where they can walk 10 feet, and on your end, you just need your stopwatch to time them.

So you give the patient instructions to stand up, walk to the point that's 10 feet away, turn around, sit back down. If they do it within 10 seconds, they're fine. If it takes longer, then there's a pass fail criteria, they'd be determined to be a fall risk. These are some different things that you can do at home, which really makes a nice difference as far as providing an extra level of audiology care beyond just the hearing aids. So if you're thinking about how to expand your practice, and you have an interest in vestibular areas, this is one way where you can really do that and make a big difference. So next up, I'm very proud to introduce Dr. Tia Oliverio. Dr. Oliverio has been with us for quite some time now. And like we talked about earlier, she has been a proud presenter for Audiology Online so she's an expert at this by now but Dr. Oliverio earned her undergraduate degree from the University of Pittsburgh and she completed

her AuD at the Arizona State University. She focuses on electrophysiological measures as well as tinnitus treatment and assessment. Dr. Oliverio thank you for joining us.

- [Tia] All right. Well, thank you. So I would like to start by covering telehealth's role in tinnitus management. Tinnitus of course is common for those with hearing loss but it also is especially common in the veteran population that I work with here at the VA. Telehealth is such a great option for those patients who experience tinnitus because it can give them access to care that may not otherwise be easily accessible or maybe just difficult to obtain for them. All right, so tip number five. So as I discuss telehealth and tinnitus management, keep in mind our fifth tip, which is to prepare for the appointment as you would for a face to face appointment. This is going to help your patient focus on the topic at hand and will ensure the patient has access to all the materials and education that is needed for that appointment.

So before your telehealth appointment even begins, make sure that you as the provider have all of the educational materials, dummy aids, practice items and worksheets ready to go. Now typically a clinic that supplies tinnitus management services will offer some or all of these listed services here. A lot of these services are able to be completed via telehealth, but some are more difficult than others and some need to be modified. And our telehealth clinic here at the VA that I work at, tinnitus diagnostic evaluations are not available simply because we do not have that trusted equipment in the veteran's home at our disposal. But many of these other services can easily be completed via telehealth particularly counseling, Cognitive Behavioral Therapy by a mental health professional and fitting of hearing aids or sound machines. So those are all things that are particularly easy to do for tinnitus and telehealth. So this figure I know a lot of us are very familiar with. This is a summary of progressive tinnitus management or PTM. It's a visual of how a patient seeking tinnitus management may be triaged and moved through the steps of PTM. So this pyramid shows at the bottom those with bothersome and those with non-bothersome tinnitus. And from there it shows the five levels of management. So as the patient continues to move up the

levels, their problems caused by tinnitus are considered more severe and more help is needed further up the pyramid. So let's look at PTM through the telehealth lens and starting with level one which was triage. Via case history and previous evaluations, we are deciding how the patient should begin their care. So if level one is completed via telehealth a provider may be missing some information, autoscopy for example, but can certainly glean quite a bit of patient report. So for example, if a patient says that they completed audiologic evaluation last month, hearing aids were recommended for tinnitus management at that time, but they just weren't ready yet. And so he passed on using amplification, but now he says he'd really like to try and his tinnitus is bothersome. So he can be triaged directly to audiology. He's ready to go. However, if a previous patient says maybe his right ear began ringing two days ago and today that ear is bleeding, well that person should not be going to audiology right away. They would be going to the emergency care and very likely going to EMT or otolaryngology after emergency care. So those are all things that through telehealth, whether you're doing a video call or even just a phone call, triaging is very easy to do.

So level two, audiologic evaluation. It gets a little tricky. It is tricky to do via telehealth when one on one, just the provider and the patient. However, if there is a prior recent audiogram on file and the patient reports no hearing changes, the patient could then proceed at the discretion of the audiologist on to further levels. But, an audiologic evaluation is so key in getting that quantitative data with tinnitus. So we really like to see an audiogram before we move further up those steps. So, just what I was saying before as far as level two goes with the audiologic valuation, a new patient would not be appropriate to move beyond level two via telehealth. However, once level two is complete, or if it's been completed in the past, we can certainly move into prescribing ear level devices if needed and address the need for further tinnitus evaluations. All right, level three. So level three is group tinnitus education. It can provide a sense of belonging to a patient, or a sense that they are not alone in their issues with tinnitus. And that can be pretty powerful to be part of a group when you've been experiencing something distressful. Our clinic does have a group tinnitus management class where

patients can attend in person or virtually on a TV screen, so via telehealth. This is where tip number five, preparedness can really come into handy. The provider should make sure that each participant has all of the materials they need to complete group exercises, that they are ready for discussions. We also cover a broad range of tinnitus education topics in a group class so it's ideal to be able to share your provider's screen with those veterans that are not only in the room, but completing the class via telehealth. Now, we do use a psychologist in our particular class and our psychologist specializes in pain management, which has many parallels to tinnitus. So she's fantastic to have on board with us. Her role, she discusses emotions that surround bothersome tinnitus. So she'll be walking patients through mindfulness exercises, giving them resources and videos to watch. And just encouraging them to speak about how they're feeling. And then our role as an audiologist would be to educate the patient on tinnitus.

Okay, some patients will complete their tinnitus management at level three and that will be it for them. They will have found a place where they've plateaued and are happy there. Others will need to move further to a formal tinnitus assessment, which was level four. We cannot complete psychoacoustic tinnitus matching, but we can identify any issues preventing success with tinnitus management and we can also adjust hearing aids, maskers, et cetera. And of course the reason that we can't complete psychoacoustic tinnitus matching is that we don't have that really great equipment at hand, both on the provider side and on the patient side. We really need to be in the same room with that equipment together. Okay, and so we have reached level five. It is the final stage of PTM and it will be reached by those patients who continue to experience bothersome tinnitus with completions of levels one through four. In this level, we work with the patient individually rather than a group setting. So we take them out of that group setting, and from a telehealth provider's standpoint, it's actually a little bit easier to coordinate an individual session, than coordinating a group session with multiple people and multiple providers. These individual sessions can be scheduled regularly, say every two to four weeks, or they can be scheduled as needed.

It is still very important to include any other professionals that this patient has worked with in the past that are relevant to this topic, especially mental health professionals, if it's available. They go together so well, tinnitus management, cognitive behavioral therapy. So if you have any resources with that, I would definitely encourage you to get mental health professionals into your tinnitus management for telehealth. So, the takeaway here is that so many levels of the progressive tinnitus management triangle can be completed via telehealth. The provider should make preparedness a top priority. So you and your patients have access to all materials, professional referrals and outcome measures. Telehealth is meant to be convenient to the patient and it should run very smoothly. So if you really prepare yourself and your patient for what would be happening, it should be a very smooth appointment.

All right. So switching gears here, this is a case of telehealth helping a patient with expressive and receptive communication issues. This patient could not physically come into the clinic due to the current pandemic. But this patient has hearing loss and aphasia. So a traditional phone call may not have been an option. So before I tell you about our patient, I just wanna discuss tip number six to use technology that is best for you and your patient. If you're able to use a program that your patient or your patient's family is familiar with, this will improve the patient experience and the flow of the appointment. Okay, so our patient is an 80 year old man. He has expressive aphasia as a result of a stroke that he suffered in 2015. He speaks in small phrases, and he tends to make many semantic errors meaning he'll point to his daughter, when really that's his wife. Or he will mean to say cat and he says dog. So an error in sentence that changes the meaning of the topic. I relied quite a bit on the speech pathologists in our clinic, they work with him as well. And so it was so nice to have them nearby to pick their brains on his current communicative state and what works best for him. So he also has some sensory neural hearing loss. This was his first hearing test. He does have normal hearing through about 2,000 hertz and then it slopes down to a moderate hearing loss bilaterally. We did fit him with hearing aids. He's a first time hearing aid user and we did fit him with open fit rechargeable RICs. And then finally, a point to

make would be his wife helps him quite a bit with communication. So the way she puts it is, she quote fills in the gaps in memory and timeline issues. The patient is as independent in expressing his knowledge as possible. But even he knows sometimes he gets himself into trouble and he will look to her during the appointment to help clear things up. Okay, so the first time I saw this individual was for his hearing aid fitting in February of 2020. This was a face to face appointment, our clinic was open at that time, and I did complete real ear measures the RECD speech mapping and I fit the hearing aids to NAL-NL2. And they were a great fit. So once the programming of the hearing aids was completed, we focused on the care and use and this is where I figured he would struggle a little bit. He does have some trouble understanding words as his wife would say get kind of lost. So he did have some difficulty inserting the hearing aids, he has limited mobility of his right hand. To address this we just practiced and practiced until the sun went down in front of a mirror. So we practiced multiple times and by the end of the session he was doing pretty good. So he could do that most of the time independently.

One thing that we did struggle with, was wax cards, it's such a tiny motion to be making so his wife after a couple tries by him, his wife decided that that would be her task. So I think he was really fed up. All right, so after the fitting or I should say in between the fitting and the follow up appointment, a face to face visit was no longer an option because of the current pandemic. So we did a telehealth follow up. What happened was like I had contacted his wife to let her know that his initial appointment would be canceled. And that we had several options that we could discuss to see how he's doing with his hearing aids. So we talked about a phone call, we talked about dropping hearing aids off in the clinic and traditional telehealth. So she chose a video call and I was so happy to hear that because I think it was the best choice. So a follow up call was completed via video call. And the patient was home. I was home, I was in my home office. And I did discuss with them at privacy and safety. Both parties have to be secure, private locations. So obviously the provider and the patient need to be in a private, secure location. So no cafes, no grocery shopping when you're with a patient,

none of that. So the follow up, connection went really well. I used a sort of an alternative modality to video chat with them. And they were both pretty comfortable with that. I began with open ended questions. So questions like, how are you doing with your hearing aids? How are you feeling today? And that's just a personal preference. I like when my patients can get as much off their chest as possible, whatever is in the forefront of their mind, and then we can deal with outcome measures and things like that. So, he was speaking in short phrases in my video screen. I could see him and I could see his wife. He was able to express his concerns and questions, mostly by gesturing at first. So he gestured, inserting hearing aids into his ears. And then from that I could say, is that something you're having trouble with still? And he shook his head yes. So I had a dummy aid on my side of the video, and I was able to model for him how to insert the dummy aid into my ear. And then he attempted that several times and his wife helped. I think the more we did it, the more it was coming back to him. And he did very well with that.

The other thing he did is he said, the phrases louder, softer, as if they were full sentences, and pointed to the hearing aid manual. And so I said, did you wanna discuss or revisit volume control changes? And he shook his head yes. So we did that. I showed them on my dummy aid where the volume control was and showed them the pages in the manual to look at. And then I also did give them the tech support number, manufacturer tech support number at the wife's request. So then once all of that was out of the way, we did more formal outcome measures. He says he's doing better, much better and most of the time with his three COSI goals which were hearing his TV, hearing his wife and general conversation. So he feels like he's doing much better with the hearing aids than prior to when he got them. So, this particular case, the importance of telehealth was so crucial because we had a visual aid for a patient to practice hearing aid care and use skills. The patient could see me demonstrate skills and I could see the patient gesture, I could see his expressions and all those nonverbal cues that are so important to an individual with aphasia. So I think any other modality, just a traditional telephone call, I don't know that it would have gone as well. It really

flowed nicely because we could see each other. So that brings me to tip number seven, have a backup plan ready. So unexpected issues will occur and it is your responsibility as the provider to ensure that the visit is not lost due to being unprepared. So this appointment went fairly well, but there were plenty of times when it could not have. A phone call, for example, as opposed to a video call really could have broken down our communication. And once you break down communication, you can get very frustrated. And we both needed visual cues. He needed visual cues for me to show him how to do these skills and I needed his visual cues when he's pointing and making faces. So if verbal communication broke down, we both had writing boards ready, and the wife was also ready to answer a traditional phone call on speakerphone. So we had a contingency plan. I'm glad everything worked out. But yeah, definitely have a backup plan. So plan for something to go wrong. Okay, so next up, I am going to introduce our next speaker Dr. Meghan Kennedy. Dr. Meghan Kennedy completed her undergraduate work at the University of Pittsburgh and completed her AuD at University of Buffalo. She is currently a staff audiologist at Pittsburgh VA Medical Center, and at multiple VA outpatient clinics with a special interest in cochlear implants, including telehealth based cochlear implant services.

- [Meghan] Thank you so much Dr. Oliverio. So today I'm going to be discussing cochlear implants and hearing aid remote programming with you. I'm gonna start us off with a tip. Tip number eight is don't discriminate. You want to ask every patient who is eligible for telehealth based services if they would be interested in a virtual visit. So that doesn't just mean our hearing aid patients. It also means our cochlear implant patients, which brings us to cochlear implants and telehealth. So why do we need telehealth for cochlear implants? Access to properly trained cochlear implant audiologists and the technology and services they provide is not available at every audiology clinic or in every hospital, as I'm sure we all know. So for those patients who live in rural and remote areas specifically, it may be difficult for them to get to their cochlear implant sites and maintain consistent cochlear implant services as a result. And that consistency with their services is necessary for successful cochlear implant use, which

is our goal for both hearing aid and cochlear implant users. So what are some benefits of cochlear implant telehealth? As patients find cochlear implant services more readily available to them, we may note that wait times decrease at cochlear implant sites and this will free up more time for face to face appointments in clinics, travel time and the associated costs for patients may decrease and improved adherence to CI use, treatment plans or rehabilitation may also be noted as there's more direct access to the provider. In general though, the patient cannot be at home to have cochlear implant telehealth services provided. They actually have to be at a clinic with a provider to receive these services. So this is different from what Dr. Jedlicka and Dr. Oliverio have been discussing. Cochlear implants service users need to go to another clinic. This is a generalization however, as the cochlear manufacturers have been working on technology to make cochlear implant remote programming available at home. It is somewhat available in the market but not widely available.

So it should be noted that this could be technology of the future. So how do we know if our clinic is eligible for remote programming of implants? First off, we have to ensure that all sites have appropriate technology, personnel and facilities to provide quality patient care. So what sites am I talking about? The two main sites are going to be the provider site where the cochlear implant specialist or audiologist is working, and the patient site and that's gonna be where the patient goes to receive the telehealth appointment and a non-cochlear implant audiologist is recommended to be there. Now the reason I recommend a noncochlear implant audiologist is that they're going to have some basic knowledge of cochlear implant use and maintenance, as well as maintenance and they can answer any questions that a patient might have or know where to refer them to get that information. Healthcare techs, especially in the private sector, not through the VA can also be used at the patient site, but I would recommend they have some training in order to know the basics of use, maintenance and can answer some basic questions for the patient. Another thing that I do wanna discuss is it's highly recommended that the patient has some experience with cochlear implant use and has initial programming of their device completed prior to a telehealth

appointment. So it will be much easier and much smoother for the patient if it is not their first initial experience with their implant over telehealth. However, as with everything else we've discussed today Coronavirus has led to some flexibility on this issue as people have not had the access to clinics that we have had previously. So what are some appropriate cochlear implant appointments that can be completed through telehealth? Annual cochlear implant reprogramming and testing can always be completed over telehealth. Cochlear implant problems and repairs can be addressed as well as follow up appointments after the initial fit, including continued counseling on cochlear implant, current use, any reprogramming, creation of new maps, measuring impedance and aural rehabilitation and counseling, telehealth is a really good source for that.

So, I'm reiterating what Dr. Jedlicka and Dr. Oliverio have discussed during their sections as well. What I believe is the key to a successful cochlear implant remote programming appointment is to make sure that the practitioners at both the provider site and patient site are prepared prior to the virtual appointment beginning. So, that means both ensuring that the non-CI and CI audiologists have discussed and are in communication regarding the appointment prior to that time, ensuring that both provider schedules are blocked at their locations, making sure that they have access to appropriate technology and this is going to include video calls, cochlear implant software, sharing computer screens. The non-cochlear implant audiologist is going to want to ensure that they can successfully pair and hook up a sound processor with the cables they have in their clinic. And finally, you want to ensure that you have all CI supplies for maintenance both accessible and available to you in your clinic. So what would an appointment for cochlear implant remote programming look like? Well, the patient is going to arrive at the patient site where the non-CI audiologist is working. And the non-CI audiologists would greet them, start the appointment and they're going to be the individual who creates and initiate the video call with the CI specialist at the provider site. So that video call will be initiated and next they would share their screen with the CI audiologist. So they have access to the cochlear implant software, they're

going to wanna have control of that software. So the video call would be initiated, the screen would be shared. And at this point, you would wanna double check that the non-implant audiologist was able to successfully connect the sound processor to the software and the CI audiologist would want to check that they have control of that software. The CI audiologist is then going to complete the appointment as they would a face to face appointment discussing the patient's history since their last visit, any problems they've had, they can reprogram and create new maps for the processor. And then they can save those maps as they would because the sound processor is hooked up to the computer. Some limitations of this though, really revolve around the fact that the non-CI audiologist is going to be the hands of the cochlear implant audiologist during the appointment. So anything that's going to be hands on, the non-CI audiologist would have to complete.

So any maintenance of the sound processor or an external component would need to be completed by the non-CI audiologist prior to the telehealth session beginning and if time permits and it is necessary, the non-CI audiologist would have to complete any post operative testing including either thresholds or AZbio speech reception testing. It should be noted that remote programming for cochlear implant follow up appointments isn't new. It was approved by the FDA in November 2017 for experienced users. So since that time, there have been multiple studies completed that confirmed both the effectiveness and the safety of remote programming of cochlear implant devices, which means that overall remote programming of cochlear implants is a feasible alternative option when face to face appointments just are a challenge to patients. So that brings us to the conclusion of our remote programming of our cochlear implants. And tip number nine, we're going to wanna do a thorough case history and chart review prior to the virtual visit, which will allow us to ensure that you have all necessary items in front of you when the visit begins. So Dr. Oliverio discussed this but a bonus tip is if you're providing any hearing aid, maintenance or repair services, you want to try to have that same model of hearing aid in front of you so you can use it for demonstrations. And that brings us to our next topic, remote programming of hearing

aids. Now, remote programming of hearing aids is a very beneficial option that has been widely available in the private sector for some time, but those of us practicing at the VA, this is a more recent technology. So remote care of hearing aids allows us to make real time programming changes to the devices while the patient is outside of the clinic. This is going to allow for timely improvements and amplification and sound quality and helps reduce the burden of travel for the patient. And that is not just for patients who have a difficult time getting to the clinic due to distance, but also if they are ill or have difficulty with mobility. These remote programming visits are a very feasible option for them. And then as we've talked about through this entire presentation, remote programming of hearing aids is a very good option in emergency situations, such as the Coronavirus situation we are in right now. Our patient's a candidate, there's a couple things you wanna look at. The patient themselves must be comfortable with technology or have somebody around them who can assist them that is comfortable with technology themselves. The patient should have access or must have access to a smartphone or tablet that has Bluetooth accessibility.

The patient must have compatible hearing aids and be able to download the required apps onto the smart device. And there is a slide I will show you guys later in this presentation that has a list of some of the compatible hearing aids, what the applications are, and what the requirements for smart devices are. That's for your reference, and I will get to that a little later. Finally, you have to have a strong and stable WiFi connection that must be maintained during the entirety of the appointment. It should be noted that each manufacturer has specific requirements. It's not a generalization across all, which the biggest thing to note for COVID is that some manufacturers actually require that remote care is activated within the patient software prior to the remote programming session being possible. So what this means is that you'd have to have an additional office visit for some manufacturers where remote programming would be actually activated within the software before you would be able to just jump right into an appointment. So that's why it's important that all additional requirements for each manufacturer are reviewed when you're determining candidacy

for the patient. What are our requirements as an audiologist to make these remote programming appointments possible? Well, you need to make sure your computer has all necessary hearing aid software, you have to make sure that we have a computer or I'm sorry, a camera, a microphone and speaker available for video calls. Because video calls will be a requirement with all manufacturers during these remote programming appointments. And we also want to have appropriate internet connection during the entirety of the appointment. You want to ensure that you understand as an audiologist how to activate and use the remote programming for the manufacturing question before that appointment starts. And as we've stated throughout this entire presentation, that all technology should be tested and you should understand how to use it prior to the appointment taking place in order to make sure that appointment goes smoothly and the patient gets a high quality of care.

So, one thing to note is that the patient should ensure that they have set up an account on the manufacturer app and connected their hearing aids to the app or smart device prior to the virtual appointment beginning. Now sometimes this is impossible unless it was completed during a previous appointment. Or you can make time to have a telephone visit to set up the app and pair the hearing aids to the patient's smart device prior to the actual remote programming appointment. So what would this appointment look like for the patient, a remote programming appointment look like? We would start by agreeing upon a time for the appointment and at that agreed upon time, the audiologist will initiate the virtual visit through the patient's hearing aid software. The patient would be in a virtual waiting room of sorts until that time and would be led in once we initiate that video call. The video call will then begin and you can connect to the hearing aids the software as long as an appropriate connection to their smart device has been established. From that point programming of the devices can be completed and saved to the hearing aids as normal. And if you use Noah, when you save them to the hearing aids, the programming to the hearing aids, it would also be saved in Noah. A few exceptions are present. You can't for some manufacturers, things like feedback manager or specifics within the hearing aid programming will not

be available over remote care. You may have to wait to complete things like feedback manager in the clinic and this does vary on a manufacturer basis. So I'm going to talk about a case study which was actually my first attempt at remote programming of hearing aids with a patient. He was a 70 year old male who had bilateral sensory neural hearing loss, and also complained of constant bilateral tinnitus. He was a previous RIC hearing aid user and after re-evaluating him we decided that he would get new Oticon Opn S1 RIC rechargeable hearing aids at his next appointment. However, that fitting appointment was canceled due to the coronavirus outbreak. So, I called the patient to discuss this and we decided that we would discuss remote programming as an option for him. After we reviewed a number of the kind of cell phone he had, things like that it was decided that remote programming would be a viable option for him if needed we programmed these.

So I did skip apart there, I apologize. So we decided after the clinic appointment was canceled that I would actually mail the hearing aids to the patient and program them using simulated real ear. I talked to the patient about that, he was on board, he had used RIC hearing aids before, so he was ready to get those devices mailed to him. I told him that we would have a follow up appointment as necessary. And I would contact him a couple weeks after he received those hearing aids to complete that. However, before I could actually contact him, he received the hearing aids, began to use them and called our clinic complaining of some sound quality issues. He said that he was having feedback, and it sounded like there was lisps at the end of words. And as we all know, these are problems with high frequencies so I needed to decrease the high frequencies of his hearing aids. Besides those sound quality issues, the patient said he was doing well with the devices. So after we reviewed the candidacy criteria with the patient, it was decided that remote programming was an appropriate option for him. We reviewed his smart device usage, and he had an Android Samsung Galaxy with the most up to date operating system. So he was able to complete remote programming. As the patient contacted our clinic that day, I decided I wanted to try to complete that entire process with him at that time. We did have a lot of time because

we weren't seeing patients in the clinic. So I actually started walking him through downloading the RemoteCareApp for Oticon onto his Android and setting up that account. We were doing well, he was able to follow along with the whole thing. Until we got to his email address. He had an email address and entered it and then informed me that he would not have access to that email account until the following Monday and it was Friday because his wife had the computer. And he could not get on to the email except for his wife's computer. So at that point, we were at a standstill. We could not move on with account setup until we could verify his email address. So this brings us to tip number 10, our last tip. The best way to become comfortable with completing telehealth services is by doing it regularly. This can be intimidating for at first I can tell you it was for me, especially when I had a problem with the veteran's email. But once we completed a few visits, you tend to feel much more at ease as a telehealth audiologist.

So what did I do once we hit the snag with the email? We agreed upon a time for the patient and provider to continue our remote care appointment. At the agreed upon time the following Monday, I contacted him and we were able to access the email and I walked him through finishing that account set up over the phone. We then moved to pairing the hearing aids to his smartphone which he was able to easily complete with my guidance. As the hearing aids were connected to his smartphone, I was then able to initiate the virtual visit and connect to his hearing aids pretty much instantly. And I decreased both high frequencies as well as the output for soft sounds on both devices. The patient told me he noticed an immediate improvement and he was satisfied with all the changes I had made. It should be noticed that he thought the process for remote programming was so easy that he would just contact me if he had any other problems with the sound quality of the devices. And we could do that again. So how would I have streamlined that whole process? I guess I'm sure after this whole presentation, you guys can guess how I would have done that. So an additional appointment prior to remote programming, an additional appointment prior to the remote programming appointment to ensure the patient's apps were downloaded. He was able to set up the

account and that the hearing aids were paired to a smart device would have allowed the remote programming appointment itself to go much smoother. However, an additional appointment for that could be time consuming especially in busy clinics. So alternative options for that would be to assist the patient and downloading the app, setting up their account and pairing their hearing aids at the actual fitting appointment, in as Dr. Jedlicka said, even though that might take up some time during the fitting appointment, it would allow us to have a much smoother and much quicker remote programming appointment at a later date. And if necessary, we can also mail detailed instructions to the patient and tell them to contact the clinic with any problems if you weren't able to complete this at either the fitting appointment or schedule an additional appointment to help patient with setup of the app and pairing the hearing aids. So to finish this, I do have a slide here with some details for each specific manufacturer. This is not comprehensive. Not every manufacturer is on here. But it talks about what versions the smartphones or tablets must be in order to complete remote programming. What hearing aids are compatible with remote programming and the specific apps for some of the manufacturers. So please keep this for your reference if it is helpful. But as I said, it is not comprehensive. So I'm going to turn this over to Dr. Jedlicka at this point and we're gonna go to our Q&A session.

- [David] Thank you, Dr. Kennedy. That was fantastic. And I couldn't agree with you more on tip number 10 there that the best way to really just get involved in this and feel comfortable is just jump right in and start doing it. The fear can be oftentimes the biggest barrier that you'll face. But once you've completed a few, you really just see how easy this is, how you can still provide high level hearing health care to your patients, and really just what a difference it can make for veterans and patients that can benefit from this type of care being provided. So now we're gonna move into our question and answer portion of the talk. So if you have any questions, you can go ahead and submit them right now. We do have a few questions to go over to start with. So the first one from the audience actually will address to you Dr. Oliverio. This question is asking, due to COVID I'm doing some work from home mostly contacting

current patients for follow up. Do you have any suggestions for making phone calls to our patients from home while keeping phone numbers private?

- [Tia] That is a great question. We ran into that when we were in the beginning stages of working from home and figuring out how to do telework that way. There are several options but what worked best for our clinic is an app. So you can actually have an iPhone or an Android phone. And it doesn't matter what type of phone your patient has, as long as it has a camera and is able to access email. So the app is called Doximity Dialer. And you basically go into wherever you download your apps. You're gonna type in doximity. You'll put in your information. And then once you are in the app, there's a keypad. And so you would type in the patient's phone number, and you would either hit phone call or video call. And what that does is it actually it'll scramble the patient's phone number on your phone, so there's no chance of butt dialing them later on. But the other great feature is that when you are calling out you type in a phone number that you would like them to see. So obviously I would not want a patient to be seeing my private cell phone number. I was using the clinic office number at the hospital. So that's what they see when it pops up on their phone. They think that the hospital's calling them. They don't need to know that I'm calling them from their cell phone. And you can do video calls that way too. It works really well.

- [David] Thank you, Dr. Oliverio. The second question that we have next, I think would be properly addressed by Dr. Kennedy. This has to do with billing and cochlear implants. So this question from the audience is wondering, how does billing work if you have two audiologist booked for a cochlear implant, telehealth patient appointment. Would the audiologist that is doing the programming do the note in the billing? Would it be the audiologist who's physically with the patient? How do you typically handle it for those types of visits?

- [Meghan] Thanks, Dave. So yes, this is a very good question. And like Dr. Jedlicka said at the beginning of the PowerPoint, I do not know all the specifics of billing for

each individual clinic. I work primarily at the VA and our billing is different from private sector billing. So the way that we address this, is that we always use the same code. So for diagnostic codes, when we block off that amount of time and we put the note in and the billing in for that, we make sure that we use the same diagnostic codes. Now the stop codes for that are different, it's going to appear appear differently for the cochlear implant audiologist as opposed to the non-cochlear implant audiologist. The cochlear implant audiologist is going to be who's billing for actually completing the programming of the bulk of the work for that cochlear implant reprogramming appointment. And now I'm usually the non-cochlear implant audiologist who's completing the hands on, being the hands of specialty audiologist at the other site and how I bill I would bill that as a follow up appointment.

So it is going to be a little different and it's going to vary from the private sector to the VA sector, but it is necessary that your diagnostic codes matched up and I would bill that as a follow up appointment. Now, one thing to note is that any of the hands on activities you complete as a non-CI audiologist who's at the other end with the patient, you would not keep during that encounter. You would open up another account encounter for the patient, which you would explain what you have completed. So any maintenance of the hearing aids, any cleaning, any sorry, not the hearing aids, the cochlear implant device, if you do any counseling with the cochlear implant patient, that would also be documented and billed during a separate encounter, as would any testing that you do. So if you do any Ada thresholds, if you do any speech perception testing, you are going to also outline that and bill for that in a separate encounter. So kind of a summary of everything I just said is there's going to be the appointment on both the provider and the non-provider end of the appointment that you had. It's going to be the same block of time. The non-CI audiologist is going to bill that as a follow up appointment. And then any hands on activities, maintenance, testing, counseling by the non-CI audiologist would be documented during a separate encounter and you would bill for that separately. I hope that helps.

- [David] Excellent. Thank you for that wonderful summary. The next question is asking us, have we used remote video autoscopy be in any way? I've actually had this right after our stay at home order went into effect in Pittsburgh and we closed our clinic and we're doing some work from home. I had a patient who was reporting some soreness on the lower part of the concha. And whenever I was trying to help the patient work out the issues, we determined really the best thing to do would to have the hearing aid be remade but what we were able to do on this video chat was to have the patient's wife actually hold the phone up to his ear. He was in a very well lit room. And I could actually see in the concha where those little red sore areas were present. And whenever the hearing aid was mailed in, we made sure to have it addressed in that way. So that was a very, very basic way to do it. However, there are things such as telehealth carts, especially if a patient is going to another clinic and you're treating that patient remotely, they do have ways for you to complete aotoscopy, you can see it on your screen.

So you could do full autoscopy even without being with the patient. However, doing it from home, I know I have not completed that type of procedure. I don't think any of the other audiologist here as well. But there are some ways you can do it on a basic level and there are some technology available that you can do this in a more thorough and appropriate way as to what you'd be expecting. Okay, next question here is do you use automated audiometry? And what has been the experience? Here at the Pittsburgh VA, like I said, we were kind of late to the game and getting this set up. So we haven't partook in automated audiometry, having trouble saying that for some reason, but there are other clinics which have used it and have found success in using it. So, in your slide handouts you have here some of the other talks on Audiology Online do cover how to use automated audiometry with the telehealth services. It's something that has actually been found to be very reliable and it's a really good resource. So even though we do not use it, I do think highly of it just because there is evidence behind it to support its use, and it can be very useful for providing telehealth care to patients who need it. And with that, I believe that is all of our questions for this session. I would

like to thank you all for attending. Hopefully the positives coming out of the COVID-19 pandemic means that we can all engage in better telehealth care more frequently. Hopefully if those of you are a little bit nervous about doing it, this will give you some inspiration to jump right in.

And I'd also like to thank the co-presenters here today for joining us in this talk. I think the information is very, very valuable. We are always glad to serve as a resource for you. Also, if you have any, ever have any questions, please feel free to reach out to any of us directly regarding telehealth or anything else, that we will be sure to act as a resource for you. So thank you all for your attention. And we hope that you have a wonderful and safe rest of your day, weekend and summer. Thank you.