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In a Changed World, Optimizing Patient Outcomes
Requires a Blended Care Approach
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- [Brian] Welcome, everybody. This is Brian Taylor at Signia. And today's webinar is entitled, In a Changed World, Optimizing Patient Outcomes Requires a Blended Care Approach. So over the next hour, we're gonna talk about a topic that is kind of emerging as a hot one. That's blended care, and what that means. I wanna remind everybody that this is actually part one of a six-part series on this topic of blended care, and how that can be used to optimize patient outcomes. Here are the six parts. I'm not gonna go into details today about these six. Over the next few months, you'll see these posted on Audiology Online. I hope to have a few special guests lined up for some of these sessions and something to look forward to. All of them addressing the concept of blended care. Here are my disclosures, in addition to my role at Signia, as director of clinical content development, I'm also the editor of Audiology Practices, which is the quarterly journal of the Academy of Doctors of Audiology. And I'm also an editor at large for the Hearing, Health and Technology Matters blog.

And here's our agenda today. I wanna talk about what is blended care. We'll talk about three prerequisites that I believe are needed to be successful when you implement a blended care model in your clinic. And then the third item on the agenda today is to talk about why and how a blended hearing care model fits into optimizing patient outcomes. So those are the three things we'll talk about today. Here are the learner outcomes. We won't have to go into details there, but hopefully we'll touch on all of these in some detail over the next hour. And I also want to just mention that, you know, given all that's going on in the world today, that this presentation is really dedicated to those patients out there that are vulnerable. Because they're older, they're vulnerable to COVID-19. Many of them are afraid to venture out of their houses. Even when they do venture out of their homes, they might be dependent on others to get places. They struggle with their hearing loss. And of course, because of that, they're susceptible to quality of life issues. They're challenged by some of the technology we're gonna talk about today. So this webinar and this series is really dedicated to all those patients out there that really need our help when it comes to better hearing, and better hearing

during this pandemic, especially. What can we do. And I wanna mention that, I've already used this term blended hearing care and if you look at some of the business experts around the country, one of the terms they use to describe the economy is low-touch, a low-touch economy, which basically means people are buying things without leaving their house. And they're not interacting face to face. And of course, that's happening in our own profession. But as we all know, in the profession, it's really the opposite of low touch where we have to interact with our patients directly. So blended care in the way I talk about it is really, the merging of both of these concepts; of high-touch service that we've come to, our patients have come to expect from us in this era of a low-touch economy. And from that, I think, that merging comes this blended hearing care model that we're gonna talk about. And hopefully, by the end of the webinar, you'll be more familiar with this term, what it means, what the potential is for people out there with hearing loss that we serve.

This term blended care is not one that I made up. It was actually created by a couple of audiologists and entrepreneurs in Australia. You see one of them pictured here, Elaine Saunders and her colleague, Peter Blamey, who started a business several years ago in Australia that still exist today that is really the, I think, serves as the foundation for how we talk about blended care today in this webinar. I also wanna remind everybody, that we live in a world where every business is a software business. You know, in addition to hearing aid fitting software, you know, electronic medical records, virtually everything that we do these days, requires some familiarity and knowledge of software. And of course, that's even more the case now that we live in this era of COVID-19 where people have to dial in remotely and virtually to get some of their care. And of course, with every business being a software business comes challenges that many of us have to overcome and deal with on a daily basis. Of course, one of them is how do we utilize tele-audiology? Here's a schematic that I borrowed from Dr. Greg Givens, who's a professor at East Carolina University, one of the audiology pioneers around this concept of telecare. And he kind of shows you the use of the cloud and how that

can be, in the internet, and how that's really the conduit that connects our patients with our clinics. And of course, this is a very hot topic these days for obvious reasons. It's good to kind of revisit what tele-audiology means, what it brings to the table. Certainly not new. This is one of the foundations of course of blended care. It's been available for about 20 years in some capacity. And it's a way for us to connect with our patients remotely, and enables us to practice within their full scope. And let's dig a little bit deeper so that we're all on the same page around tele-audiology and what that means. What are some of the variables? What are some of the considerations? If you look at the, what's out there today, there are two primary types of tele-audiology services in my view. One is conducting services in a satellite office that usually involves non-audiology staff and the satellite. And then the other of course is home-based care.

And just in the last few weeks, Audiology Today which is the magazine of Triple A published a really handy article on some of the different models and how they're implemented. And here is one of the figures that I borrowed from the article that was published a few weeks ago, that really breaks down some of the differences between equipment, the training of staff, payment structure, so on and so forth between the satellite clinic and a virtual clinic where the person is dialing in from home on their laptop. And in this schematic, you can kind of see some of the differences. When I talk about blended care, I want us to ignore the satellite clinic and just focus on the details of the virtual clinic when a person is dialing in from home to interact with their clinic. In addition to the satellite versus virtual clinic, I believe there are three primary applications of tele-audiology services and you see those listed here. We can break it up into three different categories. We have remote hearing assessment, remote hearing aid fitting, fine tuning and adjustment, and remote counseling and rehabilitation. And if you look in, within each one of those categories, you see some of the differences here depicted on this slide. For example, under remote pure tone assessment, we have screening procedures, which I think are a little bit different than some of the super threshold procedures that I listed here. Digits and noise test is one of them. And then

of course, you can do some type of pure tone assistant through the hearing aid. Various hearing aid manufacturers allow you to do that. And then when it comes to remote risk assessment, which is basically a virtual kind of case history, we do have one really handy tool that's emerged over the last few years called the Consumer Ear Disease Risk Assessment, or CEDRA. And in its current form, it consists of 15 questions that allow the provider and really the consumer to assess their probability of ear disease. And depending on the population that's being administered to CEDRA, the sensitivity, somewhere between 76 and 91% and the specificity, the ability to precisely tell you the probability of having a condition is between 72% and 80%, which is reasonably good. And I would encourage you, there's been a few articles published on CEDRA over the last few years, I would encourage you to look at those.

But here are two assessment procedures using pure tones and using CEDRA that can be done remotely, when a person logs in and connects with you in the virtual world from home. And I already mentioned the Audiology Today article. Another handy figure from that article I borrowed is on this slide, which shows you some of the capabilities, some of the features related to remote hearing aid fitting and adjustment. And virtually all hearing aid manufacturers utilize many of these features that you see outlined here on this slide. Of course, Signia being one of them. Signia has had a feature called telecare for a number of years, that checks all the boxes that you see here listed on this slide. And, in addition to telecare, Signia, just in the last week or so introduced another feature called Signia Assistant, which allows a person to adjust and fine tune your hearing aid in a more precise way using their phone. And I would encourage you to look for some webinars on Audiology Online and other places that go into the details of how Signia Assistant works. But for my purposes today, I just want everybody to be familiar with the fact that these tools are available to help a person with hearing aids make some adjustments independent, on their own or connect with the provider through the cloud, or through the internet to make those adjustments without having to come into the clinic. And of course, another dimension of tele-audiology is the

difference between real time and asynchronous capability. Of course, real time means you're interacting together at the same time using a feature or tool like Skype, versus asynchronous where there's a time difference between maybe you have the patient fill out a form and then they upload it and you can review it. Or there's ways that you can use asynchronous features to control hearing aids. My point is just to show that there's a difference between the two and both can be very valuable with respect to telE-audiology and blended care as we'll talk about. And of course, like I've already said tele-audiology is not a new thing. It's been around for a long time. Some places have used it and dabbled with it for a number of years. But of course, our worlds changed pretty dramatically about four months ago with the onset of COVID-19. And as the famous philosopher Plato said, necessity is the mother of invention. So many of us now are trying to find novel and unique ways to connect with our patients using some of these tools that I've already mentioned.

And I read this quote from Catherine Palmer a week or so ago, also in that issue of Audiology Today, that really underscores the amount of immense monumental change that we've all faced. It's pretty interesting to think that on Friday, March 20, all of the audiologists within the University of Pittsburgh Medical Center were seeing patients in person. And just over the weekend, how things dramatically shifted and all of those services were then done remotely. So you talk about necessity being the mother of invention, I think Catherine's quote, sums that up pretty nicely. And of course, I think the real challenge is most of us would agree that we practice audiology in a very high-tech, high-touch way. Meaning that we use a lot of technology. Historically, at least, when the patient is in the clinic with us need any receiving services. And that's what this slide intends to really, I think, outline, that that's a high-tech, high-touch, sort of interaction. But of course, what many have proposed because of COVID-19 is some different models. And if you look at the hearing journal a few months back, Swanepoel & Hall showed a couple of different models that utilize some of these tele-audiology tools. Here's one model that they proposed, low-touch, where the patient is basically

getting drive-through or counter or curbside types of service, where tele-audiology is used with some interaction with the professional in either counter side or curbside or wherever you wanna say it. And you can see the patient journey and how that low-touch model could be implemented throughout the patient journey. And of course, you can contrast the low-touch model that they've proposed with another model, no-touch, which is essentially shipping the self-test to the patient, I suppose you could do this online as well, that information, they do the test. It's shipped back to the clinic, the hearing aids are shipped back to the patient and the entire selection and fitting process is done without the patient ever leaving their home. So this is another model that they proposed. Now, I think, of course, there is advantages and limitations to those models and the use of tele-audiology. Some of the advantages of tele-audiology just in general you see listed on this slide. I think most of us would say that for many patients, it's much more convenient, especially when they're nervous and anxious about leaving their home during the pandemic.

And also you could certainly build the case that the use of tele-audiology is more convenient or more efficient for the practice. It might free up some time for you to spend it with a new patient and whatnot. And tele-audiology I think affords that opportunity of creating better efficiency within the practice. And of course, another advantage that we're gonna talk about in more detail I think later on in this webinar, is that tele-audiology or remote services really have the ability to enhance in-person care by providing some additional touch points. And you see some of those potential additional touch points listed here. Anything from additional counseling sessions where the patient might need some information from you, maybe troubleshooting the hearing aid, virtual adjustments with some of the technology we've already talked about from Signia as an example, and even preparation and goal setting. So the case that I wanna make with tele-audiology, and the advantage that it has is that it can really enhance in-person care, even after COVID-19 is behind us. Of course, in addition to those advantages, there are some pretty significant limitations of tele-audiology. I think most

of us would agree that the diagnostic information, even if the tools are pretty interesting, like CEDRA or the digits and noise or the shoe box audiometry tool that can be done online. That's still providing us with some pretty limited diagnostic information. I also think it's, at least I don't know of any tool that you can do real ear measures in the virtual world. So you're not able to really do the kind of verification procedures that are necessary with tele-audiology. It's difficult to get a communication partner involved. For those of you that have tried it, having two people on the Skype call instead of one can be done but I think there's some pretty significant limitations when you're working with a person with hearing loss and their communication partner dialing in from the same place. It's almost like you need two cameras, or two laptops instead of one. And of course, given the population that we often work with, and just the, you know, the nature of technology in general, technical difficulties can happen, you know, thunderstorms can knock out the internet, user error can occur. And so it makes the use of tele-audiology a little bit choppy and sometimes inconsistent. And of course, building trust and rapport is sometimes challenging in person. And even more challenging when you have to do it remotely.

You know, it certainly can be done, but it adds another layer of challenge. So what that really tells us with those limitations, and the fact that people still I think would prefer to have their services done in person is that I believe, you can combine sort of the best of both worlds both in-person care, the advantages there, and the advantages of tele-audiology to provide this blended hearing care model that really combines the best of both. And I think, and I'm gonna make the case that in this webinar, that the patient and the provider can really pick and choose when they wanna do appointments in person versus when they wanna connect remotely. And I also wanna make the argument that I think that the use of remote technology really has the potential to enhance relationship-centered communication by just adding another check-in point, another touch point, whatever you wanna call it, without the patient having to get in the car and come and see you. It's a really easy, convenient way to kind of check in

quickly, ensuring that a patient is wearing their hearing aids consistently, not waiting two weeks with the hearing aid in the drawer when they might have a really simple problem that you can fix remotely. So there's all kinds of advantages, I think, to this blended care model. And that's really what I wanna dig into next. And one way to look at it, just kind of in theory, as you see in this slide, again, the whole idea here is you meld the two in person and tele-audiology tools together, and the patient and the provider pick and choose when they wanna use the two different tools. For example, the hearing assessment could be done initially in person or with remote services. You could review the, you know, assuming a person is a hearing aid candidate, you could get them prepared using tele-audiology, which would cut down on some of the time during the in-person hearing aid evaluation. And then the hearing aid fitting I think, for a number of reasons, is probably better done in person. But then the checkup could be done remotely.

They could be checking in or conducting a checkup a little bit further down the line in person. And then of course, any fine tuning or adjustments to the hearing aid. Any additional counseling could be done using tele-audiology tools. So the potential I think is really pretty remarkable when you start blending the two different tools together. But to really, I think appreciate the blended hearing care model and how it can be used to optimize outcomes, I think it's really important to kind of step back a little bit, slow down, and let's just kind of look at some of the important goals and objectives that we have as hearing care professionals, what we really need to do. You know, it's not about the test, it's not about the technology, it's about what we offer to the patient to optimize their outcomes. And so I think it's really worth repeating some of the essential role of a hearing care professional, and what we bring to the table with our patients. And that's really our ability to recommend, fit, fine tune, counsel our patients so that the hearing aids improve the quality of their life. And of course, I'm just reminding everybody because I think this should be obvious to many but this, really I wanna revisit the importance of this. That hearing aids do two important things with respect to

improving somebody's quality of life. They improve communication, and they also affect and improve health related outcomes. What do I mean by that? When somebody consistently uses their hearing aids, when they become an all day, every day, consistent hearing aid wearer, two things stem from that. Improved day-to-day communication, which eliminates or minimizes activity limitations and participation restrictions, which unto itself is a pretty big deal, and really important. Then in addition to that, consistent all day, every day hearing aid use improves what are called health related outcomes. What do we mean by health related outcomes? Well, some of them are listed here. The reduce risk of falling, the decrease in social isolation, mitigating the trajectory of cognitive decline. We know if somebody is a consistent hearing aid wearer, that these health related outcomes are more likely to occur. And so of course, our job is to make sure that patients are aware of that. And our role is to enable as many persons with hearing loss to become all day, every day consistent hearing aid wearers.

And of course, tele-audiology and in-person care are two tools that we can use to increase the likelihood that these outcomes will happen. And that's what this slide really tells us is that that blended care model can be used to, in a high-touch service and a low-touch economy model to really make that happen, to optimize patient outcomes in a more consistent way. And what I wanna look at now are, if we believe that blended care is the future because we think that it's maybe more convenient for many of our patients, it adds some additional touch points without having them have to be, coming into the office. If it can add to our efficiency as practitioners, if it can maybe be appealing to unmet untapped segments of the market, then it's really, I think, imperative for us to think about, how do we bring a blended hearing care model to life in our practice? And I think in order to do that, three things have to happen. And you see those three things listed here. And we're gonna talk about each one in a little bit of detail. The first one, I have the red checkmark next to is really the infrastructure that has to be in place to use the tele-audiology side of the equation. And there's a lot of

other resources for this. I've already mentioned a couple of references here, but I think for our purposes, we wanna be aware that tele-audiology infrastructure needs to be stable, easy to use for our patients from home. And it has to ensure privacy. If we can check those three boxes, that increases the likelihood that we have infrastructure around tele-audiology that's workable. Let's look at two other prerequisites in a little bit more detail. Remember, the whole idea here is what do we have to have in place in our practice, to make blended hearing care effective. And the second prerequisite we'll look at in more detail is our ability to practice what I call relationship-centered communication. This is something that I've done a series of podcasts and webinars on at Audiology Online. So there's a lot more detail in those podcasts. I'm just kinda reminding everybody here and reviewing, what is relationship-centered communication and why is it so important?

So just to remind everybody, relationship-centered communication is two-way communication between a person with hearing loss and their communication partner, who are much more likely to be informed of their options, know they have choices and wanna be engaged in the entire process. In other words, they don't wanna be told what to do, they wanna actively participate in their care. And on the other end of the equation, we have a licensed provider who is not trying to sell somebody something, is not trying to conduct a transaction, but is rather tuned into the emotional needs and the values and the behaviors of the person with hearing loss. And in that model, it's really a two-way flow of information back and forth between the two parties. It's more collaborative in nature. It's based on what's called shared decision making. And it's really personalized to the behaviors, values, habits, motivations of the person with hearing loss and their communication partner. It's a much more improvisational approach, much less transactional in nature. And as I mentioned, I have a series of podcasts that get into the details here. I just want to reiterate how important this model is when it comes to practicing blended hearing care, because the person on the other end of the line really has to be engaged in the process. They have to turn their

computer on, they have to hook up to Skype. And that requires somebody who's not passive, but really active in the process and wants to be engaged in it. And of course, relationship-centered communication, really, I think is centered on this whole stages of change model, where you're trying to move people into the action stage through the dialogue and the goal setting process. And once they're in the action stage, keep them either there or in the maintenance stage. And like I mentioned, I would check out those other podcasts that I've done that go into the details here. I just wanna review this, and how important it is and why we do relationship-centered communication. And why is it important? I think there's a number of studies now that have emerged that show that the relationship or the interaction between the patient and the provider is really the cornerstone of effective intervention.

Here's a quote from Harvey Dillon, who just recently was quoted in an article saying this, "The largest predictor of hearing aid benefit is the quality of the interaction with the professional rather than the degree of hearing loss, rather than the technology that the person is wearing in their ear." And of course, what that really boils down to, is if you're practicing relationship-centered communication, and not transactional communication, trying to sell somebody but rather focusing on the relationship, that that really improves the probability of the patient experiencing successful outcomes because they're engaged in the process. So if it's so important, I think that really needs to be a cornerstone then of the blended hearing care model that you might be implementing in your practice. Let's now look at the second prerequisite or really the third prerequisite we're gonna cover today. And let's spend a little bit of time on this one as well. And that is your ability to follow a clinical protocol. I think over the years, you've heard a lot of mention of clinical protocols, they kind of come and go. When it comes to popularity and a hot topic, I'm gonna make the argument that a clinical protocol is one of the cornerstones of being able to practice blended hearing care. And it bears I think, asking the question, what is a clinical protocol, and why is it important? And when I think about a clinical protocol, I like to think of analogies like building a

skyscraper, or building a building and the necessity of having systematic protocols here. I think that this is where, you know, if there's a mistake made, obviously, there's some pretty serious repercussions. And it really speaks to the importance of having a protocol, and any important endeavor that you might choose to do. And, you know, sticking with an analogy of buildings, you can think of a protocol as a way to provide a structure or framework that increases the probability of success. And it allows for accurate, rapid production over and over again. In the case of a builder, it would be of course a building. In the case of an audiologist or a hearing care professional, it's a patient who's a successful, consistent hearing aid wearer. So our protocol, our blueprint is the ability to follow step-by-step certain tasks and procedures. And the more we do that, the more likely our patients are, more of our patients to be successful. And with respect to a clinical protocol and audiology, I think there are five things that have to happen for that protocol to be successful, or to be usable in the clinic. And you see those five things listed here.

Number one, the protocol has to lead to outcomes that are better than random activity. Meaning if I just have a patient show up and I talked to 'em for a while, and willy nilly do a couple of different tests and I'm able to show that my outcomes are consistently good on everybody, that kind of blows a hole in having a protocol. So any protocol really has to have data to show that it's better than just random activity that you might do in the clinic. The second point is the protocol has to be feasible for the patient to do. If you're asking them to engage in activities, or procedures in your clinic that are really difficult and time consuming, really challenging for them to do, then it doesn't make sense to have that as part of your protocol. Number three, any part of a protocol has to be completed in a timely manner. If it takes 20 minutes to do some simple test or two hours to complete an entire evaluation, from a time standpoint, even if that's an excellent evidence-based outcome involved, that's really not something that's doable in the clinic. Number four, a protocol has to be repeatable by the licensed or the credentialed staff. So if you're in a practice with five audiologists, all five of the

audiologists really needs to be able to implement or execute that protocol. And then the fifth one is, a protocol really is something that should be done throughout the entire patient journey. It shouldn't just be done for one particular appointment, or one particular kind of patient, but it should be something that's really woven throughout the patient journey. Of course, for each different milestone or each different interaction, there's probably a different protocol, but it's something that fits into the entire patient journey. In other words, for a protocol to be effective, it has to check all five boxes that you see listed here on the slide. And where do you apply that protocol? One way to think about it, is looking at it through the lens of the patient journey, or what I call patient milestones. And I think most of us would agree for a patient, you know, that's there for hearing intervention, which usually involves hearing aids, these are the five important milestones, preparation and assessment, goal setting and treatment planning, hearing aid fitting and orientation.

The first 60 days I call it short-term follow-up and beyond the first 60 days, long-term follow-up. Now keep in mind, the overarching reason you think about these milestones is you wanna make sure that as many patients as possible are full-time, all day, every day, hearing aid wearers. And I think we're more likely to achieve that goal if we have a protocol in place for each one of these five milestones. And, of course, over the years, there have been a number of protocols that have been created and published. I can think of the 2006 American Academy of Audiology protocol for adult hearing aid fittings. I know that ASSHA has a similar protocol, and ADA has a similar protocol. Various states might have some type of a recommended procedure or guidelines for pediatrics or adults. I think all of them are probably worth following. But the one that I want to tune everyone into is one that's been recently published, that has some really solid data behind it being effective. Remember, point number one is, the protocol has to lead to outcomes that are better than those that come from just random activity in the clinic. And here's a protocol that I wanna introduce to you that I think does that in a really profound way. And this was the protocol that was developed around this study

that some of you might know about. It's been talked about in various circles for a number of years now. It's called the ACHIEVE study, ACHIEVE being an acronym that stands for aging and cognitive health evaluation in elders. For those of you that are unfamiliar with this ACHIEVE study and the results of this study have not been published yet. It's a study that's, it's a longitudinal study over a number of years. And I think we won't see any results for at least a few more years in the study. But it's a randomized control trial. Franklin and others at John Hopkins University have talked about this study a lot, and they're some of the leaders in the study. But the goal of the study is to examine the effects of hearing aids or hearing intervention, I think, is probably a better term on cognition and the long-term rates of cognitive decline in older adults. And in order to conduct this study, the researchers had to develop a protocol to ensure that there was some consistency or some structure in the way that they collected the data in the practice.

I mean, it kind of makes sense, if you think about it, you have to have a structure around how you're gonna create that data. You have to make sure that you're seeing the patients in a way that's going to lead to the best possible outcomes. And what the researchers then went about doing back in 2014, was they convened a panel of audiology experts. And without going through all of the names, you see many of those audiology experts on this slide. And they're the ones that created the protocol we're gonna talk about next. And by the way, if you wanna read the details of the ACHIEVE protocol study that they used to collect the data for the more overarching study around cognition and hearing aid use, you see that cited there at the bottom. This was published about six months ago in Ear and Hearing Online. And those six or eight audiology experts as part of their panel, these are the elements that they came up with as part of the ACHIEVE protocol. Now remember, they're gonna use this now to collect data in their study that looks at the relationship between hearing aid use and cognitive decline. And you can see the elements listed here. Comprehensive audiological evaluation comprised of otoscopy, tymps and reflexes, pure tone and speech

audiometry, and the Quick SIN and the sound field. Another element was goal setting. They basically use the COSI which most of us are familiar with. The degrees of change on the COSI, I think it's a five-point scale. Another element was self-management. What they used for that was a couple of different self-guided video modules. You see those listed here, I'll show you some examples in a second. Another element is hearing aid verification fitting and orientation using standard REM, hearing aid orientation programming procedures. They also looked at, another element was hearing assisted technology, the selective you know, remote microphones, telephone, TV solutions as needed. And then finally, an outcome assessment. And you see some of the variables there, the HHIE, hearing aid data logging, the IOI-HA, and the aided Quick SIN and the sound field were the outcome assessments. Now, so one way to think about those elements, what I'm trying to do here is think about now, this is the study that was done. How does this apply in the clinic?

You can think of the elements as sort of things that you have in your toolbox. So of course, your audiometer which is where you know, the Quick SIN and the pure tones, you know, think about tymps and reflexes, your real ear, those are all certainly part of the toolbox. But in addition to the hardware, the software so to speak, would be things like the COSI. Either pencil and paper in the virtual world or however you wanna do it. The HHIE, another element of software that you need in your toolbox. The IOI-HA, seven questions that very broadly measure hearing aid benefit and satisfaction. And then of course these video modules. This one comes from Australia. You can find these online actually. Active communication education, I think the I stands for individualized. The person could kind of watch this on their own. And it's a way to supplement in-person orientation, communication training, problem solving all in these little eight to 10-minute video snippets. And that one comes from Australia. The C2Hear comes from the UK, also found on YouTube. There you see the reference there on the line. These are all part of the the protocol that the panel of experts developed. And then how did they implement the protocol as part of the study, that's what comes next. So what you

see in the next couple of slides are really the timeframes around several different visits. So here you see, week zero is really making sure somebody could be included in this study. So determining candidacy which is probably, of course, something you wouldn't do in your clinic. But then they look at visit number two or week one, that's assessment and goal setting. And you see some of the elements, what was done there, on the right hand margin. But what was really interesting about this study from a clinical and how this applies clinically, is they measured the time it took to conduct each one of these visits. And so what you see there from week one, week two, four and seven, not only what the, how often they had the patient come in. But then what was the mean amount of time each one of those visits took. So for example, if I go to visit or week two, intervention session eight, where they did the fitting and the orientation, the verification, they had the patient watch a couple of those self-guided modules.

On average, that appointment took about 75 minutes, versus the, I guess the two-week checkup. It took a little over a half an hour to complete the adjustments, to watch a couple of more of the modules, and to engage in a discussion on assistive technology. So you can kind of see the timeline, at what week they came in, and then what the average amount of time each visit took. And you can see, there were six total sessions if you include the final outcome several weeks later at week 24, what they called post intervention. So this is how the study unfolded. This is, I just wanna share with you the results of the study because what this really shows you is, the importance of how a protocol achieves superior outcomes relative to random clinical activity. So you'll notice here for example, the Quick SIN pre-intervention, a relatively high unaided score, 11.8. At week 24, the mean aided score was 5.3. That's a significant improvement. Remember on the Quick SIN, the lower the number, the better, the more effective the patient is able to hear and noise. On the HHIE, a measure of self-perceived handicap, 25 is a really high number. That's telling you the patient as you would expect in the unaided condition, high perception of the hearing loss causing a handicapping condition. At week 24, several weeks after the fitting, that number was

lowered to, into the single digits at 6.1. COSI done postintervention, four out of a five-point scale. Remember one to five, the average was four, on the one to five scale. The IOI-HA done postintervention, a score of 30. That's a very high level of improvement. Then you start looking at some things outside of the traditional metrics, like the percentages of the visits that were completed. This is looking at patient feasibility. Is this doable for them to actually follow the directives? You'll notice that 90% of the visits were completed at week 24. And then, really one of the more important measures of outcome, you know, is the patient wearing their hearing aids because we know consistent hearing aid use is more likely to lead to a favorable outcome. You can see looking objectively at it using hearing aid data logging, that it was eight hours a day on average, which is a pretty good number. So the positive information, and how this applies to you clinically, is that it shows you that within five in-person visits spread over nine weeks, you can get very favorable outcomes.

And that the mean amount of time, on average is about 4.2 hours to complete those five visits. Now, of course, you'll notice the range goes from 3.3 and a quarter hours to 5 and a third hours. So there's a little bit of a range there, but on average, about four hours and 10 minutes to complete all five of those visits, which gives us I think, a really good frame of reference. And I think, I don't have it in the slide deck and I was trying to find the data but I know back in 2003, Kashkin, as part of his market track study showed that it took about 4 hours of time during the 30-day trial for a person to receive maximum satisfaction scores. If you were less than that, satisfaction had a tendency to decline. If you were more than four hours, satisfaction had a tendency to decline. So the good news here from this study is this number is in alignment with the previous study from Kashkin. Anyway, back to the protocol and is it feasible? We've checked all of our boxes here from a clinical standpoint. Better than random activity, you know, feasible for the patient to do five hours, certainly doable for many patients. Completed in a timely manner, repeatable by staff, and, at least for this part of the journey, it was utilized. So from the provider's perspective, you could say from this study, you know,

with respect to the importance of a protocol that it takes five in-person visits, or an average of 4.2 hours over those five visits for the first 60 days to optimize patient outcomes. That's the provider's perspective. Now really important here, now I wanna start thinking about how does this matter in blended care? It's a little bit different story. If you think about our patient that I showed you earlier, Mr. Jones, we'll call him. For Mr. Jones perspective, who's worried about COVID and leaving his house or can't find a ride, those five visits, or 4.2 hours of clinical time might be a journey too far for some of us. 'Cause remember, from our perspective, 4.2 hours of clinical time may not seem very much. It may seem very feasible.

But from a patient's perspective, who has to find a ride, take time off of work or get there, spend time waiting to see in the reception area, that 4.2 hours of clinical time is probably more like 10 or more hours of actual patient time. So from a patient's perspective, those in-persons visits might be a little bit infeasible, not very doable. And this slide comes from a market track study from about 10 years ago. But it also speaks to the disconnect between the feasibility of a protocol from a patient's perspective and a provider's perspective, because what this shows us is the relationship between hearing aid success and the number of visits for adjustments during a 30 or 60-day trial period. And what you notice here in this study, in this data point, is they divided patients into two different categories. Those that had below average success, and those that had above average success. And what you notice here are the patients that tended towards above average success came in for fewer in-person visits. Those that had a tendency to be experiencing below average success from their hearing aids came in for more in-person visits to adjust their hearing aids. The point being, that there's a disconnect between the number of visits it takes to optimize satisfaction in-person, and the number of visits from a patient's perspective that it takes to optimize satisfaction. So this data really speaks to two things; the importance of getting it right, but also the importance of trying to minimize the time a patient has to come in, in-person for visits. That data I think really tells a good story about how and

why blended care can fit into a model of optimizing patient outcomes. Because rather than have the patient come in unnecessarily from their perspective for a visit, why not do it remotely using the technology that's available for us so that we can optimize patient satisfaction from an adjustment standpoint on the hearing aids, but minimize the number of times the patient has to come into the office. So what I really wanna kind of end this one-hour webinar on right now is begin the conversation around how does blended hearing care fit into optimizing patient outcomes. And this is really, over the next couple of sessions, we're gonna take a much deeper dive into this, but I wanted to end today by talking about how we can blend in-person care with remote care as a way to improve patient satisfaction, to improve convenience and ultimately, improve patient outcomes with their hearing aids. And if you recall, we talked about these five interaction milestones from... When we work with our patients, we have to have a protocol in place, we have to practice relationship-centered communication at each one of these five interaction stations. And so what I wanna end with is the first one, preparation and assessment.

Remember, the ultimate goal here is to ensure that our patients are consistently wearing their devices, you know, seven or eight or more hours per day so that they can experience all those benefits. And for the first interaction milestone, preparation and assessment, how can we blend remote and in-person care? And so what you see here on this slide, are some of the things you could do from a remote standpoint, what I call pre-intervention planning. You know, imagine a person who is, maybe their family is saying you really need to look at getting hearing aids. But I don't want you to go into the office, because it's too risky right now, or maybe down the road, they say that because it's just too inconvenient, we can't get you there. What are some things that you as a provider can do with respect to pre-intervention planning? And I'm gonna make a case for that. Stage of change, degree of hearing loss, expectation, and just overall preparation for a hearing aid evaluation appointment. All of those things can be done remotely. In addition to that, some other things that you could possibly do

remotely fall under preintervention screening. You could do a hearing screening remotely. You could assess a patient's risk factors remotely. And of course, there's gonna be some limitations there. So ultimately, you're gonna want that person probably to come in for an in-person assessment, where you do comprehensive audiometry, perhaps the Quick SIN, and then you can review some of that pre-intervention information that you've collected. So the cadence or the flow might look something like this, where you collect remotely under pre-intervention planning and screening, and then that feeds into your in-person assessment down the road. So it's really the blending of the two tools; in-person care and remote care together. Just to give you a little bit more information of what I'm talking about here, under remote pre-intervention planning, when you talk about reviewing expectations remotely, you might wanna be talking to the patient. What are some things you can expect during the in-person appointment?

You know, what information are we gonna collect? Sort of prepping them. You might wanna prep them around expectations, around what happens when they begin wearing hearing aids. When it comes to remote evaluation of the stages of change, you can ask a question like the one in the middle of this slide; which of the following best describes you? And then you see the four different possibilities. And if you think back to that stages of change, stair step I showed you a little while ago, the response from the patient tells you what stage they might be in. And then depending on the stage they're in, the next part of the appointment process could be slightly different. And then finally, under remote intervention planning, evaluation, the perception of the patient's handicapping condition, you could administer a tool like the HHIE remotely, email it to the patient, review it with the patient remotely and get that out of the way before they see you in person. I've already mentioned these tools when it comes to pre-intervention screening. Shoe Box Online Audiometry is one tool. CEDRA is another tool that you can use to gather some of that information before the in-person assessment. Perhaps even in a pinch, you could use the information from these two

tools to even begin the fitting process without seeing the patient. Just how effective are some of these remote care tools? Some of the researchers at the National Acoustic Laboratories in Australia have actually gathered some information, from both the patient and the provider's perspective. They both really like the tool. Here you see some quotes from a study that Jeremy Pang at NAL presented on, you can find this on YouTube actually, that showed that both patients and providers find that the preparation that can be done remotely, actually contributes to I think, greater and more effective higher quality of in-person care, because you're essentially kind of prepping the person before they come in. And both the patient and the provider have seen that as you know, beneficial.

So I see that our time is up here. And we're gonna over, the next couple of sessions, around blended care we'll go into much more detail around those patient milestones and how you can blend in-person care with remote care to really drive overall satisfaction and benefit, and make it more efficient for your practice, more convenient for the patient. But the points I wanted to make today is that, even in this new world of high-tech, low-touch economy, it still requires a high level of professionalism. It's more, I think, essential than ever to practice relationship-centered care. I think if you think of it as purely transactional, it's really hard to get the patient to engage in using virtual technology. But if it's two-way flow of information where the patient is more apt to be actively involved, then remote kinds of services can be more effective. In addition to that, I hope I was able to build a pretty solid case around why a protocol is important. And that ACHIEVE protocol is really, I think, kind of a great foundation or blueprint for repeatable, evidence-based procedures that are done in your clinic that are better than random activity. And that that ACHIEVE protocol can be done both with in-person and remote tools. That blended care is a way to save an immense amount of time for your patients. You know, it may take five hours or four hours for us to optimize patient outcomes over 60 days. But from a patient's perspective, that's 10 or 15 hours of time, that they could be doing something else. From the clinical perspective, it improves

efficiency. And I think you know, that's important. We wanna free up as much time to see more complex cases, or maybe more revenue generating opportunities. And then finally, I think the whole blended care approach has the potential to appeal to untapped segments of the market, you know, people that maybe for whatever reason, didn't wanna have to come into the clinic, thought it was cumbersome, took too much time. They might find a blended care model, a great way to really, you know, in the low-touch economy, to still receive high-touch service. So those are all of the reasons why blended care, I think is really in a lot of ways the future of audiology.

It's a way for us to practice at a high level. Still, you know, see the patient in person when we need to, when they want that to happen, but at the same time, offer them these added touch points. And I'll just kind of close here by sharing with you some of my resources. I can't emphasize enough that first reference there from Elaine Saunders, that's an outstanding book. Remember, Elaine Saunders is one of the creators of the blended care model in Australia. I mentioned the Pang YouTube video. There's actually a whole series of really fantastic videos from the NAL folks that you can find on YouTube called Sound Bites. Series of articles at the Hearing Journal on tele-audiology that are essential. And a presentation by Harvey Dillon that showed that it's all about the relationship as kind of the overarching factor that drives satisfaction. So I wanna thank you for your time. I know these webinars can be a little bit long winded at times. And there's my email if anybody has any questions or comments, be sure to reach out to me and I wanna thank you for your attention, and hope this was useful information.