The Roles of Audiologists and Dispensers Working with Hearing Aid Users in Cochlear Implant Candidacy, in partnership with American Cochlear Implant Alliance

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- Thank you everyone for joining us today for the second in a series that we're holding with AudiologyOnline. And this particular course is on the roles of audiologists and dispensers in working with hearing aid users in cochlear implant candidacy. And our speaker today is Alejandra Ullauri, who is both an audiologist and has a masters in public health. And we could go on to the next slide. I'm Donna Sorkin, I'm the executive director of the American Cochlear Implant Alliance, and it's a great honor to be back with everyone talking about this five part series on assessments and in hearing healthcare for adults. And we're really trying to emphasize the importance of looking across the continuum and getting people out of silos of working with one technology or the other, but really thinking across.

And so we're to today, we're looking at the roles of audiologists and dispensers who are touching people who are wearing hearing aids and being able to talk to them about their possible CI candidacy, all along their hearing journey. And then we have also spoken already about adult assessments, coming up will be a course on new CI quality of life instruments to be able to personalize and improve care. The fourth in the series is on adult perceptions of hearing status and options and how professionals can use that information to help someone along their journey. And the very last in the series is on optimizing comps and hearing technologies, both hearing aids and implantable devices. So we hope you'll look at all of the five components of this series, and we could go on to the next slide.

And I'm just gonna give you a little bit of information about the American Cochlear Implant Alliance. We are a membership organization that's focused on cochlear implantation and access to care. And we're unique in that we have that single focus for our work and our members are audiologists like our speaker today, as well as physicians and speech pathologists, educators, psychologists, and others on teams. And we also have an a growing number of consumers and parents and advocates and hearing aid specialists who join us so that they also can be informed about when to

refer. We have a website for those who are in and outside of cochlear implants, and we're highly collaborative with other organizations in the field as well as our favorite collaborator, AudiologyOnline.

And we welcome your involvement and we've just given you a few places to get additional information there. Our website, Facebook, and Twitter. We can go onto the next slide. And this is our mission to advance access to the gift of hearing provided by cochlear implants through research, advocacy and awareness. So we work on all three of those components of access. We look at factors that contribute to under utilization of cochlear implants, such as referring people in when they are candidates. And we certainly wanna improve awareness regarding candidacy and outcomes. And so that's another big part of what we do. Let's go on to the next slide. And now I have the great honor of introducing Alejandra Ullauri.

She's the director of the Chicago Hearing Care Center, and that is in Chicago and where they work on a number of care issues for primarily for adults. And she's also the founder and instructor of Audiology En Espanol, and she's a bilingual audiologist. She has worked on cochlear implants for over 20 years in university and private settings. And today she's going to be helping us address this issue of when to refer, when should you think about letting someone know about their possible candidacy. So with that, I'm so happy to turn the floor over to Alejandra. Thank you for being with us today and sharing your insights.

- Thank you so much, Donna. And thank you AudiologyOnline for having me today. This is a topic that is near and dear to my heart. I'm passionate about providing continuum of care and providing different options to our patients with hearing loss. So thank you everybody for joining us today. Here are some of my disclosures. I think that after the presentation, you'll be able to download the slides and all the slides will have active links to some of the references that we are going to to cover. Today's learnings

objectives. After this course, participants will be able to describe what continuum of care involves when providing hearing services to patients at risk, or two patients living with hearing loss.

Participants will be able to describe the screening tools that we have available today to identify potential cochlear implant candidates and participants will be able to list key aspects of their audiological cochlear implant evaluation and how that relates to hearing aid validation. We're gonna spend a lot of time talking about that. So to accomplish those learning objectives, we're gonna talk about scope of practice. We're gonna talk about continuum of care. We're gonna see hearing loss as a chronic condition. We're gonna talk about hearing aids and outcomes measures. We're gonna talk about monitoring outcomes over time and cochlear implant screening tools, as well as conducting cochlear implant assessment in private practice. So here are some observations that we are going to see throughout the presentation.

I'm sure many of you are familiar with this. So I wanna start reminding everybody that hearing is important across the live course. So if you haven't yet, I really recommend to download the World Report on Hearing that was published in 2021. This is a great resource that will walk you through prevention in prenatal stages, all the way to hearing loss and hearing loss treatment across the lifespan of our patients all the way to older adults, a great resource, but the main point that they highlight in this resource is that hearing is important across the life course, and we need to provide services across the lifespan of our patients. So this presentation is geared to hearing care professionals who are non-physician.

So basically we're talking about audiologists and hearing aid dispensers. So let's go over the scope of practice to begin with. So audiologists, according to the American, as stated in the American Academy of Audiology website, audiologists identify, assess, diagnose, and treat individuals with impairment of either peripheral or central auditory

and or vestibular function and strive to prevent such impairments. So as you can see, the scope of practice based on the education, clinical experience and licensed that audiologists have the scope of practice is pretty wide and involves hearing and vestibular disorders from prevention all the way to treatment. When it comes to hearing aid dispensers their scope of practice is it concentrates on the provision of hearing aid services.

So this might change from state to state, but I downloaded this description from a website in Colorado and I thought it was very comprehensive. So hearing aid dispensers licensure qualifies them to provide hearing aid related services to adults, including conducting and interpreting hearing tests, prescribing, selecting and fitting hearing instruments and assistive devices, including electroacoustic targets and programming parameters, assessing hearing instrument efficacy, using appropriate fitting verification methods, including available fitting validation methods as well, and initiating referrals for medical evaluations. So we are both, these two professions are working with patients who are candidates, hearing aid candidates or hearing aid users. So based on the scope of practice, we can see that both professionals can conduct hearing tests, hearing aid selection, hearing aid fittings, hearing aid verification, hearing aid validation.

We have two different methods to conduct hearing aid validation, subjective and objective. Subjective, obviously we use quality of care questionnaires and objective, we use speech-in-noise testing or speech perception testing. And that's gonna depend on the practice setup that you have. And then audiologists and hearing aid dispensers can conduct cochlear implant screenings. And then audiologists are the ones, the only ones that will be able to continue and conduct cochlear implant assessments. So I wanted to highlight this because I wanna make sure that all the audiologists joining us today are aware that this is within their scope of practice. So when we talk about

continuum of care in hearing health, we're talking about a system that provides services across a, provides a range of services that evolve with the patient over time.

And that's the key point of today's presentation. We wanna make sure that when we provide hearing services to our patients, we're offering options and we are offering options across over time, depending on how their condition evolves. So continuum of care starts with prevention, moves on to early identification, diagnosis, and of course it goes on to provide rehabilitative services. As you can see, continuum of care is at the core of the standards of practice of audiologists. The standards consider that audiologists assess, diagnose, and treat a diverse population across the lifespan through the practice of culturally sensitive patient and family centered care. The standards require that audiologists continually evaluate and improve care through assessment of outcomes. And I cannot highlight this enough because this is at the core of our discussion today.

We need to assess out outcomes so we can improve care through the assessment of outcomes. And we're gonna talk in more detail how we're gonna do that. So basically we prevent hearing loss, we diagnose hearing loss, and then we treat hearing loss. Most hearing losses will benefit from hearing aid fittings, sensory neural hearing losses, but our job doesn't stop there, then we have to measure outcomes. Outcomes, pre-measuring outcomes means that we are measuring that the treatment recommendations we made work for our patients, and then we need to monitor those outcomes over time. And then we continue to improve care by assessing outcomes over time, just like this standard, the practice standards that we have, say basically we need to measure outcomes and then we need to improve care based on the assessment of outcomes over time.

So why is so important to provide continuum of care? I'm sorry, because hearing loss is a chronic condition. For those of you that joined last week for the first webinar of this

series, this was a topic highlighted by Dr. Dan and Dr. Good. And one thing that they raised was that hearing loss is not in the chronic condition, chronic disease list put together by the CDC. But that doesn't mean that it's not a chronic condition. It only means that we need to do more work to get hearing loss in that list because hearing loss meets the definition of a chronic condition. According to the Agency for Health Research and Quality, a chronic condition is defined as a condition that lasts 12 months or longer and meets one or both of the following.

It places limitations on self-care, independent living and social interactions, and or it results in the need for ongoing intervention with medical products, services, and or special equipment. So when we talk about hearing loss, we're talking about a chronic condition. Our patients with sensory neural hearing loss have a condition that cannot get better. In the best case, it will remain stable, but likely it can deteriorate. So what are the treatment options for our patients? Well, we know that our patients have, there are medical management options. We have non-implantable hearing aids and we have implantable hearing devices. For the purpose of this webinar, we're gonna concentrate on prescription hearing aids in the non-implantable hearing aids category, and we're gonna concentrate on cochlear implants in the plantable hearing devices category.

So for those of you working with patients in fitting hearing aids and following up these patients, you are very familiar with the hearing assessment. You're familiar with the hearing aid evaluation selection with the hearing aid fitting, for the last 10 years, we've put so much effort into highlighting the benefits of hearing aid verification, but we cannot stop at verification because verification is only a technical way to demonstrate the hearing aid is doing what it's supposed to be doing. But we need to demonstrate that our patients are benefiting from those hearing aids. So that's why conducting hearing aid validation is so important and we need to close that cycle. We cannot stop at verification, because hearing aid validation measures the effectiveness of the treatment recommendation that we made.

It measures how successful our recommendation was and how our patients are benefit benefiting from that. So we can validate hearing aid outcomes using objective measures and subjective measures. Objective measures include speech perception testing, also known as speech-in-noise testing. When it comes to subjective measures, we have questionnaires or quality of life questionnaires. So these are just some examples of objective measures and subjective measures. So to this list of objective measures, I want to add Az Bio sentences and I want you to keep this slide in your mind 'cause we're gonna come back to this. So just remember we have objective measures such as the QUICK SIN, the HINT, the BKB sentences, and we have subjective measures such as the Hearing Handicap Inventory, the COSI, the SSQ and so on.

Objective measures help us demonstrate the difficulty reported by our patients. So when our patients come and say, "I'm struggling every time I go to a restaurant, every time I go to a meeting, every time I'm at a family gathering, I'm struggling." We can demonstrate that difficulty by testing speech-in-noise understanding. We can use that information to counsel expectations, but we can also use that information to look at the technology features that our patients may need and or other rehabilitative options. So to conduct objective validation of hearing aid benefits, you need a sound booth with a speaker. You need recorded materials so you have reliability over time, and you need a booth that is at least, that is big enough so you can place the patient at three feet or one meter from the from the speaker.

But unfortunately, validation measures and objective validation measures are not used as often as we would like them. A recent study published last year, this study was conducted in the United Kingdom, show that 56% of audiologists in private practice were using speech-in-noise testing at the hearing aid fitting or follow up. And that 56% included people that responded that they were using these measures always often or

sometimes, and those results are not far from what Clark and his colleagues reported in 2017. This was a smaller cohort of participants, I believe it was less than a hundred, unlike the study in England included about 300 respondents and the study in the US was a little less than a hundred, but the results are not that different, in this study they also showed that about 46% of clinicians were using speech-in-noise testing in clinic, sometimes, often, or always.

So we can see that then in our daily practice, those of us fitting hearing aids, were not taking that next step to validate hearing aid outcomes to make sure that we can demonstrate our patients are benefiting from those treatment options that we recommended. So as we started this conversation, the continuum of care, we need to provide services that include a range of options that can evolve with the needs of our patients over time. We also need to validate hearing outcomes and we need to monitor those outcomes over time because a patient that benefits from hearing aids today might not benefit from hearing aids in five years. So we need to make sure we monitor those outcomes so we can spot when difficulties arise and we can do something about it.

And how do we monitor benefit over time? We do it exactly the same way, we use objective measures and we use subjective measures. So you use the same measures that you use at the beginning to validate your hearing aid outcomes. We use the same measures over time to monitor benefit. And this is the slide that I told you keep in mind. So when you monitor hearing aid validation, I have chosen to use Az Bio sentences in my clinic because you're gonna use sentence in noise, I can use Az Bio sentences in quiet and in noise, Az Bio sentences, unlike the QUICK SIN gives me a percentage and a percentage is very easy to, it's a very tangible tool for counseling.

We know that the hint has some sealing, sealing effects and so on. So I've incorporated Az Bio sentences to the hearing aid validation protocol in the clinic.

Dealing with percentages makes it a lot easier to track progress or deterioration of progress over time. And Az Bio sentences are part of the cochlear implant test battery. Az Bio sentences are used in the pre-surgical assessment and also post-implantation. These are the tests that are part of the cochlear implant assessment, the part of the audiological cochlear implant assessment. For those of you that joined last week, we heard that Dr. Don shared that this is under revision. We might be seeing a new test battery, but at the moment this is what we have and we have Az Bio sentences, CNC word lists, BKB sentences.

Those three tests are part of the minimum speech test battery. Study conducted by Dr. Prentice at University of Miami and published in 2020, show that in the United States Az Bio and CNC and CNC word list is basically what is used in the cochlear implant. In the audiological cochlear implant assessment. Az Bio sentences have also been used in the every time, I'm sorry, let me back up. In the recent years, cochlear implant candidacy screening tools have been developed and those screening tools have taken in consideration the pure tone average of those patients and the annotated word recognition score and those scores and those pure tone average levels have been correlated to those Az Bio scores of those patients that met criteria for cochlear implantation.

So this is just another way to say Az Bio have been, are speech-in-noise, speech-in-noise test. They're a sentence test, they're part of the cochlear implant assessment. They give you a percentage and they've also been the tool used to develop these cochlear implant screening tools. So I can tell you that Az Bio sentence provide me with a smooth transition from a hearing aid validation to a cochlear implant assessment. I have a couple of examples here. This is a patient that was referred by neurology, 65 years old with a recent diagnosis of mild dementia. These are her unaided word recognition scores, 85% in the right ear, 75% in the left ear. We fitted her

with new hearing aids and then she did Az Bio in noise at five dB SNR and she scored 89%.

Family was delighted because in that first month they noticed a big difference. And then when the patient comes back a year later for her regular annual follow up, we conduct exactly the same validation test and we want to make sure that patients sustain their listening performance. And we want to make sure that if there is a deterioration, we can catch it so we can address it. So patient comes back a year later, still scores 89% in noise. This is another example of a patient who's 84 years old, experienced hearing aid user. She calls to say that she's really struggling. She was doing really well with her hearing aids at the beginning, but now she's really struggling. When we test the patient, there are no changes in thresholds, but we pick up a 10 dB deterioration in her unaided scores.

And then in her aided scores when we use speech-in-noise testing in her Az Bio sentences with her new hearing aids, she scored 82% and now she's scoring 60%. So going back to what we had talked at the very beginning, that speech-in-noise testing, speech perception testing, it's also a way to demonstrate the difficulty patients are reporting. So this is a way to, to say to the patient, yes, you're not making it up. I can measure that your performance has gone down 22%. And as a clinician, I need to think of, first of all, I need to identify what could be the possible reason. Is it, does my patient have a new diagnosis? Has my patient had the communication opportunity, intentional communication opportunity in the last year?

Has anything changed there? Should I consider maybe changing the prescription formula? Something, you know, something is going on that my patient's performance went down 20%. So after we reprogrammed the hearing aids, reassessed the whole situation, we retest the patient, a couple of weeks later at a follow up and she scored 72%. So we are getting better, but we're not kind of where we were a year ago. So this

is just to demonstrate how useful these tools can be to capture what your patients are reporting, to identify the possible causes and to come up with the plan to address those issues because we want to make sure that they are always performing at good levels that allow them to communicate effectively.

So I love this quote, outcome measurement tools are crucial for assessing the validity of hearing rehabilitation services. So now we're moving on with validated hearing aid outcomes. We know how to monitor those outcomes over time. And now we are at another, we are at the next level. So we can provide cochlear implant screening. So we can screen patients for candidacy and audiologists and hearing aid dispensers can do that or we can choose to continue on and conduct a cochlear implant assessment with our patients. And that will fall. And that would be something that audiologists can do. This is within the scope of practice. Just remember that if you are validating your hearing aid fittings, you are already conducting speech perception testing.

If you want to provide cochlear implant evaluations to your patients and then refer them to a cochlear implant team with the full evaluation, you can do that as anything else. If you are planning to add, I don't know, tinnitus services or a tinnitus clinic in your practice, what would you do? You will probably go to the next tinnitus conference. You will take some classes, some webinars on tinnitus assessment. You might sign up for a certification. You will join the Tinnitus Association, the American Tinnitus Association. So it's exactly the same thing. Cochlear implant evaluations are within the scope of practice. The standard of practice for audiologists says that we need to monitor outcomes and provide improvements in care based on those results.

So just a reminder that everybody here who's an audiologist, this is within the scope of practice. You just need to catch up on anything that anything new in this field. But if you are monitoring your patients using outcome validations, using objective outcome measures, you are already doing half of the job. So when it comes to cochlear implant

screening tools and referral pathways, last year there was a study published that looked into the different screening tools that have been published in the last few years. And they concluded that the screening tool proposed by Dr. Zwolan and her colleagues demonstrated the best overall performance for traditional cochlear implant candidates. So this is the tool that we are going to discuss today.

This is the 60/60 referral guidelines, and, these guidelines help us to refer adults for a traditional cochlear implant candidacy assessment. Traditional criteria refers to patients with bilateral moderate to profound sensory neural hearing loss. These guidelines exclude those patients with asymmetrical hearing losses, single-sided deafness or those who will receive a cochlear implant and that are considered off label. So patients should be referred if the best ear unaided monosyllabic word scores are less or equal to 60%, are less or equal to 60% correct. And if they have an unaided pure tone average in their better ear of 60 dBHL or greater. Now for those of us that were in the first webinar of this series, Dr. Don shared that there is gonna be a revision published on these guidelines and they're looking to change from a best ear unaided monosyllabic word scores to in the poor ear unaided monosyllabic word score.

So keep an eye, 'cause that should be coming out soon. And during the development of these tools, scientists found that 95% of patients who met traditional indications for a cochlear implant had a pure tone average of greater than or equal than 60 dB and 92% had a better ear unaided monosyllabic word scores that were less than or equal to 60%. Okay, so as we said at the beginning of this section, audiologists and hearing a dispensers can use cochlear implant screening tools to identify those patients that you can refer to cochlear implant teams for an assessment. But for those of you that are audiologists, you can conduct the cochlear implant assessment in your private practice. So you need a sound booth with a speaker, you need your audiometer with the CD player, you need to get the minimal minimum speech test battery CD and the scoring sheets, you can get that for free from the hearing, oh my god, from the

cochlear implant manufacturers, you need a sound level meter for calibration and you need a calculator.

This is the minimum speech test battery that we talked about before. You need to pay close attention to the calibration and what's the input in the dial and what's coming out of the speaker inside the booth. You need to make sure you're meeting, you are familiar, not only familiar, but you know well the protocol. So you know that the test has to be presented at 60 dBA, and 60 dBA inside the booth might be different than the dBHL stated in in the dial of your audiometer. You need to make sure that in quiet you present the signal at 60 dBA and in noise you have three different ranges, five SNR 10 dB SNR, and zero dB SNR. And to decide what to do, I want to refer you to the minimum reporting standards for adult adult cochlear implantation.

What they say is these are the conditions that you want to test. You can test more conditions, but these are the least you have to complete in the pre-surgical assessment section. So you'll do left ear, right ear, both ears, and you are gonna do CNC word lists, in quiet, Az Bio sentences in quiet and in noise, and you want to make sure the speech and the noise are coming from the front. And that's exactly what you will do post-cochlear implant assessment. So post, once the patient has been implanted, you're gonna test the implanted ear, the contralateral ear, both ears, and you're gonna apply the same protocol. So I really recommend that you become familiar with this publication.

So this is a patient that we saw recently. This is a patient who is 28 years old. She's an experienced hearing aid user. He came, we saw her first three years, a little bit over three years ago. She was a new patient to us, but she's been wearing hearing aids since early childhood. And she came for a hearing aid upgrade. At that point, her word recognition scores were 55 in one ear, in the right ear, 45 in the left ear. So as soon as I saw her previous audiograms, I thought this is a potential cochlear implant candidate.

So we tested the patient with the hearing aids done, she walked into our clinic with, and she scored 55% with the old hearing aids in quiet and 45% in noise.

Then we switched to new hearing aids and she scored 86% in quiet, 71% in noise. At her three month follow up, she scored 74%. And at her six month follow up with speech-in-noise program, she scored 82%. And she has stayed in around low 80% in background noise with her current hearing aids. This patient is a potential cochlear implant candidate. She's not keen at this point, because she sees that I'm doing really well. Plus the last three years she's been quite sheltered as far as work commitments because of the pandemic she's considering taking a Roger device. But this is a patient that we will continue to monitor because changes in her hearing, changes in her performance will make her a cochlear implant candidate.

This is a video, I'm not gonna play the video, but for those of you that are not familiar with the Az Bio sentences, this is just one screenshot of one of the word lists, and, basically you're gonna present the sentences and the patient has to repeat as many words as they can. If they repeat the full sentence, great, but if they repeat, if they only catch one word or two words, you still want them to repeat them back because the score is based on how many words they get correctly. This is a screenshot of the CNC word list test. And same thing, we have a video here, the patient is facing the speaker, the patient has hearing aids on, and you are gonna score these tests based on how many phonemes the patient gets correctly, but also how many words the patient gets correctly.

As the cochlear implant candidacy criteria evolves and continues to change. There is some, I don't wanna say push, but there is some consensus that CNC's might be a better tool to establish candidacy than sentences, and CNC's are used right now for, to establish candidacy in patients that have very good low frequency, low frequency hearing thresholds. And that could qualify for EAS. So just things to keep in mind that,

you know, protocols continue to evolve. This is something that you have to keep up with, but this is, these are just good examples of the current speech perception testing that we are using right now. This is just a quick way to report the results. I use this to capture what my patients are doing over time, and I use this for counseling, but also it's a good way to keep monitor that their performance stays over time.

Because remember, we could implant one year today, but that doesn't mean that the other ear is gonna continue to do well. That patient might become a bilateral cochlear implant user down the line. So we just have to continue this provision of care over time and continue to monitor outcomes as time goes by. For those of you that are audiologists joining us today, you can bill for this. The American Medical Association has a code, a CPT code, which is 92626, and that stands for evaluation of auditory function for surgically implanted devices candidacy and post-surgery. So there is a code, so you can bill for this, for those of you that, I practice in Illinois, and we can use evaluation management codes.

So if I'm conducting a cochlear implant assessment, I will bill a CPT code 92626, plus an evaluation management code. So this is something you can bill for. These are just some screenshots of the current candidacy. I just wanted to highlight that everything is based on best aided condition, but it's a little bit in the air what we mean by best, is it bilateral? Is it best aided condition of one ear? So that's where your clinical judgment comes into consideration. Just remember that the FDA regulates manufacturers, but we use clinical judgment to identify those patients. And then, you know, of course we have to consider insurance guidelines and so on as well. If you are planning to conduct cochlear implant assessments in your practice, you know, this is a good time to do it because we have guide guidelines and now the Medicare criteria is finally catching up with everything else.

And now patients who have a moderate, bilateral moderate to profound sensory neuro hearing loss who receive poor benefit from hearing aids and that poor benefit is estimated to be 60% or less in recorded tests, in recorded tests that are open set sentences that are used in open set sentences. We also have the new guidelines for clinical assessment and management of adults with single-sided deafness when it comes to cochlear implantation and clinical practice guidelines, cochlear implants that was put together by the American Academy of Audiology in 2019. So if you click on these active links, it will take you to those guidelines. I wanted to highlight my favorite resources. My favorite resources are the minimum reporting standards for adult cochlear implantation.

So if you are not familiar with this publication, please do read it. It's great because it gives you exactly what you need to do. And there is not, you know, it's not that complex. And as I said, if you are validating hearing aid outcomes, you are already doing some of this work. I love this publication from Dr. Prentice at University of Miami Audiology practices in the pre-evaluation and management of adult cochlear implant candidates. This publication will give you a deep understanding of why sticking to the protocol is so important. You'll understand why a patient goes to this clinic and meets criteria for a cochlear implant and why the same patient goes to another clinic and doesn't meet criteria.

So the study highlights all the different factors that can change and can make a difference whether somebody meets criteria or not. So it will give you a broader understanding of how do use the protocol, how to use the protocol correctly, and then of course, use your clinical judgment. And then I love this book from Dr. Gifford about cochlear implant patient assessment, evaluation of candidacy performance and outcomes. So this is my little cochlear implant bible on my shelf. So let's talk a little bit about referral pathways. So now that you had a hearing aid patient, you've measured the hearing aid outcomes, you've been monitoring those outcomes of their time, you've

found out that this patient, it's a potential cochlear implant candidate either through the screening process or you conducted the cochlear implant assessment in your practice.

And you know this patient is a candidate. So what do we do next? So this guidelines were put together in 2020 by a group of professionals from all over the world. And these are some of the recommendations. Number one, you want to ensure that your patients have an optimal hearing aid fitting. So you wanna make sure that they are walking around with very good programs. You want to make sure that you've discussed with them hearing assistive assistive technology when appropriate, you want to make sure that you understand the criteria for cochlear implant referrals. You have considered, you have discussed with your patient the possibility of a cochlear implant referral long before hearing aids fail. So it's very important that patients understand that this is just part of the continuum of care.

We have options as the condition evolves over time. We have different options. It's not that cochlear implants are the final option. You want to introduce cochlear implants as continuum of care. As we just said, we want to ensure that this conversation starts well before the patient meets criteria. We want to refer and encourage patients to seek additional information about cochlear implantation. So this could be reaching out to support groups, reaching out to cochlear implant users who have become mentors and so on. We want to help patients recognize that at the time of the referral, they are not committing to surgery, they're just going for an assessment. So usually what I would say to my patients is that you, I think you will benefit from a cochlear implant based on my testing results.

I think this is a good option for you, but you need to meet with a cochlear implant surgeon. He needs to assess the medical side of things. And then you are gonna learn so much in the process. And then at the end, we're gonna determine if you are indeed a cochlear implant candidate. And at that point you can say, great, I wanna go ahead

on you. Or you can say, no thank you, I want to wait. So right now you're just exploring the possibility. You're just learning about it. And the reality is that patients learn a lot about their condition when they go through the cochlear implant assessment, especially when you demonstrate during speech perception testing.

How well they do with both ears, how well they do one ear at a time, how well they doing quiet versus in noise. They get shocked at the, you know how their scores change just by adding noise to the test. Remember that patients don't know what they don't hear. I had a patient once, and maybe this is my favorite story, she's now a very successful bilateral cochlear implant user. And when I met her, she had a severe to profound hearing loss, and she said to me, I want new hearing aids. And I looked at her audiogram and I'm like, you know, have you heard about cochlear implants? Would you be interested in learning more? And she's like, yeah, and I don't want surgery.

I just want new hearing aids. And I do just well with them. And I'm like, okay. So I fitted her with new hearing aids in a month. We conducted speech perception testing, and I did Az Bio in quiet. I was studying it with the test in quiet before I even considered moving on to noise. And she scored 17%. So I took my results and I went, you know, around inside the booth to walk her through the results. And I opened the booth and she said to me, I told you I hear really well with them. And that moment I realized, of course you don't know what you don't hear. You don't know what you missed. And when I said to her, well, actually you only heard 17% of what the test was, she was shocked.

This was the beginning of the process, the beginning of the journey. And she eventually, you know, in the next month year, became actually a bilateral cochlear implant user. But this is just a reminder how much patients learn about their own condition during the cochlear implant assessment. The next recommendation is keep the referral pathways simple and clear. So establish those connections with the local

cochlear implant program you are choosing to work with. Maybe add to your template, you know, was this patient, this patient needs to be referred for a cochlear implant assessment or add a section that talks about cochlear implantation and whether you've reviewed that information with your patient, and of course, return to this conversation at regular points as the example I shared with you at the very, I'm sorry, not at the very beginning, but when we were talking about my, the results of the patient that was a potential cochlear implant candidate.

This is something I talk to her every six months or every year when I see her, because she needs to be reminded that cochlear implants are on the table. And we're coming towards the end of our webinar. And I just wanna highlight that the patient experience, patients, I love this quote from Thomas Lee at Press Ganey Associates, "Patients care about how services are provided, rather than what services are provided." Why? Because patients don't know that , you're using best practices. They're not audiologists. We know these, these professional uses best practices in their practice, but patients don't know that. Patients only, their experience is based on how those services are provided. And that experience is based on trust, coordination of care and compassion.

And trust for me maybe is at the top of the list because we work really hard on earning their trust. That having their trust is a big responsibility. The these patients are making decisions based on the recommendations we give. These patients are deciding to explore these options based on the recommendations we make. And we need to make recommendations based on measuring outcomes. At the end of the day, what matters is, are our patients benefiting from the treatment recommendations we make. And then of course patients wanna know that, you know, care is coordinated, people seem to know what's going on with my case. And of course they experience compassion when they are at our practices. So just a quick summary for patients.

When we measure outcomes and validate outcomes, we are practicing, we are providing true patient-centered services, because we are adjusting our recommendations based on the specific results my patient is experiencing. We are concentrating on outcomes and satisfaction and we are enhancing the patient's experience because it is patient centered. For the clinician, the benefits, you have an objective measure to support your clinical decisions and recommendations. You have a monitoring tool that allows you to see, you know, a broader picture of your patient over time. And you have a great counseling tool. For the practice, if you are considering incorporating cochlear implant services, you have a new revenue channel you can bill for these services. It's a differentiator tool among other practices maybe in nearby where you are located.

And again, it enhances the patient's experience. When the patient has a good experience, your practice is going to grow because your patient has a condition that does not get better. So every time I see a new patient, I hope that I'm providing them with such great care that the only reason they will leave is because they either move out of the city, out of the state or maybe passed away. But other than that, they have a provider that provides them with services that evolve with them over time. And somebody that is keeping an eye that their performance stays at. You know, good levels that allow them to communicate effectively, you know, in the different settings where they are every day.

I wanna leave you with this quote from one of our dear colleagues in audiology. "Contemporary hearing rehabilitation of adults with acquired hearing loss is patient-centered and outcome driven." So with that, I wanna say thank you very much to everybody that join us today. I think we have a couple of minutes for some questions.

- We do have a few minutes, Alejandra, thank you for that fantastic presentation that looked at this whole issue in such a comprehensive way. We tend to segment things, but you really brought it all together. So if you have a question, please go ahead and post it in into the chat and we're happy to take a question or two. Now, before we close out, we wanna hear what you have to say. This was such a unique and important presentation about the role of hearing health providers across the continuum. Any questions, any comments? I can say as a longtime cochlear implant user, I benefited from an audiologist who was very similar to you. And she very gently nudged me into the consideration of a CI.

She got me on the course, she gave me her patients to talk to, and there has not been, you know, a talk when I was considering counseling when I haven't recognized her to this day. So I'm so glad that you brought it to the fore and you've made it contemporary and gave people the tools and all of that was just so relevant and important and we all appreciate that so much. It looks like we haven't had any questions come in, so it looks like you have really covered the water for all of us and it was a wow of a presentation. So thank you so much for doing this, and from all of us for contributing to this series.

- Thank you, Donna. Thank you everybody for joining us today and thank you so much to AudiologyOnline for providing the platform. Thank you, everybody.