Adult Assessments in Hearing Healthcare: Working Across the Continuum, in partnership with American Cochlear Implant Alliance

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- Hello, everyone. Thank you so much for joining us today for Adult Assessments in Hearing Healthcare: Working Across the Continuum, in Partnership with the American Cochlear Implant Alliance. This is Donna Sorkin, and I'm executor director of American Cochlear Implant Alliance, and it's my great honor to have with us Camille Dunn and Susan Good, both audiologists, and they will be leading us in this exploration today. We could go next. And this is actually part of a five part series that's beginning today. And of course this one is on adult assessments across the continuum, but we'll be also looking at this topic in four other ways. So we'll be looking at the roles of audiologists and dispensers working with hearing aid users on candidacy for CIs.

We'll be looking at the utility of the new CI quality of life instruments that can be used to personalize and improve CI care. I'll be speaking on adult perceptions of hearing status and options and how professionals can use that information to facilitate a lifelong hearing journey. And lastly, we'll be looking at optimizing outcomes in hearing technology, hearing aids, and implantable devices. Next slide, please. So you may wonder why we have another organization in hearing health and who the ACI Alliance is, and we are a membership organization that's focused entirely on cochlear implants and access to care. And our members are audiologists and physicians, speech pathologists, educators, and others on CI teams as well as consumers and parents and advocates and hearing aid specialists.

And we have a website that's designed for people who both work in and out of cochlear implantation because we're really trying to provide support for everyone that's interested in hearing healthcare. And just like our name implies, we are highly collaborative with other organizations, including AudiologyOnline, who's one of our favorite collaborators. And we welcome your involvement. And I've given you some sites there to go and get more information on, including our website and Facebook and Twitter. And we could go on to the next slide. And we're going to be talking about our mission just a little bit, which is to advance access to the gift of hearing provided by

cochlear implants through research, advocacy, and awareness. And we look in particular at those factors that contribute to underutilization, including knowledge of hearing care providers outside of CI, and one of the topics that we will be exploring today and how we can improve awareness regarding candidacy and outcomes.

So with that, let's move to an introduction of our speakers today on the next slide. And there you can see photos of our speakers, Camille Dunn and Susan Good. Camille is an associate professor and director of the Cochlear Implant Program at the University of Iowa, which was one of the very earliest CI centers in our country. And she's also a member of ASHA, and she's on the board of the American Cochlear Implant Alliance. And she conducts clinical research as well as provides services. And she's the principal investigator on an NIH-funded grant to look at the impact of the intervention on hearing related functions. Susan Good has both an audiology and MBA degree, and she has worked in the field for more than 20 years, both in business and on the clinical side.

And she's an expert on business development and also clinical operations for audiology and physician-based practices. And she's the co-founder of the Network of Medical Audiology Professionals, which is a community for professionals that work both in and outside of ENT. And she is currently in Florida and working with the groups there. So with that, I'm gonna turn the floor over to our two wonderful speakers and thank you again for joining us today. Here are their disclosures.

- All right, well, thank you so much, Donna, for that introduction. And Camille, it's always wonderful to kick off another hour of chatting it up with you about CI. We today are focusing on learning outcomes, as you can see right in front of you, that are related to common challenges around hearing loss in general and looking at the different providers that are involved as we are approaching diagnosis and treatment of hearing loss, particularly related to CI, and different ways that today we're looking to

incorporate cochlear implants as a treatment option along the continuum of care. Our session description as it stands, and as you all saw when you signed up, is really going to focus on the complexity of treatment, what our patients can really benefit from when they have access to CI, and we are also gonna look at the roles that we can play along the way.

And our agenda is set up in four different pieces, which is going to allow us to lay a foundation about hearing loss in healthcare, hearing loss healthcare and aging in general, multidisciplinary approach to treatment, along with incorporating CI into that diagnosis and treatment process. And then have a conversation with Camille specifically about different approaches to incorporating that more practically into our counseling and our diagnostic process. So to get started, we really are thankful to be here, Donna, and we're happy to be kicking off this five part series. And part of what we wanted to do is just make sure we're all on the same page with some of the fundamentals about what hearing loss looks like across the world and the US in general.

And so some of this right out of the gate may feel familiar or should feel familiar to all of us on the call, and it really is just the simplest of statistics, thinking that we are approaching 5 million people with hearing loss worldwide, which is just a staggering number. And even considering, you know, more than 40 million people in the US suffering from a debilitating, you know, and disabling hearing loss, this really is something that we're all focused on so much every day. And adding CI and having the ability to incorporate that much earlier in our process really will expand options for our patients even right out of the gate. And we didn't wanna ignore, even though we are focusing on adults in this series, we didn't wanna ignore that, you know, obviously our kiddos are out there and every day being born with hearing loss and treated with cochlear implants.

So we wanted to just give a nod there. I think that the biggest piece about hearing loss and aging, you know, as audiologists specifically, we see all of the interesting things that happen with patients as they experience hearing loss over a lifetime. And it's easy to forget that the largest predictor of hearing loss is simply age. And as patients age, hearing becomes more of a problem. And in the past, we have really thought of cochlear implants as kind of the end all for the severe to profound patient, and we are really focusing on, particularly in the last year or so, changing that mindset. We also see, because we are audiologists, a lot of the unilateral and a lot of the very, very challenging hearing losses that walk into our clinics.

But just a reminder that as we age, often hearing loss is bilateral, it's often sensory neural, and we do know that there are often changes in the auditory nerve and the brain. So as we step on and into the rehabilitative side, we also know that we continue to see challenges with how we see patients receiving treatment. You know, you would think with this large number of people that have hearing problems in the US that people would be flocking into clinics for treatment, but we also understand that we aren't seeing as many patients as we would like to being treated with hearing aids, and even fewer as a percentage that are younger under that 70-year-old mark.

So how are we doing when it comes specifically to cochlear implants? And with the first multi-channel CI system in 1985, you know, we think, "Wow, with as many people that could have been treated with cochlear implants from over the last 40 years, maybe we should be seeing hundreds of thousands if not in the millions of patients implanted," but we know that that is not the case, and roughly that around 10% of patients who could benefit from cochlear implants actually receive one. And so we're going to get into the why we believe this is, but Camille, this is where you and I really have a lot of conversations around, do we think the numbers are even more staggering? We know the hearing aid stats, you know, don't consider usage versus purchase, you know, so they likely are even more staggering.

This cochlear implant statistics are without consideration of the updated guidelines around candidacy. And maybe you could get us all up to speed in regards to what has changed in regards to candidacy and how those considerations might even have a more profound impact on these statistics that we're looking at here.

- Yeah, it's a great question, and a lot has changed with cochlear implants, especially over probably the last 10 to 15 years. And, you know, when many of us went to school, we learned about cochlear implants, and, you know, like we mentioned earlier, it was thought that it had to be the profound patients to get a cochlear implant and benefit from that. And that certainly could not be further from the truth. Now we're implanting patients with very good low frequency hearing and preserving that residual hearing, and they're combining acoustic and electric hearing on the same ear. We also are implanting patients who have sudden sensory neural hearing loss on one ear. So these patients are able to benefit from a cochlear implant on one ear and have normal hearing on the opposite ear.

But I think one of the most important changes, I think all of these are important, but one of the most recent changes that we had, was actually part of one of the goals of the American Cochlear Implant Alliance. Dr. Terry Zwolan and Dr. Craig Buchman worked really hard to look at our CMS or our Medicare guidelines, and we realized that we were missing a lot of patients in this critical age period who had hearing loss that didn't qualify for coverage from Medicare. And at that time, it was connected speech up to 40% on the ear to be implanted or in the best aided condition. And now with some research that the American Cochlear Implant Alliance headed up, that's been changed to 60%.

So a lot of patients that would leave our office sad and upset and kind of without hope of the acceptance of better hearing because they didn't qualify for coverage for their

cochlear implants. They were absolutely a candidate, but they didn't have coverage because they didn't meet the qualifications. And so I think with these new guidelines, what we have thought of as, you know, maybe only 10% of these people who had implants who qualified for them is now even bigger and more staggering because even more patients, you know, with the expanded indications can benefit from implants. So I think that number is even more staggering.

- Yeah, and we kind of go, why are we missing the mark, right? Like, why do we have such a staggering difference between like the people that we could help and the people that we are actually helping? And we put it into three different categories. We put it into, you know, this lack of hearing health knowledge by the patient or the consumer in general, then we added a category of the lack of understanding of maybe comorbidity implications by the medical community, so kind of what are the physicians and all of the people that could possibly be seeing our patients, what do they know and understand about hearing loss? And then just the complexities about care delivery and the things that providers experience and have to deal with every day.

And it's kind of like this three part package. And so we all know if you've been a patient with any type of struggle, where you have to manage something over time, it is hard to be a champion of your own health. And the complexities of our systems make it even harder. And if you add age on top of that, that even makes it even more difficult. So there is often a lack of knowledge about hearing health, which can have really negative consequences for patients' overall health, right, and the quality of health. We always know that there are these barriers for patients that need to overcome steps to rehabilitation. They don't recognize the signs. They're ignoring them, or they make them feel not smart, or they make them feel old, or, you know, they have misconceptions about how much something might cost, or they're worried their insurance, you know, won't take care of it, or they're managing other things that they judge as more important than, you know, what they're experiencing right now.

Or, you know, they've heard something, or even a physician or somebody has told them that they're having issues, but because of their hearing loss, they have these miscommunications. And I think Camille, all of the barriers that patients have in general with taking steps to rehabilitation, you know, the barriers for surgical rehabilitation I think are even more difficult. You know, you have even more things to manage with counseling, et cetera. So what do you think are the largest challenges with getting patients to understand these things and move forward with a cochlear implant?

- Yeah, I think that's a really good question because, you know, certainly I think, you know, as you discussed our three-pronged approach, I think patients, when they get to the point of a cochlear implant and their audiologists or their hearing professional that they're working with talks to them about an implant, sometimes it's kind of shocking, right? It comes up and it seems like this next step is gonna be a surgical procedure, and so it becomes shocking, it seems. When you talk about surgery, that seems pretty invasive. But I think one of the challenges is bringing the conversation about cochlear implants up earlier, and so when they get to that point, they're prepared for it, they're ready for it, and they have a better understanding of it.

They've had time to process it. I know a lot of times when patients get to our clinics, they come because their spouse or their children or somebody has pushed them to the point that they get into our office. And usually by the time they leave, they have a better understanding about the device. They have a better understanding about insurance coverage, the cost of this technology. And so I think for me, I think it's lack of information, lack of information early so that they can process the sound. And I think the final part is having an understanding of the effects that hearing loss has on other parts of their life. You know, one of the biggest things right now that's going on is the connection and the understanding of hearing loss and its connection to dementia and other Alzheimer's type diseases.

And I think the second you bring that up and explain to the patient the connection or the possible connection between these two, and you say it's social isolation, it's listening effort, and parts of your brain that once processed sound, or once processed cognitive information, is now being reallocated to listening effort, and so the areas of cognition are getting lazy because they're not being used the same way, patients seem to be able to relate to that. They understand. And so I think those are areas that we really need to beef up and start talking to our patients about earlier.

- Yeah, and all of it takes, you know, a patient getting into somebody. So even when they seek help, right, they get in front of somebody in the medical community, and often it's not audiology or somebody that is even familiar with hearing, they don't always get the information they need, which kind of brings us to our next point, right? Another way we're kind of missing that mark with underutilization is just that the knowledge within our medical communities isn't there, or isn't the same across all of the providers, you know? And that is, I think, for a few different reasons. You know, the CDC does a nice job at defining chronic disease, right? It's that condition that lasts more than, you know, a year.

It requires ongoing medical intention or attention. There's management of daily living, you know, all of the things that we all know, and it's all of the diseases that we can all think of when it comes to comorbidity, heart disease, cancer, diabetes, all of those aspects. But I think the even bigger challenge today is that, you know, CMS, or the Centers of Medicare and Medicaid Services, right, within HHS, that administrate all of these health insurance programs, they recognize 21 big chronic diseases. And that's where they focus their tracking, and those are the diseases they present. And when we look at this list as audiologists, we go, "Wow, there are so many associated comorbidities that are hearing loss or dizziness or tinnitus related," right?

Like, something there that if a physician is seeing a patient or a mid-level provider, they should be thinking about the patient's hearing. But because hearing loss is a condition, a physical condition, and not recognized and doesn't get kind of the playtime, you know, it's not top of mind often for providers. So unfortunately it doesn't drive that focus for the medical community, and those comorbid implications are just not as high up in their mind. So yes, we are doing better at, you know, publishing these studies that you were just mentioning, and we do have a lot of catching up to do when it comes to educating the medical community about the implications surrounding chronic disease and the comorbidity of hearing loss in and of itself.

And I give big kudos to, you know, Frank Lin, who, you know, kind of kicked us off, I feel like, you know, 10 years ago or so, and everyone else who has followed, you know, kind of behind him who has really done such beautiful job at starting to associate cognitive decline, Alzheimer's, clinical depression, diabetes, falls in the elderly, right? Ischemic heart disease, depression. There's so much that is now out there and available that the medical community is starting to catch up. But there's obviously still some type of a lag because we're not seeing patients with any of these things, you know, running to our doors. I think we're still seeing awareness rise, but we still have these big lags between patients that are experiencing and managing these types of diseases and conditions, and their thoughtfulness of like, "Hey, I should maybe have an annual hearing test," or, "I should have my hearing tested at least to know where it is to be managing it over time, you know, more consistently.

" And so for me, I think of you sitting in front of patients every day, and you even have already mentioned it, you know, you have, I mean, even as recently as December, have that publication that just came out, I think it was JAMA Neurology, where they're saying, "Hey, the use of hearing aids and cochlear implants for patients with hearing loss, right? It is like, you know, we are seeing, you know, improvement, we're seeing not only reduction, right? Or, you know, we're reducing long-term cognitive decline, but

we're actually seeing improvement I think in cognitive test scores." So, I mean, that's a big deal, and that has got to be pretty powerful when you are sitting in front of a patient and having conversations. It's not just that, "Hey, we feel that this is what you will experience," I mean, you're really being able to connect these dots for patients.

- Well, and I think too, you know, yesterday I went for an annual physical with my internal medicine doctor, and, you know, we've got to bring up the narrative in those appointments about hearing loss. You know, they ask you, "Are you having shortness of breath? Have you fallen in the last X, Y, or Z unexpectedly? Have you had weight gain or weight loss? Do you have pain? You know, how is your vision?" But they never ask about, "Do you have hearing loss? Do you have problems understanding people," you know? And so we have got to get the narrative because that adds importance. So when they're asking you about all these things, it's important, right? Like, if you are falling, we probably need to have a better understanding what that may be caused by. If you have, you know, dizziness or whatever it is, that makes you believe that that's an important question they're asking. When I met my internal-

- And even thinking of untreated hearing loss and the impact on cognitive decline and depression, and you'd mentioned social isolation, I mean, it's such a positive impact on those things if patients treat. And, yeah, without primary or internal medicine having those conversations, it just delays patients taking action even more.

- Yeah, and you're right. I mean, having the CDC recognize hearing loss as a chronic medical condition is really important. And I think that's the way we need to start treating it. And unfortunately, I think hearing loss has a stigma associated with aging, and, you know, nobody, you know, puts their glasses in the top drawer of their dresser and doesn't wear them. People do that with their hearing aids. And I think, you know, there's lots of reason that's behind that, but I think education needs to be at the top of

our priority from a lot of different perspectives in a lot of different medical fields to help us gain traction on the benefits of implants and getting more people better audibility.

- Yes. Well, and the last piece, and I'm like, where is this bridge? And we have to kind of recognize as providers, we all face common challenges caring for older adults with hearing loss, right? We manage what is so often referred to, and still referred to, as like the invisible disability, right? You can't tell somebody has a hearing loss by looking at them so often. It's not like they have a broken leg or some other like physically debilitating condition that you're like, "Oh, hearing loss" And I recognize it so often just because my father is a unilaterally deaf individual since I was born. And you just see how difficult it is for him to manage and the way people treat him, just 'cause they can't tell that he's not being aloof, right?

And that he just doesn't have hearing on that side, right? But we also have a lot of other things that make it difficult for us to help bridge the gap, right? Our patients are reluctant to take action. They don't understand, you know, their own diseases, or they put, you know, their diabetes, or trying to manage their insulin management, and they put that as a priority over taking care of their hearing, right? There's so many of those types of incidents that take place that make it hard for all of us. There's complexity in how to get into a care and treatment plan, you know, where should we go? And, you know, I think one of the harder things today, particularly with learning all of the new things that are going on with cochlear implants, I think about it for myself, like, I don't think of myself as a cochlear implant audiologist, right?

I'm not in a big center. I'm not, you know, doing programming, But I've learned a lot in the last year and have needed to reach out and find different places for resources, so I think one of the most important things on here is that training and resources for just general audiology, you know, particularly coming out of school, and it's been 10 years or 15 years, where do we go or where can we go to make sure that we're getting the

right things? And I think you have some great examples of places that we can go beyond just this great series that, you know, has been set up for us, you know, to help providers stay up to date on things like all of the counseling items that they might need to help their patients.

- Well, and I would say that the first place they should go is the American Cochlear Implant Alliance, and it's truly a wealth of resource. That website has information about cochlear implants implanting centers, it has information about implants, it has ways that you can reach out and talk with other cochlear implant or other people with hearing loss. It has different, I mean, just a ton of information to help navigate through the process with cochlear implants. So absolutely, I would say the first stopping point should be the American Cochlear Implant Alliance website. But there are other resources, and some, you know, we need to get better at. I think referring audiologists, that's one of the areas we need to bump up our training.

You know, as I mentioned before, candidacy has changed dramatically. The expansion of cochlear implants has changed. And I just don't think that there's any way, if you're immersed in your diagnostic cochlear implant world, your vestibular cochlear, or vestibular, your diagnostic hearing world or your vestibular hearing world, no matter what the area is that may not be directly related to implants, it's hard to stay up on those other areas. And it's understandable, but it is so important to have resources at your fingertips so when you recognize a patient should be referred on, or a patient should be evaluated, that you know how to do that and you have some key talking points to help them bridge that gap or bridge that next step for that patient.

- Yeah, it really is. I mean, there really are a lot of common challenges that we all face, and there are a lot of resources that we can utilize with all of our national organizations, but you're right. Like, even your referring providers in that local network is such a great place. I think also just recognizing that those places also can help, you know, us bridge

gaps with like, you know, affordability of treatment. Like, that wasn't necessarily something I'm like, "How much do cochlear implants cost today," you know, versus like, I mean, is it the same as when I was in school 20 years ago? You know, you're looking for updated information, and that stuff is moving so quickly too.

And I think that that's another reason why it is so important to just have a quick way to like be able to grab information and kind of reduce the complexity of that care delivery from a provider perspective. We don't have a lot of time, you're busy seeing patients, what can we do to help each other?

- And it's intimidating, right, you know? I don't wanna talk about something that I'm not all that familiar talking about. And, you know, having my patient that I've cared for with hearing loss think that I don't know something about something, you know? Or give them the wrong information, or refer 'em on for an evaluation for an implant and the patient isn't a candidate. Oh, that's gonna be so embarrassing. But it's actually quite the opposite, where you know what? You should pat yourself on the back for referring that patient for a cochlear implant evaluation early, and then they can be tracked, and that patient will then become a candidate for an implant and will be caught early enough before they have to go on for several years when they could be hearing much, much better.

- Right, absolutely. Well, and that is I also think why you don't see from a multidisciplinary standpoint, you know, providers that may even know that they should be talking about hearing loss diving in, right? Because truly successful identification, recommendations, and treatment for hearing loss happens best through a collaboration of larger provider group, right? I mean, we need to see that huge multidisciplinary approach. The entire continuum doesn't start when a patient walks into an audiology office. You know, it honestly doesn't start even when maybe somebody's 65 or 70. It should start much earlier in their lifetime. It might start, maybe their first hearing test

was when they were in first grade or kindergarten, right? I mean, that huge continuum of care, if you're thinking about all of the people that truly contribute to driving awareness for patients.

And so when I think knowing the prevalence of hearing loss, understanding the large list of chronic disease, and those in which have, you know, hearing loss, you know, all those that we talked about that have hearing loss as a comorbidity, the list of professionals that could be part of a patient's journey is, I mean, much broader than the slide that everybody is looking at right now in front of them. But from your experience, who do you see, you know, most often, and maybe you could speak specifically of those providers that you typically work with on the team for CI, but I think it's great to talk a little bit about like the providers that refer in and the ones, the greater network, before we dive in on the next slide to like that tighter network of people once you get into that more tighter assessment.

- Yeah, and so certainly I think a lot of this, the referral is gonna be different if you have a child versus an adult. And the trajectory for cochlear implantation or for referral may look a little bit different. But, you know, in speaking directly with an adult population, you know, I think psychologists, I think they're right at the top of a patient is coming to them and they may have some memory issues. I think one of the first questions they need to ask is, how is your hearing? Do you notice a hearing loss? Do you have a change in hearing loss? A cardiologist, how blood flow can seriously affect your hearing. And so that should be a question that they're asking.

Again, yesterday I went to my internal medicine doctor, not even a question was brought up about hearing loss, but you know what? On the wall in their office is an eye chart, and so where is the hearing loss chart? And so I think all of these people can be involved in our journey in helping make patients more aware of the risks that are associated with their hearing loss. Certainly the tighter group that we get the biggest

referral from are those that are familiar. Outside audiologists, otolaryngologists, a radiologist. You know, they're the ones that were involved. That's one of the next stops after a patient is deemed a candidate is they go get imaging so they can understand more the relationship between a cochlear implant.

The speech pathologist, we need to involve them. They're gonna be involved in the rehab journey after, and possibly before, as they were working with their hearing aids. They should be seen with a pathologist and helping them-

- Yeah, and I was surprised to see the genetic counselors on the list.

- Genetic counselors, I think that topic is becoming so, so critical.

- Like, I think of it for pediatric, right? Like I'm like, "Oh, pediatric. I think that referral would be something." But for adults, it didn't cross my mind as quickly.

- Yeah, and I think that with pediatrics, I think we want to understand the progression of hearing loss, and we can sometimes get that, but for adults, the first thing they wanna know is, "How is this gonna affect my children, my children's children?" And so getting them some genetic information is so important. But we're learning so much more about genetic causes of hearing loss, which may be progressive over years of loss, and how cochlear implants will help them. Is it gonna affect them? You know, what's their outcome gonna be like with cochlear implants? I don't think there's any genetic diagnosis that would prevent us from saying you are a cochlear implant candidate, but it will surely help us with counseling and expectations for that patient when it comes and is associated with their outcomes. So genetics is becoming extremely important in the diagnosis and the treatment.

- Completely makes sense. One thing that I think is important today is we're trying to understand kind of where we've been and what is the traditional model versus what we're hoping to see as we move through these next few years with audiology really starting to integrate and even, you know, in front of audiology, starting to integrate cochlear implants into their talk track and audiology expanding and really focusing in like broadening, making sure they're focusing at the top, or practicing at the top of their scope, right? So I wanted to walk through, or have you walk through the two models. Like, first the process that outlines the traditional approach and treatment with CI, like with that traditional team that we just mentioned, right?

Like, what does this look like and how do you see this? And then I'm really interested to understand how you see this changing and what you've been experiencing over the last year, you know, where you've been seeing these changes happen?

- Well, this is a great depiction that Ashley Nassiri came up with. And the mission of her article that is referenced here was she was looking at the patient care model, but this patient care model that she has up here really identifies some of the referral pattern, how we're gonna talk about it today. The solid boxes represent when they're actually at a clinic and they're seeing a patient, or the clinician is seeing a patient. Whereas the dash lines represent an event that needs to occur prior to that next appointment. So for example, the dash line around patient self-identifies with hearing loss. Okay, so maybe the patient identifies that they have a hearing loss, or the patient's spouse, kids, whatever, have identified that, you know, dad just doesn't seem to be hearing as well.

He seems to be missing a lot. He should be evaluated. Maybe we should, you know, go and talk to some type of doctor about that and just see what they think. And then the next step is maybe that doctor says, "Yeah, you know, if you have a hearing loss, you should go get a hearing test." Now, that's a lot of times where it stops, "You should go get a hearing test." They think, "Yeah, I should do that." Two or three years later go

by and they finally, you know, their hearing has progressed, and they make an appointment with an audiologist. "Yes, you probably should have hearing aids." And so they get a referral for a hearing aid trial, and then they use hearing aids.

Maybe they use 'em effectively, maybe they don't. They have their hearing aid fitting and then their hearing aid follow up. So this whole top line can go on for several, several, several years without ever mentioning, and several iterations of hearing aids, right. "Well, let's try a new one. Let's try this one. Hey, this new came out." And, you know, I think audiologists, when they're working with these patients, they feel like their hands are tied. You know, there's, "I don't know what to do." You know, "Oh, here comes Bob. He's gonna come in and complain and say, 'I still can't hear in these environments,' or, 'This still isn't helping me.'" And it's a really tough, that top line is a really tough top line.

The second line is finally when they get referred in for a cochlear implant, you know, "You should go talk to a cochlear implant office about a cochlear implant." And that's the first time often that the word cochlear implant gets brought up. And the patient doesn't have a clue what that is, and so it goes to the back shelf of their mind and it sits there for a while. Then they go back into the hearing aid center and, you know, it kind of goes in circles. And then they finally might have a referral sent over. We call that patient and we talk to 'em and say, "We had a referral for an implant. Is that something you're interested in?"

And typically patients are ready to move forward with an evaluation at that point. Sometimes they'll come back and say, "No, I don't wanna have a surgery." And that's where it stops. And so the fact that surgery is tied with it is oftentimes where the narrative gets stopped. But, you know, this whole process, I think, can become a map of a hearing loss journey, where cochlear implants, hearing aids, rehabilitation, and all of those things that we learn about in our college years gets brought up. And it's a

continuation every time that they're seen by hearing aid follow up. You know, I don't think it would be a bad idea if a hearing aid dispenser had a cochlear implant kit in there.
And when they lay out, "Here's all the choices that we have," you can talk about the timeline with cochlear implants there to introduce them to the idea.

- Right, well, when you were saying, you know, we see the process changing that like, hey, maybe you'll see the primary care doctor, or whomever the entry point is, having different conversations, right? Maybe it's not just an audiologist, maybe it's a dispenser that's also, you know, doing some level of an initial audiogram, and by the time they get to the audiologist, they're doing more than just, you know, doing assessment for a hearing aid. Maybe they're also considering CI. And then you kind of already mentioned it too, like, you know, I can picture the patients in my head that I've been through iteration over iteration of hearing aid with, knowing that this is the next best thing that they are still going to have the same struggles with.

And I mean, granted, you know, the technology I was using, was, you know, we're talking 20 years ago, right? Or 15 years ago when tech was different than it is today. But still, you know, there was a limit to, even though it's the newest and the latest and greatest, patients still were not going to hear better in noise at a certain point in the '90s or in the early 2000s. And so it just kind of went into that like horrible loop. So I think that there are a lot of different opportunities now at the entry point, at the evaluation, to expand the initial intake at the hearing aid follow up where if, you know, action is unsuccessful, where maybe referral into CI, you know, is faster than it has been in the past, and that ultimately we have an opportunity to modernize, I think even in, I don't know that I circled it, but that I think you are, and I know out of Vanderbilt Jill's working on modernizing the follow up, you know, approach post-implant, even where you have this one month, three month, six month, 12 month. And I know that's even changing in your process.

- Well, and it is, and I think early on, part of helping patients understand this continuum of care is right up front, you know, like we have talked about several times today, introducing them to the idea of implants. So bringing it up, but also explaining the difference in the technology. "Here's what a hearing aid's gonna do. It's gonna amplify the sound. It's going to take the information to your inner ear and use what's in your inner ear that's still functioning appropriately, and it's gonna be amplified and it's gonna go through the natural process for hearing. When it gets to a point that what you have in your inner ear is just not functioning well enough to be able to get that sound to your brain, that's when a cochlear implant comes in, and it's bypassing that area of your brain that's maybe not working very well, and stimulating directly that auditory nerve that really wants to take that information to your brain."

So helping that patient understand what the difference in technology is early on, I think it is important, and it can be doors opening for these patients to understand the process and the trajectory of their hearing loss. I think at every hearing aid follow up, they get their hearing test, they can talk to 'em about, "Okay, here's where your hearing loss is. We need a way to..." An audiogram is just one part of the component for cochlear implant candidacy. And so we now have ways, there's some articles that have come out in the past years, to help an audiologists know when is the best way to refer it. And we're gonna talk here in a second about how we're taking that approach and even modernizing that.

Certainly, this last bar, after they get the cochlear implant and they come back to us, you know, just like they do with their hearing aids, they need to go back to their hearing aid audiologist and it needs to be followed up on. And I think we're looking at some of those points of contact and trying to understand if there are different ways we can minimize patients coming back without influencing the clinical outcomes for this type of technology.

- Sure, well, and I think today, you're also doing a great job at utilizing other audiologists that may be closer to the patient from a local standpoint far more than you had five years ago.

- Yeah, yeah, and there's lots of different ways. You know, I'm in Iowa, and so it's a pretty rural area, and where Iowa City is located is kind of on the very eastern part of Iowa. Well, there's a lot of Iowa, you know, farming is so prevalent, there's so many things that, you know, make hearing loss even more prevalent maybe than some other areas of the country. And to come to Iowa City that many times and have to truck across, you know, four or five hours for a doctor appointment, you know, that's intimidating as well. And so we are looking at ways that we can connect with hearing aid centers and develop ways that we can pair up with them and say, "Hey, you know, here's ways you can help us see these patients."

Also with cochlear implants, there's a lot of marriages between hearing aids. We want patients to continue wearing a hearing aid on the opposite ear and utilize that technology. And so they need to go back to their audiologist that helped them with their hearing aids and continue to be seen. And, you know, there's lots of points and lots of ways that we all can work together better as a team and not so separated like we have been for so many years.

- Yeah, absolutely. And I think, you know, one of the big messages is that it needs to become part of the message from the very beginning to patients. It doesn't mean that we skip hearing aids by any means, but it helps patients kind of get their heads wrapped around the fact that there are a lot of different ways that treatment, you know, can be successful, and that cochlear implants from a provider perspective is no longer just kind of the end of the road scenario for patients and-

- It's the next step in the solution.

- Right, and let's not set patients up for, you know, we wanna set them up for success and not for that fear-based, like, "Well, this is all I can do, it's time for surgery," right? Like, it just makes the conversation so much easier if we're introducing the concept at the initial diagnosis. So, you know, as an audiologist that isn't doing, you know, as I said, I'm not in a big implant center, et cetera, like, you know, how do I know that my patient, how do I know I should be considering it? Or that, you know, could they be a candidate, you know? So can I screen for it? Or do I have to do a huge assessment in my practice?

So I thought this would be a nice time for you to just kind of give a high level of like, "Hey, here's the 60/60 guideline and how audiology and even dispensing could use this to help them not only understand what might be possible for their patient, but also help give them a little bit of, you know, a way to have a conversation with their patients.

- Yeah, and this has been really kind of, I think, a game changer for referrals. So my wonderful colleague Terry Zwolan developed and looked at what we call the 60/60. And I think it's nice because just like with blood pressure, just like with your eyes, we all have a number in our head that we associate with something, like, oh, what is it? Oh, I don't even know. 80 over 120 is your blood pressure. Your blood sugar should be under this. Your, you know, whatever it is, we have this number. And so what she did was she took your unaided pure tone average in the ear, the better ear, and she took your unaided word score. So maybe it's your CID, maybe it's, you know, whatever word score that they used.

And she said, if your pure tone average at 5, 1, 2, and 4 is poorer than 60, so at a higher number than 60, greater to or equal, and if that word score that you collect on that patient is greater to or poorer, then they should be referred for a cochlear implant

evaluation. So it's 60/60. And the way she described it in her paper was in the best aided condition. So if you are giving them a word recognition score, unaided word recognition in both of their ears, it's always been assumed that both of the ears is the best aided condition. And so they used that score on probably the better ear and used the 60 on the better ear. And that's probably not the ear we're going to implant.

And so the revision to this wonderful kind of guideline that has set up is being transformed or modernized to say in the poor ear, if at 5, 1, and 2 they are 60 decibels are poorer, or word scores is 60% or poorer in that poor ear, they should be referred. When this came out years ago in 2020, we didn't have single-sided deafness as an FDA approval, and so I think modernizing or switching our thinking to not the better ear, but the poorer ear, which is the ear we would likely implant, is how we should go. And there's some new guidelines gonna be coming out. We have a minimum speech test battery that's being revised right now. That's a battery of tests that is recommended for adult cochlear implant candidacy and follow up.

But we're also gonna have a referral portion in that to help audiologists who may be referring for cochlear implants to know exactly what to do and how to refer and when is most appropriate. So there's gonna be some new guidelines coming out to kind of try to help push that along and bring more awareness and an understanding of that referral process.

- Right, well, that's, I mean, I feel like it was a great step, particularly just for audiology that doesn't necessarily think of themselves as, you know, cochlear implant audiologists, because it really does allow us to very easily incorporate CI into our initial assessment, right? And, you know, last year in one of our podcasts on this, we went through this whole kind of thing, and I said, "Camille, ultimately, like when should a patient be referred for a CI? Like, throwing everything away, like from a simplest thing." And I think the one thing that you said to me that made such great sense is you said,

"You know what? When a patient has moderate to profound hearing loss in at least one ear, and the provider feels like a CI might be a more successful option," you were like, "because providers know their patients, they have the big point of view of the entire holistic point of view of that patient.

It's time to consider a referral in for a CI assessment." And from the simplest point of view. And it was, I thought, some of the best advice that you gave last year. And so I wanted to just raise that up for the audience today because I think it's just the easiest way to think about everything that we have talked about so far.

- And speaking of that, just to kind of highlight, you and I, the reason we got connected in the first place, is we did a podcast series last fall, and it was really successful. And I think it was what, 19 or 20 different podcasts where we talked to different people in the world that are experienced or have expertise in cochlear implants from lots of different perspectives. Donna Sorkin was one of our people that we interviewed. You know, she has a wealth of knowledge, and her experience with cochlear implants and her hearing history is just such a lovely story. And she came on and talked about that. And some other people in the field were also on and visited. And then we had each of the manufacturer representatives come on and talk about that. And so if anybody's interested in more information, it's Medical Audiology Professionals, and there's a podcast series that, I think-

- That would be another great place to go to learn.

- Yeah, wanting more information.

- It's Switzerland, it's a very Switzerland kind of a podcast. And it really did help. You know, I think a lot of the feedback we got was this, you know, like, "Hey, I'm sitting in front of patients and now I'm trying to really make sure that I have this broad approach

to the way that I'm talking about treatment. Even though hearing aids are gonna be the way I'm moving forward, I wanna be talking about CI. But if a patient asks me a question about cochlear implants, because I've mentioned it, I don't want to have a trust issue with, or be uncomfortable with, not being able to give them a high level answer." And some of the things that we talked about in that series really helped, and I think these were, you know, some of the questions that we kind of approached and some of the most common questions that patients asked Camille, and I thought as a wrap for today, you might pick one or two and say, "Hey, if I'm sitting in front of a patient that we are just starting to discuss, I've brought it up, we've been through hearing aids, it's been three or four years," where they're just having trouble with understanding or audibility, whatever it is that we're like, 'You know what?

It might be time to start having this conversation with them,'" how as a provider, you know, can I integrate these? And I think we've talked a little bit about how we can learn more ourselves as providers. But maybe is there a question or a way that if a patient's asking about insurance, or how is it different than a hearing aid, and I think you've already answered that one, and is there anything else that you would offer as support right before we wrap?

- Yeah, I think that there is. I mean, I think the first thing, you know, yes, most insurance covers cochlear implants. But then I think the thing that's reassuring from that perspective quickly is that the cochlear implant facility will help you get prior authorization. They will reach out and make sure that your cochlear implant will be covered by your insurance. Part of that is also going and seeing that cochlear implant center, going through an evaluation, because they can tell you, one, are you a candidate for a cochlear implant? And based on your insurance, will you qualify for coverage? And so all of those things will be discussed at that appointment. What can you tell your patient about what's gonna happen at that appointment?

You know, they're gonna have another hearing assessment, they're gonna have their hearing aids checked to make sure they're working properly, we're gonna do some aided testing. All of those things are required, not because we wanna check and see that their audiologists were fitting their hearing aids appropriately, but because insurance requires it. And so some of those things, you know, can help that patient understand we're gonna counsel them and talk to 'em and show 'em information about the cochlear implant, but if there are resources that you would like in your office to have available for a patient for a cochlear implant, definitely go to the American Cochlear Implant Alliance. There are resources on there that you can download, print out, and have available to you to give to your patient.

- That's great advice. And I thank you, Camille, and it's always a pleasure to be able to present with you, and it's been a blast this past year, really just being able to do these types of things.

- Yes, love it so much, thank you.

- Hi, we have some great questions that are pending for the two of you, and I also have a comment that I wanna make if we have time, and that is the thing that my audiologist said to me was, "How about talking to some other cochlear implant recipients? Would that help you?" And that was fantastic advice, and it comes up repeatedly in the surveys that we do of people of things that would've helped them. So I just wanted to add that in. Okay, here's a question for you all. "For single-sided deafness, is hearing loss at that ear greater than 10 years still a contraindication for cochlear implantation?"

- You know, that's a really great question. And, you know, I think your audiologist will talk to you about that when you go and have an evaluation. But I would say not necessarily. I don't really know where that 10 year number came. I know that that's what the FDA has approval for. The cochlear implant companies that have FDA

approval, they all say 10 years or less hearing loss on the ear to be implanted. But I don't necessarily believe, and there's research out there that demonstrates that people that have had hearing loss on an ear for more than 10 years, 10 to 15 years, or even up to 20 years, wouldn't not benefit from a cochlear implant, especially if they have had hearing in that other ear. It's a different story if they haven't had sound at all for several years. But if you are single-sided, I don't think that 10 years is a hard fast stop.

- That's great. That's an important response, Camille, thank you. And here's another one that's aimed at Camille. And the person says, "You mentioned twice visiting your internist and that hearing loss never came up during your exam. And did you suggest to that physician that they should consider talking about that in the future?"

- You know what? That's such a good idea, and I could kick myself right now for not mentioning it. I wish I would've done this talk two days ago and you would've said that.

- You're gonna be circling back. You're gonna be circling back.

- I know, I feel like I will. And, you know, it's such a great point, and I appreciate you bringing that up and saying that. And I think if more of us do, then, again, awareness will be, you know, if we keep mentioning it and doing that. And there's lots on the American Cochlear Implant, I know I keep bringing up that organization, but it's truly amazing. And, you know, we have so many endeavors where we're trying to build on that, and why I didn't think about it yesterday, oh, dang it.

- Wow, that's funny. I do agree with the person that made that comment because I think in general, internists are not as familiar, or family doctors or pediatricians, as they should be with hearing loss and with CI, and I never miss the opportunity. Sometimes they get pretty impatient with me .

- That's great.

- But, you know, it's really something we all have to do on a regular basis, whether it's cochlear implants or hearing aids or whatever. You know, it's just, we have to talk the talk when we're in there ourselves. It doesn't look like we have any more questions. We did have a comment from one person that it was a great presentation, and I have to agree, I enjoyed it so much. Thank you, Susan and Camille, for working together on this from both sides of the equation and coming together so beautifully in terms of giving us all advice on how to move the field forward along the continuum. And thanks to all of you for coming on today.

- Thank you.

- Thank you, we appreciate it.