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From Evaluation to Post-Care: Enhancing the Patient Journey in Hearing Aid Fitting

Presenter: Clayton Fisher, M.Cl.Sc

Looks like we are all connected, so let's get started. Welcome everyone. I'd like to express my gratitude to the audience for joining us in such great numbers for this new event organized by academia, the Inventors Project, aimed at scientific dissemination in the audiological and vestibular field. Well, I'm particularly delighted today to welcome Clayton Fisher, clinical audiologist and audiology consultant. Hello Clayton, and thank you very much for being with us today.

You're welcome. Today's seminar is titled from evaluation to post enhancing the patient journey in hearing aid fitting. Please feel free to write down your questions in the space provided on your screen. As always, you will receive a survey at the end of the webinar which I kindly ask you to fill out. This will help us understand the topics you would like us to cover in future academia sessions.

It is important to acknowledge how valuable Clayton has been to invent this. In fact, over the years, Clayton has managed several webinars for academia, providing innovative and smart contributions to the world of hearing aids and fitting in general. He has also authored several articles for audiology online, including his latest piece, the Audibility Index, an indispensable counseling tool for modern hearing clinics. In an insightful interview with audiology online, Clayton delved into the nuances of the eligibility index, a metric that revolutionized the understanding and communication of hearing loss. Clayton okay, over to you.

Wishing everyone a great webinar. Sure. Yes. Thank you all for joining us today.

There we go. So I just like to start off talking a little bit about myself. For those who don't know me or haven't sat in on a webinar before, I have a decade of clinical experience assessing and treating hearing loss. And I've worked in chain clinics, I've worked in hospital systems, and now I have my own private practice with two

locations. So I really like to optimize and help people optimize their clinical workflow, improve efficiency and improve the patient experience.

I like teaching, and as Anna mentioned, you can check out my audiology online articles and webinars that are also up there as well. And I also have a YouTube channel with some videos that particularly center on hearing aid fitting. So please feel free to check that out as well. Okay, so our workshop goals today are to just review the benefits of having a modern, connected clinical setup. So the why we're going to spend a little bit of time on that, and then we're going to spend most of our time talking about how you can modernize your assessment process and improve workflow.

And again, the patient experience. And then we'll also talk about furthering our understanding just on the importance of hearing aid verification, validation and follow up, and how important that is in optimizing client outcomes.

So part one of today, we're going to talk about clinical setup, the intake and assessment process that includes how you set up your clinic for success. We're going to talk specifically about case history forms and need assessment forms and what I include in my test battery. And then we're going to talk about how to counsel clients and make recommendations and how to demonstrate the solutions that you have. Part two is when our imaginary patient is now going ahead with a treatment solution. So we're going to talk about hearing aid verification, validation, and follow up.

Specifically a little bit about how to fit hearing aids, and then a little more on the post fitting follow up and validation, as well as ongoing care.

So if this sounds familiar, it's because about a year ago, I did a workshop on how to connect your equipment, and I talked for an hour on why you might want to do that and sort of, well, how you can do it and how you can do it. And if you want to check

that out, if you haven't seen it, you can check that out on audiology online and follow that link. But today we're going to talk a little bit more about how we give our patients a better and more thorough and inclusive experience. Essentially what we're going to do is we're going to walk through an outline and outline just exactly what this looks like. So kind of take an imaginary patient through the entire process.

Okay, so why is this necessary? Well, in the last talk to get connected talk about a year ago, we did a quick little poll during that webinar, and what we asked was, how are you doing your audiograms? Are you doing them on paper? Are you doing them digitally? Are you using a connected audiometer, like for data transfer?

Are you using a computer? Computer based audiometer. And 67% of the people on our webinar were using some version of a connected audiometer, which means they were using a digital audiogram. And so I was actually pretty impressed with that. But of course, that might be a little bit higher just because of the nature of people who are on the talk.

But still, even if the people who are on the talk, 36% of them were using a standalone audiometer. So I think it was about half who are doing paper audiograms, and then about half were using a standalone audiometer, but they were using their mouse to manually enter the thresholds kind of in real time as they go into the NOAA audiogram module, which is definitely better than doing paper, but in the ideal situation, everyone would be in that top category. So I want to know what you're doing. And so today, instead of just me making assumptions, what we're going to do is do some more polls throughout this session. It's only going to take a moment to do each poll.

It's anonymous. And that way I can gain a better understanding of what you're doing or what you're not doing. And so it'll be educational for me, and it'll also be a great

opportunity to collect some real data from you clinicians, which is always welcome. Maybe that'll come into the next webinar as well. We'll talk about it.

So just before we get into this, let's talk quickly about what do I mean by connected? Well, essentially by that it just means that you're automatically getting your data into NOAA. So whether that be through transferring it over or whether you're using an actual computer based audiometer. What does modern mean in this context? It just means that we're trying to use the current clinical tools that we have available to us, and we're doing so because we want to optimize our clinical workflow and we want to optimize the patient experience.

And along with that, hopefully, comes outcomes. By the way, I realize that there is some irony to a guy talking about being really modern and wearing a shirt and tie that's about 50 or 60 years old, but that's just how I roll. So let's review just a couple slides from the get connected webinar from last year. Okay. Benefits of having a monitored setup on your side.

On the clinical side, it's efficient. It's far faster to press store rather than recording a threshold, either on paper or in a computer, all the calculations that happen are automatic. So whether that be your SII or AI, whether that be your pure tone and average, and obviously you can then do data comparisons over time and much more. It's also more accurate if there's less opportunities to make a mistake if you're hitting store because there can't be a mistake, as opposed to you doing the wrong frequency or the wrong level or the wrong ear by mistake. Of course, it's way more convenient to have a connected setup.

Who wants to waste mental energy recording audio metric data? Not me. Got enough on my mind. The benefits of modern setup on the patient side is that it truly can

revolutionize the patient experience. And I'm hoping that by the end of this talk, you understand that.

So it does make it more inclusive, because, as you'll see in a bit, the patient becomes included in every step of the assessment. It's more transparent because, as you see, they will see what you see in real time, and it's also more professional. Right. It's definitely a lot more impressive to have a new approach, and it builds patient trust. Okay, part one assessment.

Let's get into it. So again, I'm going to walk you through what happens in my clinic, and I look forward to getting your input on that. But first, poll number one. And, Anna, you can prep this and maybe even launch it. What type of office setup do you use, just in terms of the office space?

Is the test room and the fitting room all in one? That's what I use. Or do you start in the test room and then move to the fitting room? Or do you start in the fitting room and move to the test room and back to the fitting room? I've kind of worked in all these situations, so feel free to just tick one of those boxes.

And I'm just kind of curious as to what sort of setup you have.

And as soon as the responses are kind of slowing down a bit, you can just push that through because we got a lot to go over and not a ton of time.

All right, so. Okay, there we go. So I can see the results. Okay, look at that. It looks like almost 50 people are using the same setup that I'm using in the same space.

30% of the people are starting in one room and moving to the other, and then 25%, approximately, are kind of bouncing back and forth. Okay, interesting. I like that. Okay,

so, as I mentioned, this is, well, an older picture, but it's clinical setup that I have in one of my clinics. There's plenty of ways you can do this.

You got to figure out what works for your own space. The setup that I use, the all in one and half of you are doing that, which is really interesting. The benefits of that are that the patients don't have to move around. By the way, I just wanted to mention if you see any typos on here, and I see one already, please just ignore them. I'll try and fix them on the PDF later.

I always do this last minute and I always notice typos. But anyway, obviously it's convenient for the clinician because you got everything you need all in one space. It also works well if you have a small space, as I do. And you know what? It can actually create a more intimate atmosphere when you're in that smaller space and you're not bouncing around.

I actually like it for that reason. And just a practical note, you only need one computer. You don't need to have a computer in both the test and the fitting room. So, yeah, this is just a picture that I took. That's actually my son in the booth.

It was an older picture, but this is from a clinical setup that I was working in. Hopefully your setup doesn't resemble this. There's no computer in sight. This is just a test room. There's no computer there.

We were doing handwritten audiograms. The equipment cannot at least easily connect to noaa. It was almost impossible to do. But at least you can see on the right side, there's a little ipod there. So at least we are using recorded speech.

But this is just not the ideal setup.

The following things I believe are essential for you to be able to provide a modern experience for your patients. First thing is having an.

The second thing is if you do have a separate test room and a fitting room, you need to have a computer in the test room. You just need to have one. Go get a laptop for \$500 or something. You need to have equipment that can connect to NOAA. I mean, there are some workarounds for that, but more or less that's essential.

And you need to have a large patient facing monitor. So, next poll. Do you utilize a patient facing monitor? I'm really curious to see what the answer to this is. And if you want to just launch poll number two.

Yes. All the time. Yes, but only using it sometimes. Note you either don't have a monitor or note you don't see the point.

These poles are great because I can have a sip of water and Anna, just anytime that the responses are kind of slowing down there, you can feel free to push that through.

Okay. 38% of people are using one all the time. Wow. I'm impressed with that. Who knows?

Maybe it's skewed by the type of people who are on this call, but I like to see that 22% of people are using it sometimes. So that's great. So 50% of you actually have a monitor. So we're ahead, but 40% do not have a monitor. You guys need to go out and fix that as soon as you get off this call.

And then 3% don't see the point. Hopefully we can convert you guys after this talk. So you need to go out and get, preferably a big monitor. Okay. And because as you will

see, this kind of, the entire talk revolves around using this monitor for basically everything.

And if we do that, the patient becomes part of the process as opposed to just being acted upon. They're entirely 100% part of it. This does not need. You don't need. It's.

This is not really expensive. Right. So my favorite thing to do is to find old tvs that I like to look of on like a used website, like Craigslist. At least that's what you use in Canada. Here's one for \$150.

That includes the wall mount. All right. So you just have to go and pick it up. Give them \$150. Well worth it.

Next question. What type of office management system do you use? Okay. And you'll see. So there's the answers there.

Weber, cloud based. That would be something like blueprint solutions or council ear. And I'm sure there's a whole bunch more standalone. That means like, it's just something that you download onto your computer. So you have it on one computer, or maybe you have a standalone system that isn't cloud based, but you have it downloaded on multiple computers.

Or maybe you don't use an OMS. I figured everyone used an office management system, but I was recently at a conference and it turns out I was talking to a few people who don't. They do without it and I just don't really know how you do without it. But Anna, you can push that through as soon as the responses are slowing down a bit.

All right, what do we got?

40% are using a cloud based system.

That's good to know. I thought that that might actually be a little bit higher. Another say 38. 40% are using a standalone system on a single computer. Okay, that's great.

So vast majority are using an OMS, especially because a lot of people are using it, 13% on multiple computers. And then, yeah, about 13% are not using an OMS. And hopefully we can convert you on the benefits of that today.

So if you don't have one, go out and get one. I use like a cloud based office management system. I use blueprint solutions. That's kind of what I've always used in every place that I've worked. They also happen to be there.

At least it was started in Canada. But like I said, I know there's a whole bunch. I know council air is big in the US. You can do things like online booking now with these systems that's relatively recent and same with online forms. And we'll talk about that.

But the big reason why I like this particular system, what I use is because there is NOAA integration in both directions. And I know that's true with counsel here as well. So that means that as soon as you create a file in your office management system, it's also created in NOAA. So that saves a whole bunch of time. But it's also linked.

Right. So as soon as you save your audiogram in NOAA, it gets imported back into the office management system automatically. And that includes tip and speech data, too. And this happens in real time, which is just kind of a cool feature. As a clinic owner, I'm not always the one doing the test, but I could honestly be sitting at my couch at home, and as soon as the clinician saves the audiogram, like in my show, for example, I can see it and I can see what that person's hearing is like, which is kind of cool.

So this is related to the office management systems. How do your patients complete their intake forms? Did they do them online before the appointment? Do they do them sort of like online or digitally in the office on a tablet, if you can bounce it to a tablet, which is another cool feature that I have. Or do they do them on paper but you mail them out before the appointment, or do they just do them on paper when you come into the office?

I'm so glad we've decided to do these polls because I really love this stuff. I kind of geek out on it a little bit. All right, so, Anna, feel free to push that through as soon as the responses are kind of slowing down. So what do we got? Okay, so, okay, 27% of people are doing it online before the appointment.

That's actually pretty good, but that's still pretty low. I think that's going to change significantly. And I can't help but just jump right to very end there. So 61% are doing in paper, in office. So probably within the next, like, I don't know, two to five years.

That's just going to totally switch, I would guess, because once you start doing it, like, there's kind of no going back. 15% are doing it on the tablet, in the office, which is cool as needed. And then, yeah, 11% are doing it 1011 percent on. On mailed out. That's.

Okay. Interesting. Very interesting. All right, so in terms of the online forms, like specifically the intake form, although you can send all sorts of different forms, this is a game changer because you send it to the patient's email and they complete it at home before the appointment, and they submit it online, and then you just, it goes right to your office management system and you just quickly process it and then you have the form. So this is huge because it is less work for your admin staff, so they can be doing other more important things.

It also, importantly, it gives us more time with our patients because they're not sitting there in the office trying to do it while you're waiting and so on. And then importantly, and this is a huge thing for me, this is the, you can see the intake form that we're using. All the case history questions are on there. Like, have you had a hearing test before? Have you ever had noise exposure?

Have you ever had. Do you have ringing in your ears? Do you have vertigo? All this stuff? So they either take yes or no, and you can ask about the questions that they say yes to, and you can kind of, you know, disregard or not spend as much time on the ones that they say no to.

So again, it's just giving me more time to get to the patient's actual concerns. So, speaking of the patient's concerns, question, do you conduct a formal needs analysis? That means the patient is sitting there in front of you and you're asking them why you're there. They're there. And do you actually have some way of, like, formally documenting this?

So what type of hearing difficulties they're having? So, yes, all the time. Yes, but only sometimes. No, you don't have the means to do it or the tools to do it. And no, you don't see the point of kind of having that formally written down or taken down somewhere.

And, Anna, feel free to push that through whenever you like. Awesome. Okay. Yes, all the time. So 57%, that's really good to see.

Sometimes 24%. That's also really good to see. No, you don't have the tools. Well, we're 20%, so that's a huge chunk of people. And hopefully you'll see today that you actually do have the tools if you have NOAA.

All right, excellent. Good info. So if you're sitting there and the patient's in front of you, you already have NOAA pulled up because you're going to be doing your whole assessment. If you just go into the questionnaires module, and you're going to say, what? What module is that?

It's probably way over to the right, and you can kind of move it. You can right click and say, arrange module order and kind of move it up more towards your main modules. Basically, NOAA provides you with three of the most popular validation questionnaires right there. They're easily accessible. You can pull them up later, and they can be modified as needed.

And it saves right in NOAA, which is where you're probably doing most of your other stuff as well. So what I like to do is I just choose the cozy because I can write down exactly what they say. And I'm using the cozy to formally establish their hearing difficulties. That's the needs, the air that they want to improve. And so, you know, exactly what I'm talking about is the television.

It's the can't hear, the family, can't hear in social environments. I like to get really specific. I just basically write down exactly what they have told me because we're going to pull that up later, as you will see. And I do think it's really important to rank the needs. Okay.

I don't often rank all of them, although they kind of suggest that on the cozy. But I like to at least choose the top two. If you could fix or improve two of these things, what would be the top two will come to mind right away. And it's really important that you ask that because the responses will often surprise you. You think everyone's going to be, you know, whatever, social situations or something, and then they'll surprise you, and they'll tell you that it's environmental sounds.

And you can see this example here. Great. So do that. Absolutely do that. Okay.

This one, I'm really curious about. How many of you are using video otoscopy right now. Do you use it all the time? Do you use it sometimes? Do you not have the gear to do it, or do you not see the point in doing it?

Yeah, I'm really excited to see this.

And thank you, by the way, for your participation with this. I think it's really helpful for me and then for everyone, really.

All right, let's see what we have. So, yes. Wow. So 30% of people are doing it. That is heartening.

And then at least another about 25% of people have the ability to do it. However. Wow. 45% of people do not have a video otoscope. Anna, tell this to inventors.

Here's your big opportunity. And then basically, there's almost no one who doesn't see the point. So that's really exciting. So let's talk about otoscopy. And at this point in time, otoscopy, to me, is video otoscopy.

In my opinion, if you're going to have a serious audiology clinic these days, you can't really not have one, because not only can you see the TM in full high res color on a big screen, and so can your patient, but nowadays, patients can get their own video otoscope on Amazon for, like, \$40. So, like, if they can have that at home, yeah, you probably want to have it in your office. But in all seriousness, you know, this is how I do otoscopy. Obviously, I've just. Because it's hard to do with a picture.

I've just kind of pasted that eardrum photo on there. But that's a real otoscopy photo. But in my opinion, videotoscopy should be the default. It should be NOAA compatible. You could go out and get a \$40 video otoscope on Amazon and just use it in some way on your computer.

But really, we want to be able to document this and Noah have that on the patient file as part of the full assessment that we're doing and hopefully even have it on your reports, too. And frankly, because still, as we found out, there's, you know, a little less than half of people who aren't doing this at all. It's honestly a still a big differentiator for you versus other clinics. If you're actually doing this, a lot of older folks will say, wow, this is cool. Never seen this before.

A lot of younger people are excited about it as well, but they also probably just expect it at this point. Just a quick note on otoscopy and wax removal. I don't know if you do a lot of wax removal. Holy smokes. We do.

It's kind of a bit of a thing for us, honestly, but it really helps the patient understand what's going on. They see the before, they see the after. So they don't just feel the difference. They see the difference. We send them a copy of their otoscopy.

We email it to them afterwards. You know, just from, like, a clinical audiology perspective, this is, in my opinion, super important to have for documentation on the patient file showing that the eardrum looks normal afterwards, that it's not perforated, that you haven't done anything wrong. Yeah. And again, for having it on reports, like, to me, instead of describing forever, we've just looked in the patient's ear and then we say what it is. Why don't we just show what it is?

Right. In the same way that we do with the audiogram. Right. We don't just describe the puritan audiogram. We show.

It's called an audiogram. We show the graph of it, the picture of it. So I don't have a poll for tympanometry. I wish I'd added it. But anyway, you need to make sure that you're transferring your TMP data if you're not already, because that is so annoying to be writing down or manually entering in somewhere, you can't be doing it.

I know you've got better things to do. I use a couple different tympanometers, but the timpani is great. It's super small. You just drop it on the base station or plug it in to your computer, and then just transfer your data over really easily. And then, importantly, once the data is there and the curves are there, that's when you can show the patient, as I'm doing in this photo, and explain to them, what was that test that you just did?

So you can see that, as we go through this process, really what we're doing is stepping, like, step by step through first the outer ear and now the middle ear. And as you'll see in a bit, we're going to get into the inner ear, and we're just explaining everything as we go on our big monitor. So just a note. It's one thing to have the TMP data kind of transfer it in and then go over the results, but it is even better to have those curves run right as in real time as you're doing it in the patient's ear. So live tympanometry in the same way that you have live video otoscopy.

So I really. This is the best way to do it. This is how I do it most of the time. The inventors clarinet and flute tympanometers both have a live view that allows you to do this. And, of course, if you have a computer based TMP, it's always going to show up right on the computer screen.

And if you have your patient facing monitor, then they're going to see it, too. That's really the way to do it. That's the gold standard. But I do have a question related to middle ear and admittance. Do you use acoustic reflexes?

Yes, all the time? Yes, but only sometimes. Nope, don't have reflexes, don't have the capability, don't have the license, or. Nope, I don't really see the point in them, which is, hey, totally fair. So let's see what we get for this one.

I'm probably going to do the same thing where I have to blast through the rest of the last end of the presentation. Okay, good. 33% of people are using them all the time. I like to see that. 38% are using them sometimes.

Great. So, vast majority of people are actually using them. 22% don't have the capability. And, wow, only 7% of people don't see what the point of that would be. Very cool.

So I always do reflexes because I like to use as many objective measures as I possibly can. What I love about tims as well. And then reflexes that they don't have to, um, press any sort of button. But clinically speaking, reflexes are really important to have in certain, um, differential diagnosis. So, uh, let's just say talk about otosclerosis just as an example, right?

You have a normal tip. You have absent reflexes. Well, you need to have those reflexes to do that. They're also really great for a cross check. Right?

Like, so, for example, if you're getting a normal tip and, and normal reflexes like you see on this shot here, and then you got a conductive hearing loss that's going to make you raise your eyebrows and say, I better check my gear and make sure I don't have something blocking my insert tip or something like that. But they're really fast and easy to run, especially if you're using an automatic screening criteria like I do. Where it's either is there, it's not there. It takes it for you. You don't have to decide.

So if you don't have them, if you're in that third group there, just go out and spend a little bit of extra money on, just get ipsilateral reflex license, you know, at four frequencies. Boom, that's all you need.

I think I know what the answer to this poll is going to be. Do you use otoacoustic emissions? Yes, all of the time. Yes, sometimes. No, you don't have OAE's or no, you don't see the point?

So I'm going to, I mean, I don't know. We'll see what it, we'll see what it says and then I'll see if it lines up with what my prediction is here. I fall into the category where, yes, sometimes I don't use them all the time, but I do find them extremely useful for certain situations.

All right, Anna, what do we got? What do we got on this one? Okay. Yes, all the time. 12% of people.

That's, that's really good. Sometimes. Wow, look at that. 36% of people. So, wow, that's really good.

So what is that, 40, 48%? Almost half of the people have always on this call. I'm impressed. But as predicted, as I predicted, so 45% of people, almost half of the people don't have the capability. I only recently got the capability to do OaE's, and then.

Okay, 7% of people don't see the point. Let's see if we can change some minds here. So, as we just proved, OAE's are greatly underused, and it's probably because clinicians don't understand the. The benefit of them, or it might be that they're sort of expensive or some combination of the two, but, um, like other audiology equipment,

there's a ton of options out there. So you just have to kind of figure out what's right for you and what's right for your clinic.

Inventus, who we're doing this call with, they don't actually make oaes, but I did notice that the path medical system is something that they sell or distribute. You can see this is just from the inventors shop. It's about 4k USD before taxes. I actually really considered this system seriously before I ended up getting the system that I did, which is actually a computer based, and it's, like, NOAA compatible. The one that I was just showing you there, the path medical.

You can transfer data to NOAA, but I like to be able to have it real time on the screen. I paid about twice as much, at least, for it, but I've been really happy with it. It's a diagnostic one from Natus. Anyway, you know what I love about oaes? They really.

It's just. It's like having a bit of a crystal ball. Okay, so if we're just talking about, like, today, we're talking about your standard hearing aid patient coming in for their first hearing test. What I love about it is, I can do the OAEs, and this is the. The DP gram that you see on the top there.

The long story short is, perfect oaes would all be on top of that gray area. And you can see that this patient does not have perfect oaes. So before. And that's what their audiogram turned out to look like. We subsequently fit them with hearing aids, but before they even get in the sound booth, I can say, well, you know, misses so and so.

This is showing that there's definitely some hearing loss and caveat here. That's if the middle ear, like, if all the tips and reflexes are perfect, which they were in this case, this is showing that there's some hearing loss. So let's get you in the booth and figure out just how much that is. So you. There is no behavioral responses needed, which is what I love about them.

You're showing them that there's a hearing loss, and they haven't even had to press a button yet. And OAE is. There's tons of other uses for them, which I think I'll talk about in a minute after the next couple slides.

Right. So pure tone audiometry. I really don't have much to say about it except if you're going to do it, please do it with some sort of computer based system or on a computer and just make it more convenient for yourself. So use the features like auto advance. When you're, when you're saving.

Do the interactives. Gosh. Especially if you're doing a hearing aid fitting, get the interactives. Nowadays, if it's auto events to the next frequency, it's almost easier to do that. And Maestro even has an automated option, which I feel like is a whole other conversation, but so kind of tying into the OAE's a little bit.

I'm curious to know how many people utilize ultra high frequency audiometry. That's the big circumoral headphones. Do you have it? Do you use it all the time? Do you use it sometimes?

Do you not have the ability to do that or do you not see the point in doing that? For me, my answer to this question is, yep, I have it, but I only do it sometimes. I do it sort of on an as needed basis. If someone's got, you know, a big hearing loss on the standard audiogram, I'm probably not going to be doing them. But if their hearing is normal, then I'm definitely going to be doing them.

All right, so let's see what we have for that.

Do you want to push that through, Anna?

Okay. 16% of people are doing them all time. Not surprising. But another 24, 25% of people, quarter people have them and the ability to do them. So that's, that's, that's pretty solid.

So that's what, 30, 40%? But 50% of people. Not surprising here. They don't have the ability to do them. They don't have the license, they don't have the headphones, and 13% of the people don't see the point.

All right, so let's show you what the point is. So I've actually written a whole audiology online article about it. You can click the link or check it out later. Just google it. But can you think of any instances where this would be useful?

I use this all the time when someone's hearing is within the normal limits, but they've got some other complaints. They got ringing in the ears, they've got hyperacusis um, or they have difficulty hearing a noise. And this is an example of, um, someone I just recently tested whose hearing is, like, really, really within the normal range. Like, nicely within the normal range on the standard audiogram. This is what their high frequency show.

Uh, she has ringing in the ears. No surprise there. And then this also ties into the oaes because that's a perfect example to do. OAE is now I have always up to 10,000 hz. But we were definitely seeing, like, not absent responses, but some reductions in our OAE, which is more sensitive than the pure tone test, which really helped validate everything that this patient came in for.

So it's with oaes and with ultra high frequencies, you can find the things that are wrong that are creating these issues. So just quickly talk about speech testing. I'm just curious here. How do you do speech testing? Are you doing it recorded?

And it's already on the lists are on your audiometer, like, embedded in there. Are you doing it recorded but you're using some sort of like an iPad iPod MP3 player? Or do you do a little bit of both or do you use live voice?

Okay, Anna, whenever the responses are slowing down. Let's take a look. So 47% of people are doing it and the lists are on the audiometer. That's amazing. That is the way to do it, right.

Some people are still using ipods or iPads. Some people are using a little bit of both. I sometimes use a little bit of both, but almost always, it's just done on the device itself. But look at this. 47% of people are still using monitored live voice.

That's pretty crazy. That's not surprising at all. But that's really interesting. Okay.

I don't really have much to say about speech testing, except that the standard speech testing, except that recorded is the only way to go. So if you're one of those 47% of people who are using live voice, if you don't have it on your audiometer, then just get it on iPad. Get the list on an iPad. Or you could even do this using a CD, but that's obviously not user friendly. It on an iPad iPod.

But the benefits are obvious. You don't have to speak, you don't have to strain your voice. Or if you're sick, that's gonna be a problem. You don't need to have a quiet room. You don't need to just to score anything.

You just score it on the audiometer. Or in most cases, at least if it's an embedded list, it's obviously more accurate because it's calibrated. You calibrate it and. Yeah, so anyway, that's all I have to say about that. I once helped the hospital system I was working for get transition from, like, cd players and tape players, believe it or not, to iPads.

And of course, no one used the cd player, but to be honest, I don't work there anymore. But now no one uses the ipods either, because people are just. They just get so stuck in their ways, and everyone's still using live voice. And I just think it's. It's such a shame.

There's a few people who use the ipods for certain things. But anyway, too bad. And then speech and noise testing really should be something that we're including. So just make sure you have the QuickSin license on your audiometer. Pay the little bit extra for it if it's on your audiometer or scores automatically.

It's super easy if you happen to have it on CD, whatever. Get the WAV files on your computer, get them on your iPad, and do it that way. Now we're starting to see that there's other easy to administer tests that can predict speech and noise, such as the audible contrast threshold, which a bunch of people have been talking about recently. And then I know inventors is working on adding to their platform. It uses special, like modulation to so not speech, but modulation detection.

So it's not language specific, which is very interesting and exciting because it doesn't matter what language the person speaks, as long as you can explain the results to them, they should be able to do it. Okay, so now moving on to the counseling side of things. So you're done. The hearing test. The patient's sitting there in front of you.

I'm just curious, do you use the audibility index or the speech intelligibility index when explaining a patient's audiogram? Do you do it all the time? This is definitely the category that I have fallen into. I can't live without it. Do you talk about it?

Sometimes depend on the hearing loss? I guess I fall into that category, actually. If someone has a really mild hearing loss, it definitely at least wouldn't be the focus,

although I probably still would mention it. Or you don't know how to do that because you don't have the tools to do that, or you don't see the point in doing it. All right, we better push that through because we're running out of time.

Have to speed up, make sure we have time for a bit of questions at the end. 35% of people are using it all the time. Excellent. I'm excited to hear that 39, 29% of people are using it sometimes. Also excited to hear that 33% of people don't have the tools you actually probably do.

We'll talk about that. And basically, knowing 3% of people don't see the point, let's change some minds in those last two groups.

Okay, so first, like, if you're using any computer based system you do have the ability to do, because I don't care what audiometer you're using, it's going to automatically calculate it. In this case, this is an advice maestro screen that you're seeing. It shows the audibility index. It either shows it on your computer or it might actually show it on the device. If you don't have a computer based system, you could actually just use, like, you could just upload the maestro software or like otosuite software, and as long as you have the audiogram in Noah, it will pull it up into that and it will give you the AI automatically calculated.

You could also do it on paper and use the count the dots method if you needed to. But I use this all the time because it just explains the effects of their hearing loss on audibility. And importantly, it's objective. These numbers are automatically calculated so they can't argue with them. That's just what it is.

They might be surprised by them, but they can't argue with them. So if you want to learn more about that, the article Anna mentioned, check it out. Audiology online. It's a written article, but we kind of dive pretty deep into that, give you some advice on how

to do that if you're not doing it. Do you demonstrate hearing aids when the time comes, you tell them you need hearing aids.

Do you put hearing aids on them? Yes. All the time? Yep. Sometimes.

No. Don't really have feel like you have the ability to do that or no, you just don't see the point. Very curious about this one as well because I have found just in conversations with people, I mean, it really depends on the person in the clinic, but still there's a ton of people who aren't doing demos, which is, in my opinion, is kind of crazy. What do we got, Anna? Okay, wow.

So 56% of people are doing it all the time. That's so encouraging. I love that. 37% of people are doing, okay, so this is actually way better than I thought. And then there's only really like 10% of people who aren't doing demos, like, more or less regularly.

Okay, so we'll keep this nice and short. So basically, you know, you shouldn't be telling people about the benefits of the hearing aids. You should just be showing them. And then I just feel like with standardized wireless connectivity, 2.4 GHz, no link wireless, we don't really have an excuse for not doing it. So if you're in that 10% where you're just not doing it, just do it.

And there was a good chunk that felt like they didn't have the means to do that. So maybe just, yeah, make sure you have a single set of wirelessly programmable hearing aids that are really easy to fit. And then just quickly best fit hearing aids for people who come in. And I'll probably make a difference in the people who accept the treatment. Perfect.

So let's talk about treatment.

So with the hearing aid fittings, like, I have talked extensively and done three full webinars on hearing aid fittings. So in terms of the nitty gritty of that, if that's what floats your boat, that's what you came on this talk for, just go back and watch those webinars. But let's, let's just, I'm just curious of this population of people. You know, we got 125 people on this call. There was a bunch more people registered of you folks who are here, who's using, who's using real ear measurements.

Do you use them all the time for every fitting? Do you use them sometimes, depending on the fitting. Do you not have a real ear system so you don't have the capability, or do you just not do them because you just don't see the point?

See how this compares to the published data on this.

Again, we probably have a bit of a bias group here. What do we got, Anna? Let's see. 32% of people are doing it all the time. Awesome.

30, 20% of people are doing it. Sometimes it would be really great to get you, it shouldn't be that hard to get you guys in that group who are, and just push you into that higher group if we can, you know, watch the other webinars, you guys should just be doing it all the time. It's, it's not that hard, but. Wow. So 38% of the people, I'm assuming this means that you don't have real or equipment.

Um, okay. So, um, hopefully we can get you to understand why you, you should really have some real equipment. Save up for it, or really, I don't know, campaign for your organization to get it. If you're working for a bigger organization, just really quickly, my hearing aid fitting verification philosophy. It's all about measuring and optimizing audibility.

I do the ear canal resonance with pink noise. Then I check the MPO. Then I run unaided speech at 65 in the real or aided response screen or the old hearing aids. If they have old hearing aids, then I run aided speech at 65 and make adjustments, check for their loudness, run additional levels as needed, and then I'm going to assess the improvement for average speech. How much of an abuse in SII am I giving them?

And as I mentioned, I've done full hour long talks on this stuff, so go back and check it out. But just quickly. I really care mostly about how much the SII has changed. And, you know, with most real ear systems, trumpet included, it gives you an aided SII. It gives you an unaided.

The trumpet actually gives you the difference between the two, which is very cool and unique. And then I use this little chart that I came up with to help interpret the change in SII values. So here we've got, for this patient in yellow, there's a 30. I mean, he's got a lot of hearing loss, but there's a 30 point boost, which would be a very high improvement in Sii, aided minus unaided. So, yes, this person's probably gonna notice a huge difference.

They've got relatively good speech understanding. So, moving on to validation, which is what I wanted to focus a bit more on, because I haven't really talked about it a lot. Do you utilize a formal hearing aid validation questionnaire like that? Is the cozy, like we talked about earlier, or some of these other ones, the IOI ha, or the AppLab? Do you actually get your patients to rate their degree of change or degree of improvement with hearing aids versus not with hearing aids?

All the time, sometimes. Don't have the tools, don't see the point.

22% of people are doing it all the time, so that's not super high. 45% of people are doing it sometimes. Okay, cool. Again, it would be lovely to get you folks in that group

right up into the top group. I feel like it's really easy to do it all the time when we talk about the NOAA tools.

If you don't have the tools, well, you don't feel you have the tools. If you have NOAA, you do have the tools to do this on a computer. And, of course, if you don't have a computer, you don't like using a computer. Like, for example, the cozy, and I'm sure the other ones as well. You can just download the PDF and just print it off and you can do it in hand.

I used to do it in hand for many by hand for many, many years. 8% of people don't see the point. So maybe we can change some minds on that one as well. So I do just on not having the point or seeing the point. I feel like it's really important to have that formally documented so that you could return to it later.

And then you can also check satisfaction in your own clinic and everything. But the long story short, at the first follow up post fitting is when I assess the improvement on the cozy. So we're returning to these hearing difficulties. We're asking them specifically about them, and we're measuring and documenting the degree of change. So I also feel that it's very important to, because the patient will often say, yeah, tv's good.

It's like, okay, well, what's good? Is it slightly better, better or much better? They say, oh, much better. Okay, well, that's pretty different, right. So I kind of prompt them using the language.

I don't use the cozy exactly how it was meant to be used. I don't actually rate the final ability, the second section. But I do like to ask the patients directly and give them these categories. How would you rate your satisfaction? This is just a matter of satisfaction warfare.

Good. Very good. Excellent. I like to have that and document it in the file as well. Here's just an example of the cozy.

This person's biggest listening need was actually the ringing in their ears or the roaring that they were hearing. That's number one, you can see is much better. Number two, which is the conversations, sort of bluffing through things, misunderstanding. It was definitely better. And you can see again, the final ability.

I'm not doing that. So I think sometimes people find the cozy cumbersome. We'll just skip the parts that are maybe a little bit less important. I don't know. Make it your own.

So just a quick question. When do you have your first follow up post fitting? When do you see that patient? After they're fitting? Do you do it one week later, two weeks later, three weeks later, four weeks later?

Just. Just kind of curious here.

And let's push that through, Anna.

Whenever it's ready, as we'll see on the next slide. Well, let's see. So, okay, 35% of people. One week later. I like that.

Two weeks later is most of the people. 42%. And then three weeks. Four weeks, a little less, actually. Well, 19% at four weeks.

Okay, that's really interesting to know. So the way that we typically do it is we do it first follow up, post fitting two weeks in office. But we do try and do a phone call in between at the one week point to check in, make sure there's no major issues at both the phone call at one week and the in office at two weeks. We're asking them about

insertion and any difficulties there. Physical comfort, if everything's good there, acoustic comfort, is it way too loud for them, how much they're using it?

And if they're noticing a difference, because we know that these are the reasons, if all of these things are good, the person's going to be successful with treatment, and if any one of these is significantly not good, then they might actually fail with their hearing aids. They might return the hearing aids. And definitely we're always reading the hearing aids in and checking the data log because we want objective data related to how much they're using them, which is related to how much they're benefiting from them. And then just quickly with the ongoing care. Typically after that, if everything's good, then we would see them for a six month follow up.

If not, we'd have to have another follow up appointment before then, maybe a couple weeks after that. But at the six month we clean and check the hearing aids, we do a listening check, we read the data log again. We want to make sure that the data log is at least as good as it was at that first follow up appointment. If not a little bit better. We definitely don't want it to be lower.

If it is lower, we're going to ask them about that. That's when we run the firmware updates on the hearing aids, make adjustments to bring them closer to target because most people were starting out a little bit under target. And then after that, if everything's good at the six months, we'll probably do a twelve month follow up where we might try and book a little bit extra time if we feel like we want to do a new hearing test or run the hearing aids in a test box or re real, rerun real air measurements. If everything, or if something significant has changed, like you've changed a dome or you've changed the gain or something like that. So just in summary, a modern clinical setup requires a patient facing monitor, in my opinion, at least the way that I envision it.

And it also requires some sort of equipment connection integration with NOAA. So considering consider expanding your assessment battery to include some of the things that we talked about today. There's huge chunks of people, like 45% of people who aren't doing video otoscopy. Not so much on the reflexes, but definitely the OAE's and definitely ultra high frequency audiometry. I feel like this adds a lot and is part of the full complete modern test battery.

Having all the above stuff will allow you to have a better clinical workflow and better clinical evidence for your reports and explaining things to patients. When you add these additional things in there and then proper fitting and verification and then the follow up, which includes the formal validation, is really important to ensure that your patients get the best possible outcomes from their treatments. And again, we kind of went over that quickly today, but we have whole webinars on that as well. So thank you for your attention. Anna, how are we doing for time?

Do I have time to answer a couple questions here?

All right, so, okay, I'm just looking at the questions here. Mike says, is there normative data for high frequency hearing? Yeah, there is. It's zero. It's just like the regular audiogram, it has been normalized.

So like that sloping hearing loss that should be flat across the top. I had one of my clinicians ask me, does anyone have normal high frequency hearing? The answer is yes, they do. They just got to be young enough. They'll be flat right across the top.

What's the best way to contact Clayton about a speaking engagement? Shoot me an email. The email is right here. You can reach me at [informationtreatyourhearing, ca.](mailto:informationtreatyourhearing@continued.com)

According to ultra high frequency, I would like to know your opinion about the next thing. According to the Spanish association of Audiology, some documents about ultra high frequency audiometry and they recommend to firstly get the hearing levels of the patients in those frequencies and evaluate the evolution in time. Yep. But not consider the first levels as we get them as real levels of the patient because they are completely different from the case of hearing levels. Okay.

On the standard audiogram, do you have opinion about this? Sorry for a long question. I actually, I don't know. Can you send me the articles that they're using that show that they're completely different? That would be really interesting because as I just mentioned, the last question.

So my understanding is that zero is normal hearing and that's across the whole frequency range when we're doing an HL audiogram. So send me that to the email you see there. When someone asks, what percentage of loss do I have, how do you respond? That one's so easy. And check out the article.

But you just say for an average level speech, let's say their AI is 40, for an average level speech, you can only hear 40% of the speech information. So I tell them what they hear and what they can't hear. Of course, the flip side of that is what they can't hear. It means for an average speech signal, they can't hear 60% of it. But I like to focus on what they can hear, and those numbers are just as surprising.

What about assr. Auditory steady state response? Do you use it? And if you use it when I don't have that gear, that would be cool to get in the future. What tools do you use to speech perception?

Speech perception, I don't know if that means in the sound field with the hearing aids, with that sort of thing, I would just use the standard wordless and quiet or the

quicksand and quiet through a sound field. And those are, of course, the same list that I use in the booth under inserts. What are your typical timeframes for appointments? That's a really good question. If we think it's going to be a more simple test where there's not going to be a hearing loss, necessarily, even if we're doing oaes in high frequencies, we'll just book an hour.

If we think that there is going to be a hearing loss, based on the case history, we're going to try and book an hour and a half to make sure that we have time to help that patient understand the problems that they're having and what the solutions are.

How do you assess the speech perception of hearing aid user? So, again, if it speeds perception, we'd have to do that in sound field. And I know Maestro has, I've never used it, but they've got a really cool software. I can't remember what it's called now, symphony or something like that, but they have a huge demo thing that you can do, but you can also just do it on any sound field speakers in a test booth. Or you could even just do it through your real earth speaker or just your computer speakers.

There's lots of different ways to do that. If you're just trying to show, help patients show the benefit of the hearing aids on versus off. How do you fit hearing for pediatrics population under five years? I mean, I would definitely be doing that in the test box. So that would be not real ear, but simulated real ear.

So you need a test box like that, like the inventors drum or whatever the test box is for the real ear system that you use. That's the end of the questions.

Thank you guys so much for participating, and I really appreciate the questions as well. And I appreciate your participation in the polls. Thanks for that. I think it's really useful.

Okay, well, that was a very interactive and smart webinar, so great job, Clayton. My best compliment as usual. And I believe there are no further questions. Right. No.

Okay. I'm just seeing one here. Hold on. Are there any alternative options for REM? Like to test real ear targets for hearing aid gain because it's so costly, I can't afford.

No. Hey, man, start selling more hearing aids and get yourself a real ear system. I mean, like, you know, I don't accept that argument. You, you know, and if you think about what it's going to do to your hearing aids and, you know, returns and said you just need to have real air, that's the only option. So make it happen.

Okay, so other question, Clayton, did you use matrix test from an Italian customer? Because matrix test is very popular here in Italy. A matrix test? I'm actually not. Well, I've heard of it, but I've.

I've never used it. Okay, sorry, I see the extra questions here. I'm looking for an audiologist position. Okay. Yeah, that's right.

I've never used it. No, I haven't. But I'm going to look that up and then I have looked into the act a little bit and that seems quite promising and frankly exciting. So as an alternative to the quicksand, that's not language based, but I'll look into the matrix and then last question. How can be ruled out presence of dead region using oaes?

Because be considered a past three consecutive frequencies are present. Yeah. So you just don't use screening oaes, you use diagnostic oaes, which is what I'm using. And you know, if, if there was a cochlear dead region, then, you know, well, you would see that just, you just, you see it. You're looking at the DP gram and you just see that drop down.

There probably wouldn't be any response whatsoever. Yeah. Diagnostic oaes. Yep.

I believe there are no further questions, Clayton, for now. Okay, good. Okay, just a note. Clayton was mentioned in symphonia symphony is that the inventor develop for creating virtual sound environments. It is an excellent system for testing patient satisfaction during the fitting validation phase.

So I'm pleased to announce that Clayton will be leading a second webinar for inventors later this year. So please stay tuned for more insightful sessions. And as always, I strongly invite all of you to keep an eye on inventors social media pages to discover what's coming up next. And I also encourage you to visit the inventives partner page on audiology online, where you can explore not only the webinars that Clayton has led, but also all the content he has authored over the years. Okay, so this is the end of this fantastic and smart session.

Clayton, thank you very much, and my best compliments once again and thanks to my fantastic audience. Okay, you're welcome. Bye bye. Bye bye. See you next time.

Thanks again and bye for now. Bye.