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Modernized Fitting Clinic with Otoscan and Integrated Verification

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Partner: Otometrics

[Don] And welcome to the talk on how to modernize your current fitting clinic with digital ear scanning and integrated verification. I think this conversation or this topic is very relevant in this day and age, especially with all the changes that we're seeing in the industry.

But before we get into it, I'd like to introduce my colleague here, Jeanette Fitzke, who is the lead field clinical audiologist for Natus Medical. And she's had over 21 years of experience in a variety of settings in audiology. And about five years ago, four to five years ago, she joined Natus in a training capacity and has taken charge of that team, very successfully might I add. And my name's Don Kim, and I'm national key account manager for Natus, and I've been in the industry for about 13 years. I've had a private practice, I've worked in a variety of settings as well and started a couple of start-ups in the hearing industry.

So we bring, I guess, a variety of experience from the industry. You could call it A to D, but I called it curiosity. So full disclosure, we are employed by Natus, and today we'll be referring to Otoscans specifically for the digital ear scanner, and the Aurical PMM or probe mic measurement system for the hearing aid fitting system. So after the course, you'll be able to discuss how differentiation in healthcare can benefit the provider, your practice and the patient. And you'll also be able to learn how custom hearing devices and use of integrated verification can help provide differentiations and different segments and segment their offerings from over-the-counter hearing devices. And after this course, you'll also be able to discuss how the components of Otoscan are utilized to obtain a complete and accurate scan of the ear. And a little bit less so on the actual technical aspect of Otoscan, but what we'll do is we'll talk about the why's and why a digital ear scanning and integrated verification is important this day and age in helping optimize your clinic workflow.

But to start, I'd like to share a little bit about Natus and Otometrics and the product portfolio that we have. We have a variety of fitting products, hearing assessment products, screening products, balance products. We also do sound rooms. And then we also have the Otoscan, which fits right into the fitting product line up. But one of the things that kind of links all of these devices and a lot of these devices is that we're a very PC-based company. And that allows us to be flexible and provide offerings and updates and advancements in technology at a much quicker rate and easier rate than something that's a little bit hard wired and doesn't have that connectivity. So if you have any questions, you can visit natus.com.

So the agenda for today, I'll begin by talking about Otoscan specifically, and then my collection, Jeanette, will pick up in the conversation about integrated verification, which is a very cool technology where we've partnered with different manufacturers to optimize your fitting process using real ear devices. So let's start thinking why should we reevaluate the products and the services that we offer? I feel as if when I was in practice, my short stints in practice, we took things quite the same way than I did things when I was learning in graduate school. Not much had changed at that point, but the industry wasn't as dynamic as it is now. And so when we think about the industry right now, it's similar to a lot of different industries and the challenges they faced as well in health care, in retail, sales. And one of the one strategies that most industries have taken up and been successful with is differentiation in their practice. Now differentiation is kind of a hot topic this day and age, and it's been for a while. But differentiating your product offerings, your service, to make it more attractive to a particular target market is a way to generate more revenue. But also, be more competitive in a very competitive market. It's the ability to separate and separate yourself from the direction that everybody is going potentially and offer something very unique. But also within your own product line, offering products that are differentiated from each other is very important as well. So I like this picture, I like goldfish first of all, but I like the idea of looking the opposite direction when everybody swimming the

same direction. And what that allows you to do is try to find opportunity on the other end of change and stagnation potentially from an industry.

But when we talk about differentiation in a retail or service model, this comes from Harvard Business Review and the link is down below so you guys can take a look at the article whenever you'd like, and it's a very good article that describes how to differentiate and how to utilize this in any company or any organization. And when we talk about differentiation within the consumption chain, it refers to the entire process when the patient or a consumer says, "Hey, I need this product," and your ability to drive that need in their entire process of consumption. And then also, all the way through to the point where they say, "Okay, I'm gonna dispose of this product "and then I'm gonna re-evaluate "a different product potentially." So it's assessing and analyzing every single touch point and aspect of that value proposition or value chain in the consumption change. And so when we look at this, there's a way to differentiate each touch point and each point at which this individual makes a decision. And Harvard Business Review spells it out very well. And what they claim is that this is the most profitable strategy where we're able to differentiate our offerings, our products and our services to our customers and provide value that our competition doesn't have. So in fact a company that has the opportunity to differentiate itself at every point where it comes in contact with its customers does really succeed very well.

We'll talk about different ways to differentiate your clinic, but what I'd like to do is kind of go over a couple of business cases here to show how, I guess these are very, very, vague business cases but this shows certain companies that have really excelled in their differentiation however they've done it. Now when I think of IKEA, one thing comes to mind, for me personally, is Swedish meatballs. I love Swedish meatballs and it's a great, great opportunity to go and have a nice little lunch. But also, the business is very unique in itself. The product that they offer, the Scandinavian furniture that they offer is completely unique. And when they first came into the market, it was different

than any other offering that was out there at this price point especially. But also, when you walk into an IKEA, you feel the sense of a warehouse, this magnificent building that houses everything that you need, but then you walk in and if you look at the floor as you walk in, there are arrows that guide you through the entire warehouse, and products are placed strategically throughout that entire warehouse. This experience, this patient or customer experience is very unique to IKEA, right?

So this is a way they differentiated themselves. And they've differentiated their consumption chain at each individual level from the customer identifying IKEA as a Swedish furniture store at a very affordable price, but also to the point where the process of checking out is very unique as well. So they've done a great job of differentiating themselves. Now of course, Apple, these are really, really successful companies that have done a great job of defining how they differ from the rest of the market. Now one thing that I think of, the first thing that I think of when I think of Apple is integration. Why is it so hard to leave Apple products? Well for me, it's primarily because of the integration that I have in all of my devices, my iPad, my MacBook, my iPhone. It's all integrated so well together, it makes it really hard for me to leave. But it's not that I wanna leave, it's just that they have a loyal customer because they've shown value in their products and their hardware and their service, right? But if you walk into an Apple store, the experience that you get is very unique as well. The Apple store was a first of its kind where you could go in and touch and play with all the different products and technologies that Apple offers.

But also when you go in, that journey is very unique, where you get greeted by somebody right upfront and they ask you, "Hey, how can I help you today?" Whether or not you're going to the Genius Bar and the fact that they actually have a Genius Bar is very unique as well. And they call it a Genius Bar. That's very unique. But this experience for most customers is a very, very pleasant experience, and it's something that you take away and you remember, okay? So Apple's done a great job of

differentiation. Now when we think of differentiation in patient care or health care, what has the dental industry done with regards to certain technologies? A couple of things that I think about in terms of the dental industry is that they've had a similar process that we have. When we talk about an analog process of creating a customized device, they use silicone trays, and it's not a very pleasant experience where they shove that tray into your mouth and it's hard to breathe and you feel like they've put too much silicone in your mouth.

These experiences are memorable in a negative way, but the positive switch that they've made is to go digital, where they utilize an intraoral scanner. For me, that experience is so much more pleasant, and the patient satisfaction is so much higher for me personally. And I'm sure it is for almost everybody that goes through this path. So that's a unique memorable differentiator for the dental industry. And the fact that when we digitize these scans, the dental industry is able to do a lot with these digital scans as opposed to using an analog tray of silicone. The other thing that I think about in the dental industry is the fact that a lot of these dental labs have gotten to the point where they've internalized the entire 3D process, where they do an intraoral scan, they have a lab in back, they actually end up printing out whatever implant or device they need right there on the spot. Now in audiology, we are still very early in on this digital 3D process, but these workflow opportunities are what we see when we talk about 3D and when we talk about digital scanning.

Now what about this test? What industry is this? This is optometry where they do the eye puff test. This is something that I've never looked forward to. But what they've also done in optometry is digitize that test because they know for patients, the patient satisfaction is very low. They look at the patient journey throughout the entire consumption chain and say, "This is a very unpleasant experience for the patient. "Let's try to optimize it." Now that's not the only reason to digitize it. This digital eye tonometry test measures the same thing as that puff test, but what they've been able

to do is minimize patient discomfort or eliminate it altogether, but also use digital testing to be able, to be more effective in analyzing and using serial digital patient healthcare information.

So in terms of digital data, this is a little bit more effective as well, okay? So in terms of the patient benefit, it's quite obvious, it's patient comfort, it's patient satisfaction. And that goes a long way. Now when we talk about differentiation, one aspect of differentiation, one subset of differentiation is personalization. And this is also getting a lot of headlines in healthcare and business optimization as well. Now personalization is tailoring a service or product to accommodate specific individuals, sometimes try to tie to groups or segments of individuals. But when we talk about patient care in our clinics, there's a lot of different ways to personalize your offerings.

Again, let's look at the consumption chain from beginning to end. And we'll show some examples through this and why personalization can help your business. So one of the reasons why considering personalization will help your business is that personalization has been shown to attract and retain and collect, retain patients, attract patients, collect more patient data but also increase patient satisfaction. And how can your business use personalization? When we're talking about personalization, it's customized to that specific individual, right? Whatever service or product that you utilize. And for that particular individual, this experience, this is the part of the patient journey where they experience something that's catered to them. The little things such as identifying and seeing your own initials on a custom hearing device or an earmold, or the custom device itself. The customization of hearing devices is a part of personalization, right? So that's why individuals, when you think about hearing protection, there's multiple types of hearing protection. You have foam hearing protection, you have the blanket gel or silicone and you have the rubber ones, but then you also have customized hearing protection. And businesses, I mean businesses can see more revenue from these customized hearing protection devices because they are

in fact that intrinsic in that they are specifically made to that individual. But personalization isn't a fad. It's not a trend.

It's happening all across industries, not just audiology. And this inc.com article explains personalization very well. Now when we're talking about personalization, Boston Consulting Group, which is one of the world's most recognized consulting groups, what they do is they do research and they... What they've done here is written an article about the monetization of personalization. How does this affect a business? And what they identified was that the brands of the companies that create a personalized experience by integrating digital technologies and proprietary data for consumers are seeing a 10% increase in revenue, right?

So utilizing patient's personal health data and helping them across the patient journey for instance is a part of personalization, okay? So it's a tailor-made experience for the customer. A customer feels as though the brand is taking the extra steps needed to form a solid and loyal connection. Loyal is the big word here. The cost to acquire a new patient is very high in our industry, and it takes a little bit of extra effort to be able to gain that loyalty, and then personalization is one way to do this. And it is a proven way to do this. So when we're talking about how to quantify how personalization, any personalization has affected your business or improved your business, how do we quantify this? Well, here's some basic business metrics. Conversion rate. Has your conversion rate increased? Has your return rate decreased, right, in a similar vein. Has your average order value increased?

For instance, along with a set of hearing devices, will they purchase hearing protection because this is a noisy world that we live in. Or will they order molds that fit on their insert earphones for music? So all these other ancillary purchasing options, or even upgrading from mid-level technology to high-level technology because they see value in the service and the products that you're offering, because they see personalized,

right? So these are all metrics and great opportunities to actually measure personalization.

The other way to do it is more subjective measures with questionnaires and to ask the patient about that process. How did you perceive, how did you perceive the procedures that were done or the testing that was done? Or were you satisfied with the outcome? But when we look at examples of personalization in different markets, in the general market, one of the first things that I think about is Road Runner Sports. Road Runner Sports has a very unique and very parallel path in my opinion. I mean, they sit in a world of, they sit in an industry where they have a very competitive industry in terms of retail chains. And they sell tennis shoes, but we know that we can buy tennis shoes from almost any retail facet. Online. We can do it at any retail shop that sells clothing or shoes. It's a very difficult market to be in.

But one thing that Road Runner Sports has done really well is differentiated their services, but also made this a personalized process. So let me share with you an example of what this process feels like or looks like. When you walk into Road Runner Sports, first of all, before you walk in, you can do some research on their website and they have this Shoe Dog questionnaire that asks a bunch of questions. What's your shoe size, what's your weight? Do you have any aches or pains? What is your arch like? That's important. I have a very low arch. What is your goal? Why are you looking for a customized set of shoes? Well, I wanted to run a half marathon. So I typed that, okay? So they ask all the questions very similar to our case history that we ask in audiology. And when you walk into the store, you get greeted by a customer service rep that asks you all these questions and confirms these. But then what they do is put you on a treadmill and they ask you to run so they can measure and assess how your feet hit the treadmill as you're coming down, right? Whether or not you have pronation, et cetera. So they assess your running style and they write a bunch of stuff down. And then they put you on what looks like a posturography platform where they measure

your center of gravity and your balance and whether or not there's extra pressure on one foot versus the other. So this is a very measured process, all before they recommend a set of tennis shoes or insoles. Now my experience was, personally, I am willing to pay more for this. This is a very catered service. Now if I'm gonna buy tennis shoes, I'm probably not gonna buy online anymore after that experience, right? And so this type of concept of personalization is very important for me and a lot of consumers.

So here's another example of personalization in health care. Your.MD. This is an app where you can actually enter in your symptoms and they can actually respond back to you in a very different way, a different way of providing service. And when we look at Cornerstones4Care, it's a diabetes tool where they can use your own health data to set reminders, but also track your progress with diabetes. So all of these examples of personalization in health care have been very successful. But what changes are we seeing in our personal industry that warrant changes in our clinic, right?

So when we think about what's occupying most hearing health care providers these days, the idea of staying professional, staying on top of best practices, providing excellent patient care, running an efficient business and being able to be positive in your profit margins and staying competitive. These are all things that are on business owners' minds and clinic directors' minds, right? But when we look at the trends in our industry, we have some trends that sometimes make it tough, make it so that we have to adapt to the current status. When we think about baby boomers, their expectations are very different. Their way of consuming is very difference. Over the counters, when we think of over-the-counter hearing devices, that's definitely gonna have an effect in our industry.

Now whether or not you want to embrace it or not, I feel as if everybody should think of a strategy around this. ASP, the average sales price due to over-the-counter hearing devices can potentially change, right? But also, volume will potentially increase

because of this. And then digitization of the patient journey, making your workflows more efficient, is gonna happen, is what's coming for you guys. So when we look at the trends in audiology, when we look at the projected need versus projected growth of audiologists, there's a huge demand for audiologists due to the increasing baby boomer population, right? The increasing age of the baby boomer population.

Even Windmill and Freeman did a study in 2013, where they look at the 30-year projection and impact of academic programs and the demand of audiologists and the supply of audiologists as well, and what they said was in 30 years, we're gonna have to increase the number of audiologists by 50%. And at that time, I believe though we had just over, in the U.S., we have just over 11,000 practicing audiologists. But at the same time, while lowering attrition rate by 50%, from 40 to 20. So our attrition rate at that time was 40%. Attrition rate refers to the number of audiologists that enter an industry and leave before retirement age. So they're saying two out of five audiologists retire or quit or leave the industry, find a different job, right? So there's a lot that needs to change.

The baby boomer population increasing in age will definitely affect the way we provide business because, because of that supply and demand curve, we will have to be a lot more efficient in the way we provide services. But of the number of audiology programs helping the demand that we see, that we need in our industry, if you look at this, the number of degrees awarded at the end has not changed very drastically in five years. It's increased by about 70 awards, 70 degrees awarded, but it does not reflect the actual demand that we have. So that's a consideration. Another variable in why customization I think will be important is when we look at the hearing aid styles that we fit in the past several years, when we look at 2011 versus 2016, which is the pie charts here, the RIC mix has increased quite significantly.

Now these charts don't necessarily show us whether or not there was any customization, a.k.a an ear mold placed on the device, but the fact that the RIC or RITE has increased that significant fashion tells me there was a lot of universal fits. And when we talk about the form factor of hearing devices, when we think about what OTCs are potentially gonna look like when they come out, chances are, a lot of the devices will be RICs because a lot of the PSAPs are either RICs or thin tubes. Behind-the-ear thin tubes, right? And when we look at how that will affect our product offerings in terms of differentiation, I mentioned differentiation within your own product line as well.

When we look at the chart on the right, that refers to the three average levels of technology and the actual average price point per year. And when we look at this, there's a steady increase of average price between the low, middle and high end technologies. And when we look at this over the years ASP has risen, think about the form factor that OTCs will potentially come in. Now not every OTC will be a RIC or a thin tube, but there will be quite a few. And when a patient looks at an OTC, a RIC or behind-the-ear or thin tube OTC and compare it visually, just visually, using their own perceptions to the recommendation that you've made potentially that an audiologist will make, if it is a RIC, even though we are really good at describing the differences in technology and the benefits of the products that we offer, the services that we offer, often times, because of the potential low price point of OTCs, they will try OTCs first, right? Now I don't necessarily think this is an overall bad thing.

But I also think there's a way to differentiate your product offerings a little bit more. Customization is on the verge of a comeback. I think we've gotten away from customized products, custom products, hearing device products over the years due to convenience, but also flexibility of the RIC and ease of cleaning, replacing the receiver. I think all of these have made it easy to fit RICs, but I also think that we got away from custom products quite a bit, especially with dexterity issues and CICs in terms of

cosmetic issues. I know we still fit a lot of those. However, I do see that the industry will see a resurgence of that. So it will be easier to differentiate for the patient. This is gonna be completely customized for your particular ear as opposed to the RIC, okay?

So when we talk about digital ear scanning, its purpose was essentially to digitize an analog process, to create a digital file of your silicone ear mold impression. And it does that, right? But what we've learned in our trials is that we can't think of Otoscan and digital ear scanning as just a silicone replacement. It does so much more for our businesses. And we'll go over a little bit of the workflows here. But when we think about the traditional ordering process, we have the silicone ear mold impressions that we make in-house. We ship via FedEx or U.S. mail. And then once the manufacturer receives it, what they do is they take that impression, prepare it to be scanned. So they put it in a box to scan. And the final file type that's created is called an STL file, and it's a very basic standard 3D file.

From that point, they have modelers and sculptors that sculpt that 3D file. And then once they have enough orders, they print out an entire plate of your ear molds or hearing devices. And then they process it, post process it, and then they ship it back to you guys so that you can fit. This is the traditional workflow. What we propose with digital ear scanning is to eliminate all of these initial steps. And what this allows you to do is have much quicker turnaround time potentially, but also be able to get your patients in hearing devices at a much quicker rate, but also that helps increase customer satisfaction as well. Now this entire process, there's a huge wow factor to this. I'm not sure if you guys have seen it. We don't have the time to show videos of this ear scanning process, but we have plenty of videos on YouTube if you just search Otoscan that can show you how it stitches a file together.

And the patient visually remembers this experience that they go through. And what our recommendation in terms of workflow is to try to optimize a lot of these opportunities

in your clinic. For instance, we'll talk a little bit about liability when making silicone impressions. We almost eliminate that liability with Otoscan potentially by having key metrics in the scanner that help you avoid going too deep. So Otoscan, as we found out, is the future of hearing care counseling and changes the way you provide hearing care. But in the existing clinics that have been using Otoscan, what we're finding is that they have found that it attracts new patients into their doors. And also, it's a very cool way to engage your client. As they watch their ear being scanned, they're very courteous of this process, right? So it's a very cool way to engage, but also counseling them as you look at the file and say, "Oh, Mr. Jones, from this digital file that we just scanned from your ear, I can tell that your ear is a good candidate for an IIC because it is large in diameter and it has the space that we need to be able to fit all the components."

So all these opportunities present itself where otherwise you wouldn't necessarily be able to do that for most individuals without taking a silicone impression. So when we're thinking about one way to make an adjustment to our workflow, those clinics that have been successful with Otoscan out there have changed their workflow to incorporate this into their hearing evaluation process, whereas traditionally, if you just replaced the silicone process, it's just done on the tail end when you need a custom device. But think of the dental industry. How have they incorporated scanning or how have they incorporated the X-ray, the CT scan? They do it on almost every new patient that comes in. So what we'd recommend is scanning every patient right after otoscopy. And what that allows you to do is one, generate that wow factor, but also engage the customer and counseling them about their ear.

Showing them, this is where wax forms on this portion of the ear canal. So now if you use Q-tips and drive it into the ear canal further, that's when the wax won't fall out, right? Or you just accumulate a lot more wax. Or you have a collapse in the ear canal. Whatever counseling you might be able to figure out, that's a great way to engage the

customer on the front end and not just use it as a passive mechanism. And this will help generate more satisfied customers. So one of the studies that we did, what we found when we asked the patients for feedback, they said 92% of the patients reported excellent or good comfort. Now all of the scanners, all the individuals that we're scanning were essentially new scanners. So they will develop a higher skill set as they scan more, but this is still very impressive. 92% have reported excellent good comfort. 94% reported scanning has a wow factor. They were wowed by it, which is a very powerful, powerful word in my opinion. 74% of patients reported better than silicone impressions.

So when we talk about this, and I'll sum it up so we can get to the integrated verification portion, but one of the technologies that we have in Otoscan is this target depth gauge. This ruler right here tells you whether or not your depth of insertion is too deep or too shallow based on lit reviews on how long the ear canal is, but also recommendations from hearing aid manufacturers on how long they want the scan to be. Now on average, we're about four to six millimeters past the second bend, which is still quite a bit away from the TM. So when we hit this green area, which is what we call target depth, we've hit a long enough depth where the manufacturer can create pretty much any custom device in the market, including IIC, but also we're still safe.

And the fact that we limit liability, especially when we're not doing as much customs; and students coming out of schools, if they don't get exposure to customs outside of school, they lose that skill set in terms of making your mold impressions, a lot of them do, is what everybody tells me when I go make these visits. So we reduce liability but still able to do custom devices, right? And this is a great way of wowing your patients but also increasing customer satisfaction because when you do it properly, the customer does not feel a thing in their ear canal. The other benefit is that the remake rate in our studies dropped from about 15 to 20% to about 8%. So that's pretty significant as well. When we have reduced remakes, we end up benefiting financially.

But also, we save quite a bit of time. So when we look at the clinic workflow, these are some of the benefits that you can see. I'm gonna go through these a little bit quickly, but you'll be able to download the presentation and look at all the benefits from this aspect and all the differentiating factors from digital ear scanning for the clinic workflow. And I'm not sure if you know but it's a great opportunity to go green, meaning there's millions and millions and millions of ear mold impression materials that are thrown away into our landfills.

And with Otoscan, you don't have any disposables. So that's a great way to differentiate your clinic. So again, we can attract more patients. We can please more patients, streamline a lot of our workflows with Otoscan and increase patient satisfaction. And the complete digital solution comes with the scanner, a headset for tracking device. It's a tracking headset. And a dedicated laptop. And on the laptop is a training application. And then we also send all of our scans to the web portal. So all of this is included in a complete solution. And you can find more information on natus.com. You go to the Otometrics section and you go to Otoscan under fitting systems, and you'll be able to find a lot more information about this. And you can also contact us both directly. We'll have our contacts at the end of the presentation. Okay, all right. So now what I'll do is I will hand this over to Jeanette. She'll talk about integrated verification.

- [Jeanette] All right, thank you. Good morning, good afternoon. Can everyone hear me okay? All right, so we're gonna go ahead and just talk about, now that we've taken the digital scan, we've completed the hearing exam, patient has decided to move forward with hearing aid purchase, how can we improve that fitting process? So one of the things that we know when it comes to verification is that a lot of people tend to underutilize the benefits of it because they feel the measurements are just too complex, it takes a lot of time to manually make all those adjustments to get to your target gains. Also, within the fitting software, you may be using proprietary fitting algorithms. And

within your verification software, you'll see the standard options of NAL, NL1, NL2 or the DSL options, and so you're kind of in the realm, am I really comparing apples to apples or apples to oranges?

And then also, just placing the probe tube can be a concern. And just really making sure that you're having time for other things that you need in the visit, such as showing patient how to put the hearing aids on, how to put the batteries in, how to change wax guards and all of those factors. So those are all kind of some of the limitations that I hear others are concerned about when they're getting into the verification phase. But if we aren't doing verification, what are some of the things that we can be concerned about? Well, this was a study that was published back in the Hearing Review back in 2015, and this was using NAL-NL2 for our audibility targets. And what you're looking there on the left hand side is soft input at 50 dB. The middle is average input for speech at 65 dB. And on the right is loud inputs of speech at 75 dB. And what you're noticing here, they did use five different hearing aid manufacturers. And if you're looking here on the left at the 50 dB graph, if we are below that orange line, that orange line is your target, almost all the manufacturers in the low frequencies are well below target, but more astronomically in those higher frequencies.

So what would be the detriment to that patient? Well, there were more recent studies that have come out that have shown and looked at speech perception data, and they're finding that patients aren't performing as well with word recognition scores or speech in noise testing. So if we sent the patient out the door with this type of fitting, we're really not giving them the proper benefit and advantages that they could get with hearing aid technology. Then you look at this middle graph for average speech. Average speech overall is pretty good in the lower frequencies. However, again, a little bit of an underfit there in the high frequencies. But then more concerning is if we looked at the loud speech graph, in those lower frequencies, most of the manufacturers again are overfitting those patients.

So now, when those patients get into noisier situations, they're gonna actually become uncomfortable with the hearing aids and may choose to not use their hearing aids or turn the gain down and again not get the benefit for those noisier situations. The other thing is if we are not doing real ear measurements on the patient and doing verification, the patient perception really is different between the two. So this was a study that was published back in the Hearing Review in 2016 with Amlani as the lead. And what he really wanted to see is what was the value of the clinician in the process? So previously, we talked about the objective measurements with doing gain types of targets, but this really wanted to see what did the patient perceive? What was their emotional value? What was their behavioral intent? How likely would they be to repurchase the hearing aid or go with that provider and willingness to pay not for the device but actually the care that they received from that audiology provider.

And so what they've found is that when clinicians were actually providing best practices and doing verification as part of the fitting process, those patients had a much higher level of the willingness to actually pay for the services that they were receiving. And this is where, when we were talking a little bit earlier about differentiation and kind of personalization for the patient, when we are personalizing that device to the patient's fitting targets, they are now gonna seek that value in us. And with all the threats going on with audiology in general and service models, we wanna show them the value that the clinician can actually provide. So can Otometrics and Aurical fitting help to move that process forward? Well, we take not only the manual verification process as an option, but now you also have the ability to do integrated verification. What can that provide you is a more preapproved workflow, better efficiency. But the other things that you get from following best practices is you're gonna have less typical follow-up visits from the patient. You're gonna have less returns from the patient, increased customer satisfaction and just an overall better client experience, which is really kind of drawing on the other things that Don already talked about earlier in the

presentation. So what is required to have automated verification? There has to be an ability for the hearing aid manufacturer software and Otosuite software, which drives the Aurical fitting software, to actually have intermodule communication.

So this was a standard from HIMSA, which is kind of your power house for Noah. And with that, the two modules can actually have simultaneous communication with one another so that the two can actually share information and you can have adjustments being made between the two programs. Without that, this is not possible. So with that, with automation, what's gonna happen is you're gonna have a lot less effort in the fitting process because you can actually drive the entire fitting process through the hearing instrument manufacturer software. So you don't actually have to even access your verification software during the fitting process.

So if you are working within Phonak's software, there's actually a spot right within that software to go to the verification phase. And I'll talk about some of the other manufacturers that we have as well. So who are the partners that we integrate with, with integrated verification? We have Resound, was kind of our first one. And then we have Phonak, which is called TargetMatch. Oticon, which is an AutoFit, and then we have Signia or formally known as Siemens. Now we don't have enough time to go through details in this presentation on how to access all of those features, but if you are working with the Aurical system and not aware of how to use this feature with those manufacturers, just reach out to myself or Don at the end and we have quick guides with all the manufacturers that I can provide to you to help with that process. So I'm just gonna go through a couple of the hearing aid manufacturers as examples here.

The first one I'm gonna talk about is the Phonak Target. So basically, when you're within the Phonak Target software and you're in the finetuning guide, there's a spot called TargetMatch. When you open up the TargetMatch, you're gonna have a step-by-step option now here to actually go through the entire standard fitting

workflow. So the first one that we'll start with is doing an unaided response. And with the Phonak software, there's also an option to help you with probe tube placement so that it can help you more accurately place the probe tube for you or verification phase. Then after you do your unaided response, you're gonna place the hearing aid into the ear, go through your occluded response, it'll do some on-ear acoustic transformation measurements for things such as microphone location effect and the occluded response. And then it will turn the hearing aid back on and you will start your aided response testing. So with the aided response testing, you have the option then to either manually match. So if the software is determining that you're under or over target, will automatically try to adjust within three dB of the target and make those gain adjustments. Or you can say, and then see those changes at the end and then manually apply those changes, Or you can let it automatically match. So it just depends how much control over that fitting process you want.

The one thing I do recommend with all of your integrated verification, just as a pointer, is to always do your feedback test prior to starting integrated verification. You always wanna know what your feedback limits are before you proceed forward. So a lot of people say, "Well, is this just as accurate? "Can I really trust doing this integrated verification?" So there is a lot of research going out with the different hearing aid manufacturers. So Phonak has conducted their own independent studies, and this was one that was recently just published, and they have some more coming out soon. But they wanted to see, going with a manual fit process verses using the automated TargetMatch approach, how close were we getting to the target? And so what you're looking at on this graph here, the red line was the manual fit. So just going through the manual verification process. And then that blue line on the graph is the TargetMatch. So that was the automated. And so what you're looking at here, that zero line is your target line. And so you can see basically from about 400 hertz, all the way up to 4,000 hertz, they were able to achieve that three dB plus or minus target using that automated approach.

However, if you look here at the manual approach, at about 1,500 hertz there were about five dB over target. And then about four dB here were actually almost 10 dB from target. So you can see how much more quicker and more accurately you can get that measurement to be what it needs to be for those gain audibility. The other thing is, when you're within the manufacturer software, you can actually choose to verify to the proprietary fitting algorithm. So like for example in Phonak, if you wanna use Adaptive Phonak Digital, you can verify to gain audibility targets for Adaptive Phonak Digital versus NAL or DSL options.

Then I wanna talk a little about Resound. With the Resound, same very automated process, from going to the unaided response to the occluded response to the aided response, and then either manually or automatically applying those gains. So we don't really talk about that. But what I wanna talk about is the improved efficiency. So with the improved efficiency, you're gonna see that we're actually gonna be able to cut the time down. So if you look here, the red bar there is the manual fit process again. And then this orange bar here is the actual auto fit to target. And what they're looking at was three different individuals there, and then this is the combined. And what they tried to see here is how much overall time did it actually take to fit to target using the different methods with each different fitter.

So what you're gonna see here, this is a time graph here on the side. So with the orange bars, you can see that all of that time was much lower than using this manual approach here. So again, trying to verify not only the accuracy but also the efficiency and the increased time. So just think about that in a fitting process. If you're able to save five minutes per patient, 10 minutes per patient in each fitting experience, what is that going to add to other things you can do in the counseling process? I mean, for me, it's always, can I give them a little bit more time to talk about maybe the benefits of a t-coil and some of the things that they can get from that? Or maybe they just need a little extra more time to learn how to put that hearing aid in or the battery.

So it's just gonna kind of give you that extra time. And then because you are using best practices, you're gonna also hopefully reduce their overall visit. So again, that's gonna allow you for more time to do other opportunities in your practice. So kind of to sum it all up now, Otoscan and Aurical, they really are going to help you to propel your practice forward because you're gonna have really the optimal benefits in providing fitting services because you're gonna be not only providing a modern approach but also following best practices by verification. And then being able to do a digital ear scan is gonna provide so much more value to that patient in the whole fitting experience. It's something they've never experienced before, and it's really gonna be something that's gonna tie them to your clinic and really make them feel like you are the leading edge health care provider for their hearing services.

So it's really just gonna engage them and attract them to really feel tied to you and your practice. And just kind of one thing that we really pride is the development of our products really drive by the hearing care professionals themselves, and that's why you do see so much education and training as a part of our package. So kind of just to give you an idea that you guys do have the handout there to reference. So all of the things that we talked about throughout the presentation have references for you to view and look at. And then as far as our contact information here, there's the natus.com website that Don referred to also. And then there is each of our email addresses. I did wanna leave a little bit of time for Q&A here at the end, so if you do wanna get more information, I know we just briefly talked about integrated verification today, there are other presentations online with Audiology Online, or you can reach out to myself and I can help you with all of that information. So thank you everybody for your time, and we will open it up now the questions. Any other closing thoughts that you have, Don, that you wanted to do before we have questions as well? If no one has questions yet?

- [Don] I don't have any other closing thoughts. I think all of this is a way to actually optimize your workflows and your clinic efficiency, like Jeanette was saying, and help

save more time for other activities that could potentially generate revenue. So yeah, we can field questions. There's a Q&A field. I believe you can type in your questions if you have any, or you can shoot us emails at the end.

- [Jeanette] Don't be shy. If anyone wants to ask a question, please feel free. I do see one popping up here on the side. All I can see, has Resound...

- [Don] So the question from Rita is, "Has Resound recently updated their AutoREM? "I know before it wasn't working well."

- Correct.

- [Jeanette] I definitely can. So yes, they have recently updated. Before they were just using a noise, a speech noise signal. Now you do have the option to use ISTS as a speech stimuli. And they used to just use insertion gain as well. You now have a lot more flexibility and options with it. And I am actually in the process of working on some new fitting guides because I just received the new aids to experiment and do some new videos with. So some of that will be forthcoming very soon.

- [Don] Okay.

- [Jeanette] Just some food for thought on the integrated verification. If you do find that something is not working correctly, a couple of things to bear in mind: you do have to have updated software with Noah. Most of the platforms do not work on anything lower than Noah 4.5, so do bear in mind on that. Then really, the hearing aid software isn't typically a big issue because most people keep that updated. And then also, with Otosuite, depending on the manufacturer, if you're on a much older version of Otosuite, that may not work as well. And then the last thing on that would be your Aurical system. If you do not do your annual calibration, you cannot bypass the calibration

when you're within the integrated hearing aid instruments software. So if you're getting any error messages, just check some of those things out. And then you can always contact myself. And if you're not in the Western U.S., I will put you in touch with your local field audiologist that would be able to assist you and help you through any of those questions that you have. And that really applies if you have any other Otometrics questions with how to do something with your equipment. Again, just reach out to myself and I can always put you in touch with the proper team member. Anything else, Don? I think we're good. All right. Well, I mean, Anna, I don't know if we can wrap this up yet, but I appreciate everybody for coming to our talk today. And one of the things that we couldn't get into is a little bit of the details of the technology themselves. But what we wanted to accomplish here was to emphasize that some of the changes in technology and in the products and the softwares that are offered out there right now, these are ways to help separate your clinic and provide a different level of service at different touch points within that patient journey. So ultimately, when we reassess, when we map out the entire patient journey, the conception chain, every touch point, there's an opportunity for us to separate our offerings and really make them efficient but also make them memorable, make them a differentiator. And with the industry changes that we see coming, that is a great way to brand your practice and to actually separate your practice from the field. So I appreciate everybody coming, and I think if there's nothing else, Anna, I think we're good.

- [Jeanette] Thank you to everyone as well. Have a great day everybody.

- [Don] Thank you.