

(Captioner standing by.)

>>: This is an audio check for today's webinar, which will be starting in about 5 minutes. Our webinar's entitled today, introduction to evidence based hearing screening and evaluation practices for children, ages birth to 5. We're going to record today's webinar, so, if anything disrupts your full attention to our, um, webinar today, you'll be able to access it in a few days on our website at kidshearing.org and stream it there live. That's a good thing to keep in mind, not only for your own use, but, um, if you have anybody who is not attending with us live today, they may be able to access it later. So, keep in mind anybody who you think might benefit from today's presentation. Once again, we'll be starting in about 5 minutes. We'll be getting started here in just a few minutes. For those of you who have signed on early, I want to just thank you for being here today. We're going to record this webinar, so, keep that in mind, if anything disrupts your full, um, attention to today's webinar or if you think of anybody who isn't attending live whom you think might benefit from the things we're going to be talking about today. Also, notice on your screen that there's a place where you see the power point slide and a place where you see the video with me and the interpreter.

There's a fine vertical line between those two fields that you can click on and move to the left or right, which will change the portion, the proportions of those respective fields. So, feel free to adjust that in a way that meets your particular communication needs. You'll also notice that there is a live captioning option today. If you click on live transcript, you'll be able to see our captioning feature, um, and, also, manipulate its size and location on your screen. As I said, we're going to get started here in just a minute. People are signing in at a fairly rapid pace right now. We had quite a response to today's webinar, well over 1200 people have registered, so, I want to give folks a chance to sign on and to transition over from what they were doing during the last half hour. My video has stopped? Is that what you're saying? Oh, then, I'm just going to turn my video off. I wonder why that is. Is my audio okay, Gunnar?

>>: This is Gunnar. Your audio's been pretty much fine for the most part. It'll get a little laggy at times, but I'd say 98 percent is coming through, but, yeah, video was really laggy.

>>: This is the interpreter. Your video is working great.

>>: Good. Well, that's important. You all do not need to see me, so, um, why don't we go ahead and get started. I'm not going to be on video today, because, um, we're having a little technical challenge with that, but that's okay. I want to welcome everybody to today's webinar. I'm Will Eiserman, and I am the director of the Early Childhood Hearing Outreach Initiative, also known as the ECHO Initiative at Utah State University. The ECHO Initiative is housed within the National Center for Hearing Assessment and Management at Utah State, which serves as the Early Hearing Detection and Intervention National Technical Resource Center funded through a cooperative agreement with the Maternal and Childhood Health Bureau. Since 2001, the ECHO Initiative served as a national resource center on Early Hearing Detection and Intervention with a focus on supporting Early Head Start and Head Start programs staff in implementing evidence based hearing screening and follow up practices, and we also reached out to many other early care and educational settings and those who work in those settings to develop their hearing screening and follow up practices as well, such as programs like Part C or, um, Community Health Centers. So, we had quite a diverse set of people who have registered for today's webinar from all of those contexts, and we're really delighted to have you all with us today, so that we can continue to share the information that we have that you may be able to put to use. Before I go any further, I want to let you all know a couple of logistics. Today's webinar is being recorded and, so, what that means is that, within the next couple days, if you go to [kidshearing.org](http://kidshearing.org), you'll be able to stream this video, um, and be able to just go to whatever portion you want to listen to again.

It also allows you to share this webinar with people who aren't attending live with us today, so, keep that in mind as we progress. We're going to, um, present our information for you today and, then, we'll open up the floor for questions, and we'll open up a Q & A box, um, at that point. We won't be monitoring

and interacting with questions throughout, we'll save them till the end and, hopefully, we'll anticipate some of your questions, so you won't even to ask us. That's always our goal. I also want to give a shout out to our interpreters and our captioner today for your time and talents and helping us make this webinar as accessible as possible. To Gunnar Thurman, who is our tech person in the background and, um, to all of you for taking the time out to think about these important issues related to communication with, um, young children that we're all serving. We're joined today, um, by Terry Foust, who is a pediatric audiologist and speech language pathologist, who has served as a consultant and a trainer with the ECHO Initiative since its very beginning and, so, Terry, welcome.

>>: Thank you, William and, um, it's a pleasure to be with all of you this afternoon. As William mentioned, he and I, along with many other ECHO team staff, as well as local collaborators, we've provided training on nearly every state. It's really, literally, been, I think, thousands of staff from Early Head Start, Head Start, American Indian Alatchinga Native and Migrant Head Start, as well as other education programs over the almost 20 years that William mentioned, but the important thing is that we're always encouraged, just like we are today, with a huge amount of interest that there is in establishing and improving evidence based hearing screening programs, really so that children with hearing related needs can be identified and served.

>>: We always like to start out with, kind of, addressing the question of why. The work of the ECHO Initiative is based on the recognition that, each day, young children who are deaf or hard of hearing are being served in early childhood education and healthcare centers without their hearing related needs even being known. Hearing loss is an invisible condition. So, how can we reliably identify which children have normal hearing and which may not?

>>: Well, the short answer to that question, William, is that early care and education providers can successfully be trained to conduct evidence based hearing screening, just like you see here in the photos on your screen, and the ultimate outcome of a hearing screening program is that we can identify children

who are deaf or hard of hearing, who have not yet been identified previously. So, if you look at your screen, the procedure on the left is called otoacoustic emissions, or OAE hearing screening, which is the recommended method for children birth to 3 years of age and increasingly recommended for children 3 to 5 years of age as well. Now, on the right hand side, you'll see the procedure called pure tone audiometry hearing screening, and that's historically been the most commonly used screening method for children 3 years of age and older, which you'll still see in many early care and education settings and providers using, and we're going to be talking about both of these methods today.

>>: So, let me give you, um, an overview of what we're going to cover today. While this presentation is not a training per se, our goal is to provide an overview of the big picture of what is involved in implementing evidence based hearing screening for children across the age spectrum birth to 5 years of age, and we're going to start off by giving you an overview of the auditory system, or hearing system, which will help lay a foundation for understanding how the hearing screening methods we'll be talking about actually work. Then, we're going to talk about why we screen for hearing loss, what even makes it possible for us to seriously be engaged in systematic screening for hearing with young children. We're going to talk about the two methods Terry just mentioned, OAE and pure tone audiometry, starting with an overview of OAE screening and followed by an overview of the pure tone audiometry screening process. Next, we're going to address the important question, what do we do next, when a child doesn't pass a screening?

We'll summarize the follow up steps that are undertaken when a child doesn't pass a hearing screening on one or both ears, so you have a big picture of not only how to screen, but that important follow up part of the process. We'll wrap up by showing you some of the resources that are available to help you develop your evidence based screening program, how to get training and, um, and, then, answer whatever questions you might have, okay? So, that's where we're headed, and you can follow the progression of these topics by referring to the left side of your screen and, since this is a recorded webinar, this left

side menu can be helpful, if you return to this webinar in the recorded format and want to navigate to a specific portion of our presentation to review again or to share with others. So, before we launch into our content, I want to make sure you all know where to go after today's webinar to get additional resources, information, and access to training. You know, before I do that, one of the things that you're going to hear us say several times today is that we really want to make sure that you all understand that implementing evidence based hearing screening practices is more than using a designated piece of equipment or a specific method. Would you agree with that, Terry?

>>: Yes, absolutely. We want to really identify those children that are at risk for hearing loss and, um, and, then, provide for their follow up.

>>: So, to implement evidence based practices, the recommended equipment or methods we'll be talking about today must be used according to a prescribed set of steps under carefully controlled conditions, each step of which is carefully documented in detail, and this is true whether you're using OAE screening or pure tone audiometry screening. Over the years, the ECHO Initiative developed a wide range of resources to help you achieve this goal, and our goal today is primarily to help you find all of that information and the resources that you need. So, let's take a look at this website, [kidshearing.org](http://kidshearing.org). You'll find, um, if you go here, you'll find a variety of implementation tools and, certainly, before you sit down to develop something or to write a letter to parents about your screening efforts or a referral letter or to create a form for documenting your results, please check out what's already audio out many of the resources you'll find here are the result of various examples, early childhood programs shared with us. So, you can be assured that others have used the language and the format of many of these resources to achieve the same goals that you have. We also know that many of you want to know about how to access training. So, be assured that we can direct you to a specific location where you can get the training you need, um, and, so, let me just show you a few of these, but, again, take some time to, after the webinar, to get acquainted with these,

um, resources you'll find on our website. So, this is the landing page for kidshearing.org, which provides that, a variety of practical resources. The first part of the page, um, places early childhood screening into the larger context of identifying children who are deaf or hard of hearing, expanding the traditional focus on newborn screening to include a focus on identifying hearing loss throughout early childhood.

Now, if we scroll down, this is where you'll find all of the practical resources most relevant to early childhood screening, starting with planning resources. Then, you'll see the area where to, um, access training and, um, you know, which is, um, one of the most important pieces, but you always want to do your planning first. As we said, for nearly 20 years, the ECHO Initiative was funded to provide in person and virtual comprehensive training and evidence based screening, and we worked with thousands of people in various, um, Early Head Start and Head Start and other early care and education programs, and that complete training process is now available anytime you or your staff need it. So, we encourage you to check out that. We know that many of you are needing to know how to get training, so, check out what we have there for, both, OAE and pure tone screening. The website, um, is where you can access the comprehensive training and, you know, some of you may have a group of staff who need training at the same time, while some of you may find that your staff entering your program are coming in at different times and are needing training throughout the year. So, having an online training option available that can be done anytime and at any pace can serve a lot of different peoples' needs. So, um, we encourage you to check that out. Yep?

>>: Can I just interject on training that, um, the training William's referencing is really different than the training that, um, your equipment manufacturer or the, um, vendor that you buy your equipment from, they will be very technically proficient in how to operate the equipment and to turn it on, but the training that comes with with screening children, um, children handling probe fit issues, all of those things to get a successful screening, as well as program management, are

really crucial and key, and that's what William is really referencing here in under the training.

>>: Thanks, Terry. The next part of our website has to do with screening resources, and these are all sorts of good resources to help you prepare for screening, the protocol guides and forms, which we'll be referencing today, how to share results with others, documenting your screening, um, outcomes, all of those things are found there and, then, um, the next thing you'll find on the website are follow up resources, how to track a group of children through the complete screening and follow up process and some tools to help you do that, as well as monitoring your program, um, over time for quality. So, again, kidshearing.org is where you want to go to look for those things. So, make a note of that, kidshearing.org. So, let's put all these resources into context, and we're going to start by giving you a quick overview of the auditory or the hearing system. Terry, you want to take us through this?

>>: Yes. So, um, as many of you, um, may remember from school, there are three main parts to the auditory system. There's the outer ear, the middle ear, and the inner ear, or what we call the cochlea. So, when sound enters the outer ear, it causes the ear drum to vibrate, which then moves three small bones in the middle ear, and this movement stimulates thousands of tiny, sensitive hair cells in that snail shape portion of the ear that you see there called the cochlea. From the inner ear, the sound signal is carried along special nerves to the hearing centers of the brain and, then, the individual experiences, then, the sensation that we call sound. You can see it just moving through right there. Okay, so, while this is how the auditory system typically functions, we can have some exceptions. There can be some temporary issues, like a wax blockage, um, or fluid in the middle ear caused by ear infections that we may discover and get addressed during hearing screening process, but it's key to remember the primary target condition of the hearing screen is the functioning of the inner ear, or cochlea, that snail shape portion of the ear. Now, in some instances, the sound travels through the outer and middle ear, but when it reaches the cochlea, the signal is not transmitted to the brain, and that results, then, in what we would call a sensorineural

hearing loss, and this condition is usually permanent, and this is the primary condition for which we are screening in mass screening efforts, such as we're talking about today. Now, this might come as a surprise to you, but it is, um, it's an important fact for us to all know, that sensorineural hearing loss is the most common birth defect in the United States.

>>: Yeah. In fact, about three children in a thousand are born with a hearing loss, deaf or hard of hearing. Most newborns in the U.S. are now screened for hearing loss using evidence based methods, most before even leaving the hospital, but screening at the newborn period isn't enough. Research suggests that the incidence of newborn hearing loss doubles between birth and school age, from about 3 in a thousand at birth, as you see here, to about 6 in a thousand by the time children enter school.

>>: And hearing loss can occur, um, anytime as the result of, um, infection or, um, trauma. There can be genetics. So, as you can see here, illness, physical trauma, environmental factors, um, and genetics and, so, that's why we want to keep screening, because this is typically called late onset hearing loss.

>>: And that means, simply, that it's acquired after the newborn period. You know, it's commonly understood that language development is at the heart of cognitive and social emotional development and school readiness. Those things drive many of the practices that we see in early childhood settings. Think about how much emphasis is always being placed on early language development; counting the words children can produce, etc. It's also important, though, to note that hearing health is at the heart of typical language development and that, if we're going to be conscientious about promoting language development as apart of our commitment to school readiness, we should be equally conscientious about monitoring the status of hearing throughout this early childhood period. If hearing is compromised, then typical language development will ultimately be compromised as well, and we don't want to wait for a language delay to develop in order to discover that a child has a hearing loss, even if it's a minor hearing loss.

>>: This is why we see so much emphasis being placed on monitoring the status of hearing in young children, so programs like Head Start, which, for years, have served as models of comprehensive health and educational programs for young children and their families, they've required hearing screenings for all of their children, even before we have the, um, excellent methods that we now have to do this.

>>: You know, sometimes, we use the term screening and we neglect to make sure that everyone really understands what we really mean by that. So, as an audiologist, Terry, how do you describe what screening is? Or, in this case, hearing screening.

>>: I think it's easy to think of screening, so, think of it as, kind of, a sorting process, helping us to separate the children who are at risk of having a condition from those who are far less likely to have the condition. So, those in that first at risk group are then followed with additional steps implemented by pediatric audiologists and healthcare providers to continue to refine the sorting process until we've definitively identified or identified that small group of children that actually have hearing loss and, I guess, to be blunt, we screen, because we simply cannot provide a comprehensive audiological evaluation on each and every child. Yeah, so, try not to get too hung up by the term, screening, especially for those of you who are working in, um, early intervention settings, like Part C. I know you don't typically use the word screening as much as you use the word evaluation, but the step is the same. That first step in trying to determine whether a child has typical hearing or not are these measures, these methods that we're going to be talking about today. Screening, or evaluation, followed by appropriate audiological assessment and intervention can dramatically improve options and outcomes for children who are deaf or hard of hearing.

When hearing loss is identified early, we can make sure a child has access to language and, as a result, children who are deaf or hard of hearing are thriving in ways that used to be rare. By providing hearing screening, you can be apart of creating these amazing, life changing outcomes. So, let's take a look at several examples of children with severe to profound hearing

loss, who have had the benefit of early intervention and quality, or early identification and quality intervention. These children are learning, they're thriving, and communicating. So, let's just take a quick look. Those two girls are deaf. They both have hearing aids, they're bilat sensorily deaf and, because of early intervention and the support of technology, they're communicating pretty darn well with one another. Let's take a look at another example. These, um, kids are using American Sign Language as their mode of communication, which their parents chose. They're also proficient communicators. So, let's have a look. See, the idea here is to make sure that children have access to language one way or another. This last example is of two boys who are also deaf, and they'll tell you, um, what technology is supporting their ability to communicate. So, the point here is to be reminded of children like them, that they are our goal. We want to make sure that all children have access to language one way or another, regardless of whether they have a hearing loss, and the way to achieve that is to be fully committed to quality periodic hearing screening. Terry, are you up with me now? Are you able to continue?

>>: I think so, William.

>>: Okay.

>>: So, um, let's talk about these two hearing methods that are used during early childhood. So, if you're responsible for children who are under 3 years of age, then the recommended method is OAE screening, that you'll see on the left here, but if you're responsible for children, if you're responsible for screening children 3 years of age or older, then, historically, as I mentioned earlier, pure tone screening has been considered the recommended method for this age group, and this is the headset screening, where the child raises the hand or performs another task every time they hear a sound that is presented into the ear phone, and you see this method, again, being used on the right. Now, there's growing, um, recognition, I was just going to mention, William, that for a variety of reasons, as common as the pure tone method has been, it may not always be the most feasible method to use with some of these younger children. Research has showed that about 20 to 25 percent of

children in that 3 to 5 age group, um, can't be screened with this methodology, because they just aren't developmentally able to follow the directions reliably, and that's really been our experience as well. So, in those instances, OAE screenings are the preferred method for those children. William, I'm off again here.

>>: Yeah, I am too, Terry. So, one of the things we want to make sure, and we know a lot of people have questions about is whether, um, there are other methods. You may have heard or seen other methods in the past, which are subjective, like ringing a bell behind a child's head or depending solely on a caregiver's perceptions of a child's hearing. Now, don't get me wrong, observations of a child's response to sound, especially a lack of response can be helpful, and we should pay attention to how children do or do not respond to their environment, but these sorts of observations, um, do not constitute a hearing screening, because they're far too crude and unreliable and, frankly, we can do so much more than that because of our current technologies. We also want to make sure that we're aware that, um, healthcare providers have, um, even though that they have incorporated, um, evidence based hearing screening into well child visits, this is not yet a standardized practice, especially for children less than 4 years of age. Some parents, Terry, did you have something to say?

>>: I was just going to chime in, saying that, um, and you're probably going this same direction, but some parents, um, they report with a lot of certainty that their healthcare provider actually did perform a hearing screening, but I think it's really important to understand, um, and I really can't emphasize this enough as an audiologist myself, that routine examinations of ears by healthcare providers should not be mistaken as hearing screenings, and I know that may come as a disappointment to you, as it does to, you know, many of us, um, and parents who are really hoping this is being taken care of during well child visits to healthcare providers, but it's precisely because it isn't yet happening in that context that programs like yours are adopting hearing screening practices, because of that increased recognition of the importance of monitoring hearing, and it's just now so feasible to do it.

>>: Yeah, and, so, unless a healthcare provider and the medical records that you've gotten from them include documentation of ear specific hearing screening results and the screening method that was used, we really should never assume a hearing screening was completed.

>>: Yeah, and another important point to remember is this, is that, well, OAE and pure tone screening highly reliable screening methods, but they're still not perfect, so that means there may be some rare conditions that are not identified through these screenings. So, whenever a parent expresses concern about a child's hearing or language development, even if they've received and passed a hearing screening using one of these methods, that child should still be referred for an evaluation from an audiologist.

>>: So, before we go on, let me say one more thing about newborn hearing screening results, because many of the children that you will see will have had newborn screenings. When children enter your program or system, during that first year of life, always be sure to collect their newborn hearing screening result. If the results are anything other than a pass on both ears, you want to make sure that follow up evaluations have occurred. If you don't see any evidence of that follow up, you'll want to help circle the family back to their healthcare provider to get that accomplished. If you're in a program that requires an annual hearing screening, you can go ahead and use the newborn hearing screening result for that first year of life, but you'd want to re screen after that, because hearing screening is only an indication of that child's, um, abilities at that point in time and, as we said earlier, that can change. Okay, so, now, let's talk about the two screening methods that are responsible for early childhood. If you're responsible for children who are under 3 years of age, the recommended method is OAE screening, which you see here on the left, and there really is no other evidence based method that you'll find out there as an option to that for this birth to 3 population. If you're responsible for screening children 3 years of age or older, historically, pure tone audiometry has been considered the recommended method for this age group. This is the headset screening where the child raises a hand or performs another task

each time they hear a sound that's presented into an ear phone, and you see this method on, um, on the right.

>>: And just, um, a reminder, what I mentioned a little earlier, that, um, as common as the pure tone method has been, um, again, remember, it may not be the most feasible method to use with some of these younger children due to that 20 to 25 percent of those kids in the 3 to 5 age group that can't be screened with that methodology because they just aren't developmentally able to follow the directions reliably. So, again, in that case, OAE screening is the preferred method for these children.

>>: So, at a minimum, what Terry's saying is if you're establishing evidence based practices for 3 to 5 year olds, and if you're considering using pure tone screening, you'll also need to be equipped and prepared to do OAEs on that 20 to 25 percent who can't be screened with pure tones, or, alternatively, you'll need to have a means for systematically referring all of those, you know, that 20 to 25 percent to an audiologist who can perform the screening and, frankly, that can be pretty challenging to accomplish, because audiologists are hard to get into, and screening is not, um, usually the thing they, um, want to make time for.

>>: And, maybe, William, to simplify things, um, a little bit, more and more, um, audiologists are recommending the use of OAEs uniformly with children 3 years of age and older, and it's because it's quicker than pure tone screening, both to learn and to do, to actually implement, and it's far more likely to be a method that'll work across the board, with all children in that 3 to 5 age group that you'd be screening, and it's equally as effective.

>>: If you or your program are still undecided or you're asking this question again about which method to use primarily for children ages 3 and older, we encourage you to carefully review a document we have on our website that compares OAE screening and pure tone screening for this population. So, take a look at that, it's under the very first heading on our website, and I'll come back and show you that in a little bit where you'll find that. Terry, let's dive into OAEs.

>>: Thank you. So, as William said, let's start with otoacoustic emissions, or OAE screening, and as we said, it's the recommended hearing screening method for children birth to 3. It's the evidence based method recommended by the American Academy of Audiology and the American speech language hearing association, known as ASHAler.

>>: So, OAE screening is the most appropriate method to identify young children at risk for permanent hearing loss, because it's accurate, um, it's quick and easy. Most children can be screened in just a minute or two. Sometimes, in as little as 30 seconds per ear. It's a flexible tool that can be used in a variety of environments, including classrooms, homes, or healthcare settings.

>>: And most important of all, it's effective. It's effective in identifying children who may have a child hearing loss or loss in just one ear, as well as those that have a severe bilateral hearing loss. In addition, it can be, um, helpful in drawing attention to a broader range of hearing health conditions that may need further medical attention. So, OAE screening, it can also help to identify children who have a temporary hearing loss as a result of middle ear infections and, again, as we mentioned earlier, although this isn't the primary goal of OAE, excuse me, of OAE hearing screening, it's definitely an added benefit of screening with this method. OAE screening clearly meets the World Health Organization's, um, principles of screening.

>>: So, let's take a look at these pictures for a second. These children you see here are all being screened using the OAE method, and what do you notice about where they're being screened? They aren't being pulled out into an environment that's foreign or strange to them. We can go to them, they are being screened in every day educational, home, or healthcare settings, where the children are already, hopefully, happily spending their time, and those that are doing the screening are, often, people they already know. They're teachers, they're home visitors, health specialists at the program, people they know.

>>: In insidious hearing screening works best when children are familiar and they're comfortable with the adult doing the screening and where they can play with a toy, they can be held, or even sleep while the screening is being conducted.

>>: And, that's right, you heard it, they can sleep while they're being screened, which is a real added benefit for some of those kids in that, you know, 6 months to 18 months or 20 months age range that could be, kind of, difficult to screen. So, Terry, walk us through the OAE screening procedure, would you?

>>: Yeah, yeah. Thank you, William. So, to conduct an OAE screening, we're, first, going to take a thorough look at the outer part of the ear to make sure that there's no visible sign of infection or blockage. After we've done that, a small probe on which we've placed a disposable cover is then inserted into the ear canal, and that probe is in the ear canal delivers a low volume sound stimulus into the ear. Now, a cochlea, or that inner snail shaped portion of the ear, a cochlea that is functioning normally will respond to this sound by sending the signal to the brain while also producing an acoustic emission, and this emission is analyzed by the screening unit and, in approximately 30 seconds or so, the result will appear as either a pass or a refer. Now, every normal, excuse me, every normal, healthy inner ear produces an emission that can be recorded in this way. So, let's look at a video of an actual realtime screening, just so you can see how it can go under ideal conditions.

>>: Yeah, so, the woman on the right is going to be pointing the probe in this little guy's ear. She has the added benefit of a partner adult who's going to help manage this child's behavior. Now, a little boy this age may not really need the help of that other adult, but if he was a year younger, it would really be valuable to have that person there to help his hands be busy and not reach up and get interested in the probe going in the ear. So, let's take a look. This is a realtime screening, no editing. So, that means they got their results already. It was a pass or refer, we don't know. They celebrate either way when they get a result. There, you see the device. Then another result. So, like many skillful tasks, competent

screeners can make it look so easy, and it, often, can be easy, once you've been trained and have had a little practice. To assist screeners in developing all of the different steps of the screening process and developing that as a habit, um, we have, as apart of our training, a skills checklist for OAE screening, and that's available on [kidshearing.org](http://kidshearing.org), and that checklist guides a screener through the OAE screening process, and it's helpful, whether you're a screener or an experienced screener needing a refresher, or if you're a manager, it can be used as a competency based observation tool for those that you're supervising.

So, that's what you see here on your screen. So, we'll show you where you can find those on our, um, website. As we've emphasized, evidence based screening is more than just using a designated piece of equipment. We have to be trained to use that equipment and have a screening and follow up process built around that equipment, but you do need to have appropriate equipment. So, let's talk about this for just a minute. You should be aware that OAE equipment is available from several different companies and in models designed specifically for screening by lay individuals, um, such as most of you who are participating with us today. These are the simpler and less expensive models, basic OAE equipment is what you're looking for and, currently, that costs, and I know you're not going to like this, but it's about \$3,800 for the device. Now, there are also other equipment models intended for the use of audiologists, like Terry, that are designed for diagnostic purposes, and those are more complicated and more expensive, but they may come by the same name. So, you don't need or want those expensive or complicated models, so, as non audiologists, be careful to ask for the simplest version they have as a non diagnostic model. Now, in addition to the cost of the equipment, each time you screen, um, you have to have a disposable cover that goes over the probe, that needs to be inserted snugly into the ear canal and would come in a variety of sizes to ensure a really snug fit. You'll need a good selection of those and, again, they have a cost of about \$1 to \$1.50 each.

Now, I just want to interject here, you know we're not selling equipment. That's not us. We're just trying to help you use this equipment. We know all too well the burden of the cost of this, but it is part of what it takes to use this recommended method. Now, since you'll not always select the proper size on the very first try, especially when you're learning, you could end up using several probe covers for each child you're attempting to screen. So, we always recommend purchasing at least twice as many probe covers as you have a total number of children to be screened. Now, you'll also need some adult size probe covers as well, because during your learning process, as well as, really, on a regular basis, you'll be testing the equipment out on your own ears and on another adult, to make sure it's functioning properly before screening. In fact, when you're being trained, before you even try to screen children, you'll screen yourself and some other adults, so you'll need to make sure you have adult probe covers as apart of your purchase. When you meet with an equipment distributor or salesperson, they may mention, as Terry referred to earlier, that they will offer you training, and it's important that you understand that this training is rarely sufficient to meet the training needs you have. Terry, do you want to say something more about that?

>>: Yeah. You know, um, there's the practical hands on how to screen kids perspective that doesn't come with the, um, training from the vendor and, so, that training to help you get acquainted with your screening equipment, to give you practice in selecting the correct size probe covers, to demonstrate how to insert that probe snugly into a wiggly child's ear, um, all of those learning experiences will teach you how the equipment not just turns on and what buttons to push, but how it actually functions under use as you screen. It'll help you by, first, learning to screen on your own ears and, then, to screen other adults before you take on the challenge of trying to screen children. You should be guided through practices that demonstrate, you know, how the equipment's going to function, um, under less than ideal conditions, so if the individual you're screening moves or makes noises while screening, or if there's noise in the room, things you can do about that. Then, you add that challenge of screening children. So, the learning

process should demonstrate, um, strategies for managing children's behavior while they're being screened and, then, lastly, a good learning process will help you know how to use the information provided on the device to record results and, then, what those follow up steps are when a child doesn't pass the screening in one or both ears.

>>: Yeah, so, we always like to make this analogy; a car salesman at a dealership may train you per se to, about the various functions of the car and everything you see on your dashboard, and that can be helpful, but that person is not going to teach you how to drive or to parallel park, and it's the same with purchasing hearing screening equipment. You'll need another way to learn how to screen and, as we pointed out, one way is to access the online resources that we have on our website and, um, I'll show you again where to do that. Doing that and, if you can, having a local audiologist who can, then, screen alongside you when you are just getting started and can give you some helpful pointers, it's a great way to be sure that you get your training needs met, and this is true whether you need training on OAE or the other method, pure tone audiometry. So, um, be aware that you do, in fact, need to get training, don't attempt to teach yourself. So, just, um, so that you know, on our website, you'll find, um, under equipment resources, um, this table which shows you some of the available, um, different manufacturers' equipment options for you and how to locate them. Um, so, and there's also a criteria for selecting equipment. We had a webinar last week in which we asked, um, all of the participants who are already experienced doing screening, and some of them said they were having difficulty screening children in, um, somewhat noisy, natural environments, and we asked them what equipment they were using.

Now, we don't ever, because we're federally funded, we don't ever particularly recommend any specific manufacturer, but we can tell you that the response to that particular poll was, um, the most common response was that people were having success in those natural environments with this first row of equipment here, those three different devices there. So, um, and that's not to say the others aren't, um, also, um, equally effective. We have had a lot of experience with that second row of devices

as well, and they work really well as well. So, take a look at that, if you're in the position of needing to select equipment. All right, so, we've talked about OAE screening. Let's shift our attention over to pure tone screening now for those of you who may be considering this or may already be using pure tone screening, and we want to point out that pure tone screening is never recommended for children under 3. As we've mentioned earlier, it's the most common method used with 3 to 5 year olds, but even some of those 3 year olds, we can't really successfully screen with that, as we've pointed out. Now, you probably recognize this method, um, either because you already use it or because you've had your own hearing screened this way. In this procedure, musical note like tones are presented to children through headphones, and children provide a behavioral response to that tone, like raising a hand to indicate that they heard the tone. Pure tone screening gives us a good idea of the functioning of the entire auditory system, all the way to the brain, with the child showing a physical or behavioral indication that they perceive the sound.

It's a relatively affordable method, with the screening equipment, in this case, costing \$800 to, maybe, \$1,000. It's a relatively, um, it's a durable and portable piece of equipment, just like OAEs, which enable us to easily transport and use it in a variety of locations. The difference, however, though, and we'll talk more about this, is you have to be, you can't screen in a natural environment, you have to pull the children out into a quiet space, and it also is a piece of equipment and method that a wide range of individuals can be trained to perform. Terry, you want to walk us through how it's done?

>>: Yeah. So, to conduct a pure tone screening, we're going to start just like we did with OAE, we're going to, first, take a look at the ear, we're going to make sure that there's no visible sign of infection or blockage, just like we do prior to doing OAE screening and, then, if the ear appears normal, then, the screener, um, places the headphones on the child's head and instructs or conditions the child in how to listen for a tone and respond by raising a hand or placing a toy in a bucket, a game like that. This step can take some time, because we have

to be sure that the child is able to reliably complete the screening task, but once the screener is, um, has observed that the child reliably responds to sounds that are presented, just as the screener instructed, that's when the actual screening is started.

>>: So, that process, Terry, might take 5 minutes, right?

>>: It might. Yep. We have to make sure that that, um, that that response is, um, listen and respond response is strongly conditioned. Once it is, then, during that screening process, this listen and respond game is repeated at least twice at three different pitches on each ear and, then, we note the child's response or their lack of response after each tone is presented. Now, if the child responds appropriately and they're consistent to the range of tones presented to each ear, that's when the child passes the screening.

>>: So, are you all getting the idea that there's some notable differences between OAE screening and pure tone? There are two especially notable differences in that the process requires children not only to be cooperative, but to be full participants in the process, following directions and responding reliably. As we mentioned, that means completing that additional process that we refer to as conditioning, or teaching the children and, then, carefully determining whether you're getting reliable responses from them before even attempting to screen.

>>: And the other difference between pure tone and OAE screening is that the screening itself is not, um, automated as OAE is. Instead, in pure tone screening, you, as the screener, will need to manually step through the presentation of each tone multiple times for each ear, recording each response. Then, following a very specific protocol, you, as the screener, will determine whether the ear passed or not. With pure tone screening, there's, um, considerably more potential for us as screeners to make mistakes or for screener error, um, that can produce inaccurate results. So, there's a real need for thorough training and oversight, to make sure all screeners are adhering to the prescribed screening protocol. We really can't emphasize enough, um, the importance of training and periodic oversight, as even some of us

experienced screeners will make errors that could inadvertently invalidate the screenings in ways that we might be unaware of. Now, on your screen here, you'll see, this is an example of the actual screening steps that need to be documented for each ear as you screen. So, through the training process, you'll learn all of the steps of the conditioning and the screening process and all of the environmental conditions that need to be monitored and met as you complete, um, a child's screening.

>>: Now, based on these results, the screener determines if each ear passes or not, and the device itself does not produce that result, as is the case in OAE screening. Now, my slides are not matched up, Terry.

(Laughing.)

>>: So, as we go through this process, you will be, those checkmarks indicate how many different manually initiated attempts need to be done on each ear, at each tone. So, you try it at the 2,000 first, then you go 4,000 hertz and determine whether the child passed or not, then 1,000 and, then, you do it on the other ear. You need to get two responses out of four for that particular pitch to pass, and there needs to be passes on every pitch for both ears for an overall screening pass. So, we've provided, also, a screening skills checklist for pure tone screening that walks through all of those specific steps and, um, that's another helpful training tool, as well as an ongoing self monitoring or supervisory monitoring for quality tool that you might want to look at. So, what's the next step, when a child doesn't pass a hearing screening? We've talked about the two methods. Regardless of which method you use, you will eventually have children who don't pass. So, what then? In order to be evidence based, your screening process has to include a follow up protocol for when children don't pass, and we can't emphasize enough that our screening efforts are only as good as our ability to systematically follow up on children who don't pass the screening on one or both ears. So, let me give you a quick walk through of the protocol and, then, we can go look at it more closely on our website. The percentages we're going to be talking about here today are from over 10,000 children, birth to 3 years of age, on whom we've used the OAE method. So, um, the stats we're about to give you are related

to that scenario. We expect children in the, um, 4 to 5 age range to have slightly better pass rates, because they don't tend to have ear infections as often as those younger children do, and they tend to be more cooperative.

So, let's look at the protocol. We're going to screen a hundred percent of the children who will receive an initial OAE or pure tone screening on both ears, and we expect about 75 percent of the children will pass on both ears and will not need any further follow up. That will leave about 25 percent that will not pass on one or both of their ears the first time they're screened and will need to have a second screening in about two weeks. Now, the interesting thing is that, at this point, a good many of the children who didn't pass the first screening will pass this second screening, only about 8 percent will not pass the second screening. These children will need to be referred to a healthcare provider, um, who will do a middle ear evaluation to determine whether there's a wax blockage or an ear infection or some other reason why the child may not have passed and, once the middle ear problem, if there is one, is resolved and you get medical clearance, you'll then screen the small number of children, this 8 percent, a third time, and we expect that less than 1 percent will still not pass that third screening, and those children will be referred to a pediatric audiologist for a complete audiological evaluation. So, although a small subset of children will, indeed, need follow up referral and further screening after the initial screening, we have used this protocol in thousands of early childhood settings and have found that most programs find this to be feasible to implement. It helps children get the medical and audiological attention they need, while it also minimizes the number of unnecessary referrals for healthcare providers, to healthcare providers. So, we're balancing the need to find children, but, also, not to over refer. Once you're underway with your screening program, you'll want to check, um, with these particular pass and refer rates, to make sure that yours are similar and, if they vary considerably from this, you'll, probably, want to get some technical assistance or, maybe, some follow up training. So, this is another illustration, just overviewing what I just said, that outlines the screening and follow up protocol, and this is available on our website, it's built into the training

modules that you'll find there and, just as a reminder, this protocol is used regardless of which screening method you're using, OAE or pure tone. It's exactly the same process within each method. The only difference is that the percentages of not passes, maybe, somewhat differs with different age groups and with the pure tone method, but this shows you the protocol overall. Terry, there's an exception, right, to this protocol? Do you want to talk about that?

>>: Yes, and we touched on it earlier, but the exception is that whenever a parent or a caregiver expresses concern, so, they have a concern about a child's hearing or their language development, that child should be referred for an evaluation from a pediatric audiologist, even if they passed a hearing screening, and this is true because, if you recall, um, you know, we don't have that perfect hearing screening method, they're not a hundred percent accurate or perfect and, so, to be on the safe side, whenever there's an explicit concern about hearing or language, make a direct referral and, of course, you can screen the child and send that result along, but make the referral regardless.

>>: Thank you. All right, so, [kidshearing.org](http://kidshearing.org), most important thing you can remember today is our website, because all of the things that we talked about today are available and explained at greater length there. It's also where you'll find the recording of today's webinar. So, we invite you to go check out the resources you'll find there. Let me review them again and, while I'm doing this, um, Gunnar is going to open up our Q & A field, so that you can type in some questions or comments. When we're done with questions, we're going to also open up, provide a link in the chat for you to give us a quick evaluation of today's webinar, which will also produce a certificate of attendance at today's webinar, if you need one of those. So, before you run off, if you need a certificate for today, be sure to look in the chat for that. So, this is our website, our landing page.

That top portion is general information that you might want to look at and, then, you'll go down to where you see planning resources. This is where you'll see the big picture resources. For those of you who, um, may have gotten interested in my

comment about if you need to decide about what method to use for 3 to 5 year olds, OAE or pure tone or both, in that big picture resources drop down, you'll find a document there that compares the two, that will facilitate a good conversation, maybe with your health services advisory committee, a consulting audiologist, or others who will help you in that decision. If you need an audiologist, which we encourage all of you to try, if you can, to partner with an audiologist, you'll find a way to do that through that next drop down. The first recommendation we give, ask your colleagues, there may be people who know of a local audiologist and, then, the second is to go to your state's Early Hearing Detection and Intervention or newborn hearing screening program at the state level, and we provide a link to your state's person right there, they know all the audiologists, the pediatric audiologists in your state, and a pediatric audiologist is who you really want. The next part is screening equipment resources. So, you'll find that table there, along with criteria for selecting equipment and other things related to, um, equipment needs.

The next category is how to access training, both for OAE and pure tone. So, check out that. After you've got your planning steps done, the next part will be to access training. The next portion is all of the nitty gritty stuff of actually doing screening on a daily basis, preparing for screening resources, a checklist of all the materials you need, the protocol that we just went over, we have forms that match the protocol exactly, so you won't ever skip a step and, then, resources for sharing your results, letters to parents, referral letters to providers, all of that is there, and some of our resources are available in, both, English and Spanish, so, check those out. Oh, under the preparing for screening, you'll also find letters to parents explaining your screening methods. The next, um, is follow up resources, where you'll find, um, a tracking tool that is really useful for tracking a group of children through the screening process and, then, other resources for monitoring the quality of your screening efforts. So, have a look at that. Remember, if you're a Head Start program, you can also get resources from Head Start's technical assistance, um, centers, so, that's how you can access them as well. So, remember these three groups of children. This is what we're really talking

about. You may not have ever thought of it quite like this, but monitoring the status of children's hearing is central to quality early childhood programs that are committed to language development and school readiness. When children with hearing loss are identified and connected with the intervention resources that they need, they can thrive, and you can have the satisfaction of knowing that you were part of that outcome. So, what questions can we help you address?

>>: So, William, I see the first one here on, um, calibration. Can you speak to calibration of equipment? How often and challenges in remote areas, such as Alaska? Really great question and not one that we really touched upon, but we recommend your equipment be calibrated annually and, of course, you'll be wanting to do a check on your own hearing or someone who has a known result and check their ears before every screening session, just so you know that that equipment's working, that you screen an ear, it has a known result, and you get that result, um, just as a quick daily check, but we recommend an annual calibration for the equipment. I know that that is hard in rural areas, um, and, um, one of the things in rural areas, sometimes, is if the person doing the calibration, if they need to take the equipment for any repair, um, see if you can address the option of getting a loaner piece of equipment, um, while they're working on your equipment there, but annual calibration with daily checks to ensure the equipment's working before every screening session, um, and good relationship with, um, your vendor or the company that provides calibration, so, hopefully, they'll work with you on loaners and other ways to make sure rural setting work a little easier.

>>: One of you pointed out that when you type in [kidshearing.org](http://kidshearing.org), it actually comes up in your address line as a subset of [infantehearing.org](http://infantehearing.org). You're in the right place. [Kidshearing.org](http://kidshearing.org) is a subset of [infantehearing.org](http://infantehearing.org), which, um, focuses on overall hearing screening and, so, if you type in [kidshearing.org](http://kidshearing.org), you just get right to where you want to be for early childhood screening resources. Terry, the next question, if a child needs a complete audiological evaluation,

but does not have health insurance, are there resources to help families with the cost?

>>: Yeah. Thank you. That's a great question. There should be and, again, there may be rural challenges with this and access with distance, but, um, most state health departments, their Early Hearing Detection Intervention program, their EHDI program should work with and have a listing of places where, um, the audiological evaluations can be done and, so, if I use my own state, for example, um, there's a listing of places and cost and those that will work with, um, people that do not have insurance and, then, through, um, you know, state provided services, they can be provided at no charge. There's also, um, you know, the healthcare systems, if you want to, especially if they're not for profit, they are, um, required by the Affordable Care Act to have financial assistance for those that are, that do not have insurance and, so, um, if you do not have insurance, I would specifically ask if they can apply for financial assistance with that, but I would double check with your state EHDI program for a listing of service providers and the data they have on cost for those.

>>: So, the next question is how do you decide when a child who is 3 years old or older needs to do OAE screening rather than pure tone? What would you see in a child that indicates that pure tone is not appropriate I'm going to let Terry expand upon this, but the first thing is that that is apart of the actual training. We're not going to be able to completely answer that question here, but, Terry, give a preview of how one would know.

>>: Yeah, so, the first thing that we look for is does the child have the ability or are they able, in the circumstances you're in, to understand your instructions and to participate in that. If they're not, that's going to be the first thing that you'll look for and, um, then, there's a lot of strategies that we would look for there. It could be, um, you know, the inability to condition can be related to a variety of factors, such as language barriers, um, developmental stage and, um, and those kinds of things, but the primary thing is being able to see if they can understand and participate and be conditioned and, if they can't, we need to have our backup method or strategy ready.

>>: The next question is Floridian teacher of the deaf and hard of hearing for a public school system. Speech therapists and nurses usually conduct the pure tone screenings. Would it be beneficial for me to be trained, and would it be beneficial for the county to purchase an OAE machine? Um, I'm going to start off with part of the answer, but, Terry, you can chime in. I am so glad that you're on here, um, Shelly. I would, first, um, encourage you to make sure that those who are doing pure tone screenings have been adequately trained and that training refreshers are being done, and I'm emphasizing that because we have seen, you know, a, sort of, common drift in peoples' skills, particularly around pure tone screenings, because it is all manual and, um, people can just make mistakes, where they're passing more children than they should be. They may be thinking they're doing children a favor by helping them and not realizing that they're helping them, so, really, getting a tight grasp on the importance of adhering strictly to the guidelines of pure tone screening is really important. As for the second part of your question, would it be helpful to have, um, an OAE device and for you to be trained on it, well, I'm going to say yes. Terry, what do you think?

>>: I would say absolutely. It's wonderful to have that, um, second backup for the kids you're serving. I think it's just doing them a great service.

>>: Great. The next question reads, Floridian speech pathologist and work in early intervention. All of the students I evaluate have language concerns. Should we screen during the evaluation, even though you recommend that we also refer them to a pediatric audiologist? In our educational setting, we have to be careful when we recommend a private setting for follow up. Terry?

>>: Yeah, I love this question. So, the first part of it, should we screen during the evaluation, yes, absolutely. That is our hope, um, that could be a standard practice, standard of care during a speech and language evaluation, that a hearing screening was part of it and, so, if you could do that, um, that would just really move that whole process along for these kids and, um, so, um, emphatic yes on my part.

>>: Excuse me. I want to add one thing. In our earliest intensive data collection of the ECHO Initiative, we found that many of the children that were ultimately being identified with a hearing loss as a result of the screenings, hearing screenings that were being done in the Early Head Start programs we were working with were already enrolled in early intervention programs and getting speech therapy, and nobody had checked their hearing. That doesn't sound right, right? I mean, it seems like it's putting things in the wrong order, to start doing speech therapy or language therapy interventions with children when we haven't, first, established whether their hearing is compromised. So, once again, yes, yes, yes. We are big advocates of getting, um, evaluations of language paired with hearing screenings or hearing evaluations, particularly in Part C early intervention programs. Those things just sensibly have to go hand in hand. Okay, the next question. I work with Early Head Start home based families, and I'm wondering if anyone else is experiencing more families not wanting their children hearing screened or re screened. It is as if they don't understand the importance and cannot understand, cannot stand to upset their child in any way, even for a moment. Um, great question. We don't have a way right now to instantly poll everybody about this, um, but what it does underscore is the importance of family education, right? And we do have some tools on our website that you should look under preparing to screen, where there's some information for families about the importance of hearing screening, underscoring those main facts, that hearing status of a child can change, and they can change without us noticing. You know, children will accommodate, to a certain degree, and, kind of, trick us into not knowing, um, that they're actually accommodating for a hearing loss.

So, um, check out those resources. Thanks for sharing that observation though. Um, so, let's see. Some of you are asking about a certificate of attendance today. Look in the chat field, there's a link there for the evaluation of today, and that will generate a certificate of attendance. Um, Terry, the next question, late onset hearing loss attributed to infection, trauma, environment, and genetics. Is that the order of the causes most frequent to least frequent? Which specific

infections can lead to hearing loss? Can you address that, Terry?

>>: Yeah. That's a great observation. That was, um, not necessarily the order of causes. If I were to just informally look at these, I would say that the causes would be, um, genetics, infection, and, um, would be, you know, more at the top of that list, but, um, so, no, they weren't necessarily listed in order of, um, you know, the most common causes. Then, infections can get, um, into, um, different types, so you can have, for example, CMV infection that can cause, um, hearing loss either at birth or later and, then, you could also have a different part of the ear, with chronic middle ear infections that causes what we would call a conductive hearing loss or a problem before the sound even gets to the inner ear and, so, um, you can have infection that occurs at different, um, parts of the system and at different stages and times of life.

>>: The next question, Terry, is do you always need a referral from a healthcare provider to see an audiologist?

>>: So, that's going to depend on, um, what the, um, coverage that that individual or family has and, so, it will vary on health plan. Most state Medicaid programs, um, are, require a referral, so, um, I would say, probably, more often than not, a referral may be necessary, but, again, it's going to be plan dependent.

>>: The next question is I see some people using a probe, or I think they mean probe cover that is too big. In those cases, would you get a false reading?

>>: So, um, that's a great question, because this emphasizes that probe fit is, probably, the most critical factor in getting a good, um, screening done, getting your OAE, um, accomplished and, so, we want to have a good probe fit. Generally, the rule is we want to have the largest size probe that will appropriately fit into that ear canal, so we get a good, snug fit, and the probe stays stable in the ear without you holding on to it. Now, if we have one that's too small, it will be loose, it could fall out, noise could get in, and you, probably, won't get your OAE completed. If the probe is too big, it will also be so large that it can't quite fit in there snugly. The most common thing

I see with a probe that's too large is we just can't quite get it in, and it wants to fall out, um, easily. The second part of your question is on results. So, if we get a refer, we know that we may, we, probably, want to try again and try a different size probe. A refer, we don't necessarily know why that is. Is it due to noise? Was the child chewing or sucking? Did I have a poor probe fit? So, we want to try again, but when we get a pass, that means the machine has actually detected and measured that emission, so the pass result, um, is a result that you can take.

>>: Terry, the next question is what if you can't get a child to cooperate for a screening?

>>: Yeah, that's a great question. That relates to that, all that training, um, those training issues and the, um, the reasons to have good training is because we want to talk and train about how we can, um, work with children, um, to get them successfully screened and, so, there's a lot of varying things that we can do, but we may, um, without going into all the specifics, um, but there are strategies we can do with, um, getting help with a caregiver that they know and are comfortable with, we can, um, come back again, and we can desensitize over a couple days. Um, lots of varying things that we can try to do and, then, it's also, if you're experienced, you'll learn when to call it and when it's time to refer. So, um, I apologize, but we could, um, we could almost do another webinar on that question. It's a great question.

>>: Yep. The next question is I'm curious if there have been times when a child has failed a screening, but, later, is found to have autism or sensory processing disorder and not a hearing loss. Are there resources for this scenario?

>>: Love that question, because that, often, those are the kids that would fall in that 20 to 25 percent of pure tone screening, where we couldn't get the screening done or we couldn't get reliable responses, um, and, um, but if we're able to, um, work with them, we can, often, get an OAE complete on those kids and be able to at least screen, um, up through the level of the cochlea and get a response and, so, um, we want to keep trying

till we can rule out hearing loss as, um, part of the things that they're dealing with.

>>: The next question, we're going to go quickly through these remaining ones as we can. We're getting close to the bottom of the hour. If you have to run off, um, be sure to check the chat for the link for the evaluation and the certificate generator. It's one link. Okay, Terry, children in Early Head Start, where I work, are given a functional vision and hearing screening by a trained staff member. If the child doesn't pass, they're monitored and re screened or referred. Is this sufficient? Or how do I get, um, how do I get a copy of the newborn hearing screening? Well, I'll answer the first thing. I'm not going to speak about vision, but a functional hearing screening is not considered evidence based. OAE screening for birth to 3 year olds is the only evidence based screening practice that you will find in the literature that you can really defend as evidence based. Terry, do you concur with that?

>>: Yeah, absolutely.

>>: Um, as far as getting the newborn screening result, um, it should be in a child's health record. So, you would ask for that from a child, where you would get, like, their immunization record or any other things like that. Um, the next question, Terry, is, in my area, the majority of doctors use an objective tool to screen for hearing and/or a subjective tool for hearing, um, screening is not done, because the child does not need it. Um, our program currently accepts our doctors as the screening tool. What are your thoughts? Um, what we would say to that is that we never consider a hearing screening that has been done that is subjective as a completion of a hearing screening regardless of who has done it. That just because it is a doctor doesn't mean that it, suddenly, is a more valid screening. Again, OAE screening is the recommended method. Now, if you're getting results of that from a healthcare provider, you want to make sure that you have documentation that it was an OAE and the results on each ear, not just an overall, but a left result and a right result and, with that, you would know you had a screening, that it was completed. Now, if there was a non passing result, you would still need to do the follow up steps. So, um, we know this reality that you're talking about, it's

familiar to us, but we always encourage people to recognize that, you know, you're the front end of a movement here that is understanding the value of evidence based hearing screening, and not all healthcare providers understand or support this process yet, but you can help them understand the value of that. Everyone, we're at the bottom of the hour. 90 minutes has passed, so, we're going to have to end for today. If we didn't get to your question, feel free to contact us through our website at [kidshearing.org](http://kidshearing.org), and we'll happily respond to you there.

Remember to go to [kidshearing.org](http://kidshearing.org), where you'll find all of our resources, including this webinar recording for you to review again, to advance forward to, if there's a particular slide you want to look at again or a statement we made you want to hear again, and share it with others who may not have been able to attend live with us today. Thank you to our captioner, our interpreters, Terry, thank you, thank you, Gunnar, for your technical support, and thank you to all of you for all that you're doing to make sure that, as apart of your commitment to children's language development and school readiness, that they are having their hearing carefully and conscientiously considered periodically throughout this really important language acquisition period in life. Thanks, everyone.