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National Center for Hearing Assessment and Management
Completing Hearing Screenings with Children Who Are Difficult to Screen
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[Please stand by for captions]

>> WILL EISERMAN: As you settle in for today's webinar, you'll want to adjust your volume to your liking on your computer speakers or headset volume settings. You also do not want to select full screen mode as that will eliminate some of the displays that we have prepared for today's presentation. So do not select full screen mode. Once again, we'll be starting at the top of the hour.

While we wait to get started, I posted a poll question on the screen just to get a little more information about the perspective that our audience members have today. The question is: With what screening method are you seeking guidance on difficult to screen children? OAEs, Pure Tone, or both.

For those of you who have just signed on, you're in the right place for today's webinar, completing hearing screening on children who are difficult to screen. You'll notice that there's a poll question in the middle of your screen. If you haven't already, take a moment to answer that question about what screening method you are seeking guidance on difficult to screen children. It's good for us to know the perspective that you're bringing to this webinar today. This is a coffee break webinar. We'll be presenting for 15 or 20 minutes, and then we'll open up for questions that you might want to have our presenters today respond to.

You do not want to select full screen mode today as that will prevent you from seeing all of the displays prepared for today's webinar, so do not select full screen mode. We'll be starting here in just a couple of minutes. You're in the right place for today's webinar, completing hearing screenings for children who are difficult to screen. This is being brought to you by the early childhood hearing outreach initiative at Utah State University. Terry, are you still there?

>> TERRY FOUST: I am, William. Thank you. Do we still sound great?

>> WILL EISERMAN: I'm noticing a slight delay when I move -- when I think I'm moving things around from when they actually occur. So we'll just be mindful of that as we progress today.

>> TERRY FOUST: Thank you.

>> WILL EISERMAN: We have people signing in at a fairly rapid pace right now, so we'll hold on for just a minute or two more and then we'll begin. I'm thinking if you have just signed on, you're in the right place for today's webinar. Do not select full screen mode as that will prevent you from seeing all of the displays that we have prepared for today's presentation. So do not select full screen mode.

And if you haven't already, take a moment to complete this poll question in front of you. Terry, how about we get started?

>> TERRY FOUST: I'm ready. Thank you.

>> WILL EISERMAN: Okay. Very good. I'd like to welcome everybody to today's webinar that is entitled completing hearing screenings for children who are difficult to screen. My name is William Eiserman. I'm the director of the echo initiative. I'm joined by Dr. Terry Foust who is a pediatric audiologist who has worked with the ECHO initial Ty for a number of years. Do you want to say hello to everybody.

>> Audio recording for this meeting has begun.

>> TERRY FOUST: Good afternoon, everyone. I hope we enjoy our time. As I was preparing, I had so many ideas. I hope that I'll be able to convey that and not talk too fast. I'm going to ask William to help me stay on track with that.

>> WILL EISERMAN: And I'm just -- I'm noticing that the slides are not advancing the way they typically do. So -- because I've advanced to the next slide just to see if it would go on, and it has not progressed yet. So this is a little cumbersome, I'm afraid. There it went. That was about a 30-second delay. So --

>> TERRY FOUST: I'm going to try to advance it back just to see if that goes any faster.

>> WILL EISERMAN: Okay. Sorry, everybody. We're just -- we're dealing with a slight technical challenge here. There you go. And what happens if you push it again, Terry? Yeah, it didn't progress.

>> TERRY FOUST: I have the next slide on my screen. Do you?

>> WILL EISERMAN: Now I do. We will proceed. As we get started, I just want to acknowledge that it's -- it's really wonderful to see so many people who have signed up for today's webinar who are concerned about making sure that every child that you are intending to provide a hearing screening for is in fact able to be provided with that hearing screening. And so our goal today is to provide you with a variety of things that you can consider doing when you -- when you do confront a challenge in screening children for hearing. And also what to do after you've tried all of those things and you still have not been able to successfully screen a child.

So we're going to address both of those questions today. So I'm going to invite Terry Foust who, again, is our pediatric audiologist and speech language pathologist who is our primary presenter today. Terry?

>> TERRY FOUST: Great. Thank you, William. I want to start today by just talking about, you know, the difficulty screening challenging kids. We acknowledge that that is one of the biggest challenges in conducting a screening program. But I wanted to start today by emphasizing that our goal is to complete a hearing screening on every ear for every child. While many children are difficult to screen. I just wanted us to all remember that cannot test is not a complete hearing screening and that we've not really answered

that question on whether -- is at risk for hearing loss. I just want all of us to remember that a hearing screening is not complete on every child until we have a pass result or until we've had an audiological evaluation and gotten those results back.

Given this, I wanted to talk today about how to get completed screenings on every child. This really applies to any method of screening, whether it's OAE screening or screening using Pure Tones and screening a child under headphones. So the second thing that I'd like to mention before we talk about strategies is that when children are hard to screen, sometimes it's easy for us to want to rely on the previously known hearing screening results, especially if they were a pass. And I just want to caution all of us not to really -- to not fall into that trap because while most children in your program probably had normal hearing screening results when they were screened as newborns, hearing can change at any time. And so in light of this, I wanted us to just remember three things here.

First is when a newborn hearing screening -- while a newborn relied upon just about a year, six months to a year, again, as I mentioned, hearing can change at any time to progressive loss, it can be normal, it can get worse. It can change due to illness or injury. And these things happen so often that the incidence of hearing loss can double in children from birth to school age. The second thing I wanted to mention is that an ear check is not a hearing screening or a hearing test in most cases. So when a child goes to their medical provider and that provider looks in their ears, they're really checking the physical structure and the parts of the area that they can see to see if there's anything that looks abnormal, such as a visible ear infection. And they may do a test of middle ear function that can help diagnose fluid in the area or an infection, but most providers do not have OAE equipment or the capacity to test hearing itself.

So when you see on forms on medical records that ears are normal, that usually just means that the physical structures of the ear appear normal and that there's any -- that there's an absence of any visible disorder. So what that means for us is that even after a medical evaluation, hearing itself needs to be -- needs to be screened. And that's why our protocol requires a third repeat screening after medical clearance by a provider. And you can see that protocol on our site, kidshearing.org. Now let's -- now that we know that we need to do our best to get a complete screening on each child, I want to move to talking about screening children that are difficult. So let's talk about who they are and why they may be difficult to screen and then I want to talk about strategies for screening them. And then we'll close talking about making and following up on referrals to audiologists for that very small group of children who we may need the expertise of an audiologist to determine their status.

So who are these kids? Let's talk about who they are. So first of all, they're often the youngest children in our centers. And that's an important thing to note because when we talk about Pure Tone testing or Pure Tone screening, we know that that method of screening is really more appropriate for older children ages 3 and older. Even then, some of those children are not able to complete that type of a screening for some of the reasons we're going to talk about here. So keep in mind that when we're talking about young children, we're probably going to be talking about strategies -- or we are going to be talking about strategies to help complete that screening using otoacoustic emissions or OAE screening. When a child's a newborn, they'll spend most of their time sleeping. We almost always find them easy to screen while they're sleeping. But then as they get older, the age range from six months to 2 years can be really fragile with wiggles, hand grabbing and pulling and lack of impulse control.

And then as they get older at about 20 to 24 months of age, they'll start to improve again. They begin to get some impulse control. They start to listen and obey instructions and they get easier to screen. And again, that's in general. But there's some exceptions, and that's going to be developmental age. Some children will be developmentally delayed and they won't be age appropriate and in line with their chronological age.

[Audio breaking up]

-- not only can make OAE screening difficult. Like I mentioned before, that's going to affect even with older kids -- they'll be difficult to screen using Pure Tones. Now, some children will have extreme shyness. With strangers as well as prolonged stages of separation anxiety from caregivers. And that can result in they're fearful with you as a screener. You'll be perceived as scary and as a stranger. Some other children will have had adverse experiences with their ears prior to your screening. Due to having middle ear infections. And they've had -- probably had numerous ear checks with an otoscope or ear light as well. They could possibly have had other things done to their ears such as having earwax removed. All of these things can be uncomfortable and cause them to be sensitive and to anticipate that any -- become pretty resistant to having their ears touched.

And now other kids may just be uncooperative in general. And so it's important to differentiate here that Pure Tone screening may not be an appropriate screening method for children from birth to 3. So now let's dive right in with some strategies for young kids. So the first one I want to talk about is screening while a child is asleep. It's one of the best strategies you can use with young children. There are several things that you can do in this area. One is you can screen your babies and your young children during their nap time, either their nap time in the center or what their usual nap time is at home if you're home based. You'll want to ask their daily caregivers about the best time to screen, and you'll want to work with them to page or text you or contact you if they have the child in a deep sleep.

Now, many children will sleep well in the car. And so I would work with a parent to go to the car and screen them. Often as participants arrive in the -- parents arrive in the parking lot, we've talked just before they've got there, we'll run out and screen them while they're still in their car seat to avoid taking them out, waking them up. We've even screened children while we've gone around the block in the car in order to try to keep them asleep. You can also work with parents on home visits to manage their wake and sleep schedules. So you can have them wake them earlier in the day. You can have them perhaps keep them awake longer or awake through their normal nap time longer so they'll sleep well for you to screen when you arrive.

Now to help a child who may be going in and out of sleep or they -- when you start to place the probe in their ear, they start to wake up, you can use an oral distraction or a pacifier. Oral distractors can be useful with young children as well. If a child is uneasy about being screened but they can be soothed by a pacifier or a snack, then -- I'm sorry. I'm just pausing for a moment to ensure that the slides are coordinate the with me here. Great. Okay. So we're talking about the last bullet on this slide which is oral distractors. As I mentioned, if you have a child kind of going in and out of sleep, you can use that. And they're useful, again, like I said, with young children in general. If they're uneasy about being screened and you can soothe them with a pacifier, even a snack, a Graham Crack error a cookie, you can go ahead and attempt to screen while that child is sucking or chewing.

We know that that's less noise, but it's less noise than if the child's crying. One nice thing about the OAE equipment, it will pause. It will pause when there's too much noise and then it will really -- it will start to resume when it's quiet. If you get a pass with noise, you can consider that a valid response and -- and take that pass. If you get a refer, then you want to keep trying. Now, many other children are just uncooperative because they're shy or fearful of the screening or fearful of new people, screeners no matter what method of screening that you're using. So one of the best things you can do here is to socialize the hearing screening to the child's peer group. Their class or their family if it's home-based. Prior to you actually having the screening session. Here you want to introduce hearing screening as positively as you can. And there are several things you can do to facilitate a positive perception such as creating as fun a feeling around screening as you can.

You can do this by -- and it's really -- this is really an important point. We'll talk about it a little bit more, but you want to use positive terms about screening and introducing it to the class prior to the -- the session. So let's talk about some strategies you can do to help create a fun feeling. So one of the things you can do is to prepare the children in the center and classroom staff by having them watch the listen up sing along video or play other listening games prior to screening. With these types of games, you want to go ahead and encourage ear touching. Have them touch their own ears. Eventually to working towards where they'll let you touch their ears during the game. And I want you to make it as fun as you can. The more people that participate in their peer group and the trusted adults the better. You can have parents play the same videos and games at home as well.

So what I'd like to do here, we'd like to show you what the listen up video is like. Again, you'll be able to find that right on our website, kidshearing.org. Let's go ahead and listen to part of this.

[Video playing]

So you can see how you can make that a great group activity about ears. Now, you can also work to familiarize the child with the probe before you ever attempt to insert it into the ear. And you can do this by having that probe and you can touch it to their leg, their arm, their hand and their cheek. Sometimes I just start out -- I have them touch it, I bounce it like a bunny rabbit up their arm and touch it, I touch their cheek, and just depending on how they're responding, I can try to screen right then or I may just stop and do another session a little later to help familiarize them with the probe.

You can also get them to help you pretend to screen a toy doll or a stuffed animal. But I think it's also really helpful if you screen a parent or one of the teachers or staff first. So that they get to see someone they trust being screened. And you can do these strategies several times over several days as you try to socialize the hearing screening with them. Now, one of the things we want to avoid is cueing a child in that there's a possibility that screening could be uncomfortable or it could hurt. Because what we're doing is then we're right then creating some possible uncooperativeness due to fear. I think we've all seen where once the hurt is mentioned, then child's suddenly aware that that could be a possibility.

For this reason, we want to avoid all words and phrases that refer to fear such as we're going to test your ears or it won't hurt. Instead, we want to really -- [audio breaking up] we want to use phrases like let's listen to the little bird or I hear a little mouse or it's your turn to hear it. But keep it all positive. And one last note here is that it's very helpful if we tell the child what we're doing, but we don't ask them. Because if

we say, can I screen your ears, then we've opened the door for a no and that's usually a no that that child wants to stick to. So we don't -- we don't want that. Now, with children that have -- this is another category that can be difficult. These are children that have had a history of middle ear disorder or middle ear infections. And in line with the concept of hurt, that really applies to this group as well. Because they can be especially reluctant to be screened. Typically as I mentioned before, they've had their ears checked multiple times. And often it's uncomfortable or perhaps hurt due to the necessity of getting a good, deep look in their ear with the ear light.

So again, for this reason, don't use phrases that can induce fear or a memory of any prior uncomfortable experience. So we don't use the word "hurt."

I don't even tell them "I want to look at your ears" because I just try to stay away from that. Now, with children with a history of middle ear disorder, there's several other things you want to consider. The first one is that first bullet point. I have really found that children can sense tentativeness or uncertainty. That can scare them. Sense your lack of confidence and then they become unconfident or not confident in your ability to -- to handle their ears. There have been lots of kids, even with known results, so you can get practice. And just practice, practice with that so that you can approach screening, probe placement all of those things with confidence. With this group of kids, you want to spend some time to desensitize ears. What I mean by here is you want to work with touching the child's ears for several days to a week prior to the actual screening. And to do this -- to do this, let them touch the probe. Let them touch the end of that probe, see that it's soft. You can explain to them that it's like an earbud to listen to music. You put it in your own ears and react positively to the sound, I hear it. Then let them try it.

I found that you can use even a set of earbuds initially that you're playing a familiar tune or a sound through to work on this. But the purpose is to disassociate the probe with the ear light or the otoscope that they've been used to having their ears check with. I would also recommend that you do not attempt to screen during times of a known infection or when they're ill. So if you know that they're -- they have an ear infection, they're being treated, you -- you don't want to associate the screening with illness or pain. You can work on desensitizing games and things during that time period, but let's wait until they're well. And then the third bullet here I think is really helpful. And that's to use model children first. So if you're working with a group of children, you want to ask the teacher for suggestions about when a child might be -- which child, excuse me, would be the most cooperative. And that's the one that you're going to want to screen first. You want to screen them first so that you'd have a real public good example for that child to observe, and that sets the tone for the other children to follow.

Some of the times these kids with a history of middle ear disorder may need more time to watch other children participate in the process before you attempt to conduct their screening. Now, if a child remains uncooperative, you may want to try to have a different screener attempt to illicit cooperation. I've seen this happen many times, and I use this strategy myself where I've tried and tried and I just haven't been able to get that screening complete, but I have a colleague or someone else come in. And that sometimes works and allows us to get that screening completed. So other screeners is a good strategy as well.

Okay. So now let's move to some good overall strategies for uncooperative children in general. And these are strategies that will apply across all the other groups as well. First of all, I want to emphasize the role that a good probe fit has in getting a complete screen screening with otoacoustic emissions or OAEs. To get a good probe fit,

I would suggest that you, number one, use a foam tip, if possible. And the reason I say that is I find foam tips take less tries to get a fit. And the less attempts you use to get a fit, then that means there's less manipulation of that child's ear. We only have a small window of opportunity to fiddle with that ear, so I don't want to use it up trying a lot of different sizes. So that's a tip that I use.

The other is to use the largest sized tip that will fit. This also helps get a good stable fit with the probe, and it helps to keep external noise controlled.

>> WILL EISERMAN: Can I just interject that -- to be aware, however, that you can only use the foam or the probe covers that are intended for your particular device, your brand and model of device. So if yours doesn't come with a probe that is a foam tip, you're not able to use those even though they're on the market for other instruments.

>> TERRY FOUST: Thank you. That's a great reminder. The tips are calibrated to the equipment that you have, so you do need to use the ones that come with that equipment. Fortunately, more -- most of them do have that option, but some of you may have equipment that does not. So keep that in mind. The other thing I would do is -- again is practice. You need to practice being efficient in placing the probe correctly. And, again, that -- that has to do with when we're screening difficult children, the more quick and efficient we can make it, the more likely we're able to be successful. And this takes practice. Again, I'm going to recommend that you practice as much as you can but it's well worth it.

Now, having a good fit means that the probe is self-seating. So you don't hold it. And that's key, not only to get an accurate test, but also it keeps your hands free so that you can work with equipment and to keep the child distracted. So there's a lot of -- you know, you need that probe seated well and you don't want to hold it in place to get it accurate. You also want your hands free, especially with difficult kids, so that you can change toys in and out, you can distract in the various things that will help you to complete your screening. I do want to reference all of you to the -- the website because we have some great probe fit examples and video clips on our kidshearing.org website. So please use those as a reference to review.

Okay. Now once you have a good probe fit, you may need to work to keep the child's hands away from the probe. You're going to want to redirect the child to play with a toy or an object. Sometimes even just having them grasp your finger or hand will work. You want to use praise and rewards to reinforce cooperation. Once an ear is completed, reward that child with praise. And if desired, you can give them a sticker or other rewards. You also want to let them see other children being rewarded as an enticement. And then you want to make sure that the same praise is given no matter outcome is, whether it's a pass or refer.

Now, screening in groups can be really helpful. It can help some children who might be fearful to become more comfortable with the process. As long as they're seeing others are having a positive experience. So you have to manage that -- if you're screening in a group setting, you want to really manage that to where you screen your children most likely to have a -- have and demonstrate a positive experience first so they get to see that. You want to be careful because it can backfire sometimes if -- if somebody else has a bad experience and the rest of the group doesn't want to follow. So screening group consist be helpful, but you'll want to manage that well.

Now, screening in teams is probably one of the most helpful things you can do if you -- if you can do that. That's where you can have one adult manage, play with

them, they can change toys and distractors, they can keep their hands busy, while the other one can be focused on completing the screening.

Now, quickly let's talk about the use of toys and distractors. This can be a real game-changer in completing hearing screenings. Interesting toys can buy you just the right amount of time you need to get your screening complete. But I want you to consider when you make -- when you collect the toys for screening, some things -- some factors when you choose them. You want to use interesting, but easy to use toys. You can't -- you don't want to overly complicate it because you're moving quickly and fast. It's helpful to have toys that have several stages of interaction. So what that means is that you know, you might have a toy you push a button and it lights up first. Then the second stage might be that the toy vibrates. But you have several -- you don't have to change the toy because it has several levels of interest that are built into it. That's really helpful. Another one that's simpler is like blocks in a bucket. They have something to do with that. So you hand them a block, they put it in the bucket.

You want to keep the toys new and novel. So these are not toys that they're allowed to play with every day. And you only want to let the children, the child being screened, get to play with the toys. That creates anticipation for any of those that are observing and they'll want to have their turn. And then you want to present these toys and distractors just at the moment when you most need the child's cooperation. The child loses interest in one toy or distractors, you need to be ready to present another one. It does, again, take practice so that you can be quick in changing or using toys.

So really fast, here's just some examples. In the upper left is a toy that we just love. This is one I actually reference to where you can hold a button and the light turns on. You press the button again and the inside will light up. If you hold the button, the whole thing spins. So I've got three levels of interest built right into that toy, and that's really helpful. These fidget spinners have been really popular, so kids may be accustomed to them. I have a pen that has a fidget spinner on the top. I find when I'm screening they all want it. I've started to use that. Bubbles you can have somebody blow and the child can pop. The lower one is a box. We give them a peek and they can see the mice. Later the mice can move because it's actually a finger puppet. Here's more examples.

The thing that differs here, I've got two of them that are -- they're interesting to feel. So the upper right is a bag that has some soft things in it that they can see and squish and they move around. And the lower left is stretchy strings that are tied in a ball and feel those and stretch those. And different kids have different interests. Now, one of the things that's working really well right now is kids are watching on cell phones, iPhones, iPads, tablets. They're watching some of the children's programming. One of the most popular that I see and kids love to watch is Paw Patrol or Mickey Mouse club. I use these all the times. Often moms know exactly what their kids like and they have them on their phones and go to YouTube and play it. I'll ask them what's the favorite one, and they'll have that on their iPhone and it's ready to go.

There's some apps as you see in the lower left. You drag your finger across your tablet and all the bubbles appear. And then you tap them and pop them. It's one that I find kids are really interested in. In the lower right is just an example of using a head phone for one ear, an earbud for one ear to listen to. Again, you can play something that they like or interested like the sound track to one of those children's programs.

I do just want to note that I find simple things can work as well. Paper

airplanes, clay balls, balls of tape, throwing paper balls into trash cans. Doesn't have to be high-tech, and it can work if you're in a pinch. Okay. Now, some specific considerations for Pure Tone screening that I want you to think about. You may need to desensitize in a similar way as the probe for OAE. This is often easier actually because I'll use a full set of headphones that you -- people will listen to music because they're very similar. They have the head strap and the muffs that go over the ears. And then I play the sound from something they would like. Maybe I have the sound playing from an episode of children's programming that they like. I also want to spend some time to find out what's reinforcing for the child. What kind of toys are they interested in. I can talk to parents and teachers to try to get that information. And then I want to be ready with a variety of response toys available.

Then with -- with Pure Tone, you want to and you need to practice the appropriate behavioral response that you want. It needs to be one that the child can do. So, for example, when they hear the tone, they put a toy in a bucket or they put a puzzle piece in place or it could be raising their hand. But you may need to spend some time practicing that appropriate response. You might want to start without headphones first and practice it and then do it with headphones on. Again, screening in teams here is just as helpful as it with OAEs. You can have one person run the otometer and the other playing with the child. They can play give me five. You hold your hand out. When you hear it, give me five and slap your hand. The key here is that the person playing is very animated and motivating to the child.

>> WILL EISERMAN: And can I insert also, Terry, that that person has been taught well not to be an indicator or a clue to the child about when they are to raise their hand. So they have to be very astute at not giving any even subtle cues about when the child should be responding.

>> TERRY FOUST: That's a really key point. In fact, the -- the more coordinated and well-trained and experienced the team, the better because that's something with Pure Tone testing that needs to be controlled through the process from the person running the equipment to anyone who's helping facilitate. So thank you.

Now, there are -- just reminded that when we talk about rewards for kids when they're done, there are stickers from smilemakers.com that you can get that you may want to order and can use. And so keep that in mind. Now, I want to end this part -- portion, excuse me, with reminder that you can use otoacoustic emissions or OAE as a backup method to Pure Tone testing. For those older kids that can be conditioned to provide a reliable response to Pure Tone and headphones, it's appropriate to use OAEs to screen their hearing. So keep that in mind.

Okay. I'm going to go back to where we started here with cannot test. That is really the place that we don't want to be. In some circumstances even after you've given your best efforts to screen and you've tried using other screeners, you may not be able to get a complete screening on that child. Even with that, I just want you to remember we don't stop with a cannot test. Then what do we do? And this is really where your team audiologist or your consulting audiologist comes in to play. When you've got a child, you've tried everything and you've tried strategies we've talked about today, that's when you need to make a referral to the audiologist. They will need to then evaluate the children's hearing using the other testing and test methods that are available to them. And I also just want to mention that the inability to complete a screening due to uncooperative behavior can sometimes be behavior that's consistent with possible risk of hearing loss. We just don't know. So we're going to want -- need to refer and get the

audiology evaluation in full, status for each ear for each child.

So, again, a screening is complete when we've had a pass on each ear or we have the evaluation results for each ear for every child. So I going to turn the presentation over in a moment to give you some -- just easy directions on the website for finding an audiologist.

>> WILL EISERMAN: Thank you, Terry. I want to reiterate something that Terry just said that I think is so important. And that is that there is a chance that the child that is the most difficult to screen may actually be the child we are trying to identify. And so be aware of that, that there's a risk in ever just concluding, well, I just can't screen that child, because that might be the child that has the hearing condition we need to identify. So that's why we want to make sure that if we get stuck, we don't stop, but we pass the child onto an audiologist who can hopefully use their expertise to complete a hearing evaluation.

So let me show you where we go on our website to find this. This is our landing page at kidshearing.org. You would click on OAE screening or pure tone, it doesn't matter. You go to the next page and you'll see here under implementation tools, find an audiologist. And you'll click there. And you'll be able to contact, if you go here to contact program, that's the newborn hearing screening program in your state. They know who all the pediatric audiologists are throughout your state. So they might be a very useful resource. If you click on that, it will take you to a page that looks like this. You could then click on your state. So let's say you're from Iowa. You click on that. And then it would take you to the next -- the next page which would have the EHDI coordinator for the state of Iowa, how to contact them. And your question to that person would be, I need to find an audiologist who can help with a few of the children that I simply cannot screen, how can you help me.

And so there are also other directories there if you still need help, the American Speech Language Hearing Association directory and the American academy of audiology directory also has information about audiologists that you could obtain from their respective websites. In addition going to the EHDI coordinator, you might be able to just simply talk to your health services advisory committee members to see if they know of local audiologists who could take on the screening of a couple of children or even contacting your part C or part B early intervention programs to see who they rely on for their hearing screening activities within that respective program.

So those are a couple of options that you have there. So what I'd like to do now as we're going to open up our questions field here into which you can type your questions and we'll do our best to respond to them. I apologize for some of the glitchiness of our -- of our technology today. It was a little frustrating as our slides weren't progressing at the rate that they typically do. So we're probably going to re-record this and post a smoother version of this webinar on our website and possibly even repeat this webinar after the new year. So never fear if -- if this was a little bit disruptive today.

So the first question is: Do you have links or recommendations on finding some of those fun distracting toys? We will in a moment. Jan, I'm going to ask you to type those into this notes field here, and then I'll move it over to the screen. Smilemakers.com is one of them. And that's where you would find that really awesome light toy, spinning light toy that seems to be a real favorite. So -- and I don't know, Terry, where do you go to look for those different toys that you had photos of?

>> TERRY FOUST: Well, I have really started to move to Amazon because they

are -- they are really carrying a wide variety of toys. And -- and Amazon is -- you know, one of the things that some companies now have business accounts with and so I just mention that in that some of yours may already have a Prime account where you can order those and get facilitated shipping. But I am finding that I can see a toy somewhere, even sometimes at some of your centers, I go back and search for it. But I'll find it on Amazon.

>> WILL EISERMAN: And that goes for those light spinners as well, as well as those mice puppets, mice in a box puppets. Yeah, there's so many different things available now.

The next question is about our listen up video and whether it's available in other languages. And unfortunately, it is not. So, sorry about that. How often -- here's the next question. How often should you have your OAE screening tool calibrated? Terry?

>> TERRY FOUST: That's a great question. So almost universally, the equipment manufacturers recommend that your screening equipment be calibrated annually or once a year to ensure that it's delivering an accurate signal and recording an accurate response. So once a year. And with that, I would just suggest that you -- you know, that's a good thing to remember, you budget once a year and put the cost of that into your budget annually.

>> WILL EISERMAN: I'm adding this notes field up onto the screen about those light spinners so you-all can see where those have been obtained online.

Do you have recommendations -- here's another question, Terry. Do you have recommendations for a child diagnosed with autism? Before you answer, Terry, I'm so glad that you asked that question because one of the things we have been aware of is that some of the traits that people typically describe as associated with autism can be awfully similar to the traits associated with a child who has an undiagnosed hearing loss. And so any child that has a label already of autism or developmental delayed but on whom in is not completed, that is something to pay allot of attention to -- a lot of attention to and to make sure that everything possible is done to get a hearing evaluation done so that the developmental picture that is being put together of that child is accurate. And that they haven't misdiagnosed the child. So as far as children who are autistic, Terry, what suggestions do you have about hearing screenings for them?

>> TERRY FOUST: Great. I think the first key thing is to find out what's reinforcing to the child. So some children with autism spectrum disorder are best reinforced with edible treats while there are others that might like tactile rewards. I have found even a fan with a switch and they want to switch that off and on over and over. And sometimes when they are just completely absorbed in that, we can get the screening done.

>> WILL EISERMAN: Are you talking, Terry, about a little hand fan?

>> TERRY FOUST: I am, yes.

>> WILL EISERMAN: Yeah. So one of those battery-powered hand fans that you might take to a concert or something. I've seen those sold at like Target and Walgreens. I'm sure they're available on Amazon as well.

>> TERRY FOUST: The -- you know, and to follow that up, we are finding that a laptop or a tablet that can play videos is almost your best friend when screening children on the spectrum. They may have interests that can be manifest in many ways, and they will also change with age. And so you can have a variety of videos during your testing. But the vast majority of children that I test will have a favorite video. And so

playing a video clip for each response could be triggered, you know, by the child pushing and then you'll -- they'll push play. It plays for a minute, then you push pause. So you can -- you can use that.

The other thing is sometimes, you know, with established routines and expectations. So this is where the socializing the hearing screening can come in because you may want to spend a few weeks creating the -- the routine of coming in and playing with ears, checking ears before you actually get the screening. And then you also want to allow children to have a break or request a break so you can avoid any maladapted behaviors or non-compliance. You can work with staff who can see they're starting to get to their limits and let them have a break.

>> WILL EISERMAN: I wanted to just interject in case you might not know what Terry meant when he said perseverative interest. A child might really focus over and over again on the same thing. It might be a given toy that they desire and are interested in or a particular video that they like to watch over and over and over again. You can use that to your benefit by finding out what that thing might be, the parent or another caregiver or teacher might be able to tell you that, oh, if we put this particular thing in front of this child, they will focus. And more likely than not cooperate with you. So that's what we mean by that.

>> TERRY FOUST: Thank you, William.

>> WILL EISERMAN: So the next question is: Do the children have to receive a referral from their primary doctor to see an audiologist? Terry?

>> TERRY FOUST: That's a really great question. So -- and it will vary. At the federal level, things have changed to where people can access an audiologist without that referral. But in insurance plans and even how Medicaid is administered from state to state is all different. Unfortunately, some will and some won't require those referrals. So you'll have to check with -- first if they're insured, what their individual plan requirements are. If they're on Medicaid, you'll have to check with those requirements for that as well. And then, you know, then this also just reminds me to mention that you'll want to work with audiology providers to see who is with -- who works to provide a safety net for those children that still may be without any coverage.

>> WILL EISERMAN: I'm curious. I'm putting a poll question up right now while we continue with some of our questions about approximately how many children are you unable to screen each year who are not -- who you do not refer to an audiologist? And -- and we'll talk a minute more about the importance of -- of getting children over to an audiologist in those instances. And we realize that accessing an audiologist can be a challenge in and of itself. But I hope that one of the takeaways here is that you realize that amongst those children are the least likely to be able to be screened, there may in fact be a child with a hearing loss. And so we don't want to just simply conclude, well, I can't screen them and maybe next year. Because that's a -- that's a pretty stark decision about a child that very well may be the ones that we're actually targeting.

So interesting, some of you have quite a number of children that you're getting stuck on. And so the other thing to think about around how to decrease that rate in addition to trying the strategies that Terry talked about today is to consider coming back through or having other members of your staff come back through our online web class to make sure that you're screening with the highest skill possible. And -- and getting a refresher of the training on probe tip placement and -- and the other strategies. I'm going to show you in a minute where to find a video on our website which is a 15-minute

examples of screenings strategies that you might want to have a look at as they summarize a lot of the different things that Terry went over earlier today.

The next question is: Would you recommend screening a child before the age of 3 if there are no noticeable concerns? And our response is oh yes. We recommend children be screened on an annual basis. You know, typically that begins at birth. So we like to have every program collect their newborn hearing screening results, and then to make sure that that child is screened at least on an annual basis, if not within the next six months after that -- after the newborn screening has been conducted. And the reason why that is, is because hearing can -- status with change. A child may pass early on and develop a hearing loss. So we really encourage you to make sure that you don't rely on a screening result from an earlier time more than six months or even a year old.

The next question is: According to the EPSDT schedule, hearing screenings are to be done for newborns and not again until 4 years of age. How can early head start programs be supported when PCPs communicate to parents that it's only needed during that time? That is a great question. And there is a contradiction there. And what I can say and, Terry, please chime in, is that children who are in head start have the advantage of being in a program that is being extra proactive about doing what goes over and beyond minimum practice. EPSDT guidelines are minimum standards, not maximum standards. And so our research shows that the incidence of permanent hearing loss actually doubles between birth and by the time children enter school. And so how would we find those children if we don't screen them regularly?

If we wait until they're 4, you could very well go years with a child with a hearing loss that nobody knew about. And they might develop all sorts of delays that may in fact be treated as the consequences of a hearing loss without anybody recognizing that as the case. Terry, do you want to say anything more about the EPSDT guidelines?

>> TERRY FOUST: I just wanted to emphasize that they are a minimum and at least, but there -- they -- they don't say don't screen. I think people get stuck, well, they say don't do it until. That's not what it's really saying. Their minimum standards -- they're minimum standards and -- but they -- they -- they're minimum standards that aren't proactive for the current research that we know about the incidence of hearing loss.

>> WILL EISERMAN: And I want to also just compliment the office of Head start around its commitment to hearing screening. The investment that the office of head start has made in making sure that everybody is aware of evidence-based hearing screening practices has been not only to ensure that children in early head start and head standard have best practices, but they're actually seeing themselves as leaders in early childhood where the demonstrated outcomes from early head start screenings are now informing best practices outside the context of head start. And at some point, hopefully, we will see that expressed in some of these other guidelines like perhaps EPSDT.

Another question here: How often do you get OAE screeners calibrated? I think we said annually about that already, right?

>> TERRY FOUST: We did.

>> WILL EISERMAN: Here's a question. I have re-tested a child who was first a refer, then after the result, was a pass. Sometimes my OAE machine shows results right away, and sometimes it doesn't get any readings at all. It makes me think that the machine isn't very accurate. Any suggestions? Terry?

>> TERRY FOUST: Yes. Yes. Thank you for asking that question. The first thing I would want to do is I'd want to troubleshoot that machine a little bit. So I'd want to use it

on either myself where I know what my results are or on another older child or adult with known results. And I'd want to make sure that it performed accurately every time. That would be the first thing I would do is make sure that I am getting consistent result when is I try it on somebody who I know passes, for example. But if it continues to give you inconsistency, then actually find that you should have the calibration on it checked. So I would do those two things.

>> WILL EISERMAN: Great. We are reaching the end here, but we're going to -- we're going to stay on and answer more of these questions because you have so many good ones. What effect does tubes have in the ears in getting an accurate reading? Terry?

>> TERRY FOUST: So tubes, just so everyone knows, that's when a child might have a history of middle ear infections or chronic fluid in the middle ear space. So in order to -- to help a child get out of that chronic cycle, they'll insert some small tubes that allow that to aerate and drain and keep the ear -- the middle ear space clear. As long as those tubes are functional normally, you can screen them with OAEs and expect the same result as you would from any other child if they have normal inner ear function, you should get a pass. If the tubes are clogged or not functioning, then we might get -- we would get a refer. So go ahead and screen them. If you get a pass, you're complete. And then if you get a refer, then you're going to send them to the medical provider and have those tubes checked to ensure that they're functioning the way that they need to.

A related question I saw in here was with the MACO. Yes, you can screen a child with tubes with the Maco, but there is an adjustment you'll want to make that happen when is you turn the machine on holding the buttons down. You want to refer to your manual or equipment representative so you just ensure that you're making that adjustment when you screen a child with known PE tubes.

>> WILL EISERMAN: The next question is how many times can we screen a child who receives a refer result before he or she needs to see an audiologist? I want to encourage you, if you have this question, to go and watch our protocol video. It's about four minutes long on our website that describes the step by step follow-up when children don't refer. The short answer to that question is we make a referral after two repeat screenings for a middle ear evaluation from a health care provider and then we screen the child again. And if the child still doesn't pass, then we refer to an audiologist.

I see that we are at the top of the hour. And I -- for those of you who need to move on, we invite you to -- to click on this give us feedback link here that you see on your screen. But if others of you would like to stay on, we will entertain a few more questions because we know this is such an important issue for you. So we're going to hang on here for those of you who want to stay on. And know that we can be contacted through our website at our e-mail address which you will see here at echo.NCHAM@USU.edu. We're happy to consult with you. Please don't feel like you're stuck on your own. You can contact us. We're happy to have a phone call. That's why we're here. So feel free to reach out if you get stuck on anything. The next question is, I think we need to add that getting a -- oh, no. That's -- let's see. Is there an organization that supports the statement that children should be screened before 3 years as it may help parents better understand why we are doing hearing screening so early? Terry, do you want to talk about that?

>> TERRY FOUST: Yes, thank you. The first response to that is, you know, the importance of screening children before 3 just starts right at birth with newborn

screening programs that have become, you know, the standard across not only our country, but much of the world. And then there is the joint commission on infant hearing which influences screening and follow-up practices almost worldwide in this regard that puts out various position statements. And they also support early childhood hearing screening and follow-up. And then the professional organizations such as the American academy of audiology and the American speech language and hearing association also support early hearing screening. So -- if you need something really specific we'd be happy to respond.

>> WILL EISERMAN: Here is a question as a follow-up to the protocol question. This person is saying: After the second OAE hearing screening is completed and it is a refer, the child then goes to their physician. This is a problem I'm having as far as parents following through on this. This process could be a while. Do you have a suggestion about this? Well, one thing you can do is you can re-screen again before that child goes to the physician in the interim. And if the child passes, then you are done. If the child continues to not pass, then you have even more evidence that there is something going on, whether it's a chronic middle ear condition that most likely needs some kind of treatment or whether it's a permanent hearing loss.

So it's not a problem to screen again, but you don't want to get into an infinite loop of screening and screening and screening and never moving forward. But if you have additional screening evidence, that can be given to the parent to support and encourage them to move forward and to present that to the physician as well. Anything to add to that, Terry?

>> TERRY FOUST: Nope. I think you covered that well. Thank you.

>> WILL EISERMAN: So the next question is: To take passing frequent [audio breaking up] to equal a passing result.

>> TERRY FOUST: Yeah. Thank you for that question. I know that that is a great temptation to do so. But it really is not acceptable to do that. There's several reasons why we're -- we're doing that, but it's -- one of them is we need to look at that inner ear function and how that's functioning as a whole and how that's functioning at that given spot in time. And so we really want the response from across the frequency or the pitch or tone spectrum and because all of that needs to work together to create the hearing that we -- that we need for development. And then fluctuating hearing loss can affect certain tones and it can be transient or fluctuating. So we want to ensure that at the time of screening, everything is functioning as it is needed to get that pass. So, no, we need to do a complete screening which includes all the frequencies tested.

>> WILL EISERMAN: The next question is: Can I damage a child's ear by pushing the probe in too far?

>> TERRY FOUST: I can really appreciate this question. That's probably the scariest thing about learning to screen. You're putting something in a wiggly little child's ear, and we don't want to hurt them. But you need to be assured that the equipment and that probe has been developed so that it won't go too far in. The base of that shouldn't allow it to go too far into the canal to where it will damage the -- the ear. And then just review probe fit instructions because you want the tip -- the probe tip to go in -- well into the ear canal, but it never should go in beyond the tip of the probe itself, and the probe's built so that it won't. So go ahead and practice and feel confident.

>> WILL EISERMAN: There's a question about are there grants available to build the capacity of hearing screening equipment. There is a grant application that we've written on our website so we encourage you to look at that. And to submit that to local

Charities like Sertoma. They have a real interest in hearing-related issues with children. If you're really stuck on finding resources for hearing screening equipment, we encourage you to contact us at our website e-mail address echo.NCHAM@USU.edu. We may have a few ideas. If you're stuck, let us know about that. The -- know that hearing screening equipment is considered by the office of head start as an allowable expense, so it can be written into your budgets. But we know that those line items are highly competed for.

So I think we're going to, in the interest of time now, we're going to close out. If we didn't get to your question, please feel free to contact us directly and we'll be happy to talk with you more about whatever concerns you have. And once again, remember that our goal is to ensure that every child receives a hearing screening. And we hope that your takeaway today is that if after you've done everything possible you still aren't successful, don't stop there. Try to continue to support the child in getting to an audiologist and make sure that somebody has had a look at their hearing.

Terry, thank you so much for your presentation today. Thank you to our captioner for your services today and for all of you who devoted time out of your busy lives to focus on this important part of the services that you provide. Please click on the give us feedback. There's a couple of very short, quick questions to tell us how this webinar went. And we will look for you at our future online learning opportunities.

>> TERRY FOUST: Thank you.

[Webinar concluded at 3:10 p.m. ET]