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NATIONAL CENTER FOR HEARING ASSESSMENT AND MANAGEMENT  
INTRODUCTION TO OAE SCREENING WITH FOCUS ON HOME-BASED SCREENING  
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>> Well, good day, everyone, I want to welcome you to today's website is that titled planning evidence based hearing screening practices for children 0-3 years of age. My name is William Eiserman and I'm the director of the ECHO initiative and I'm joined today by Dr. Terry Foust who is a pediatric audiologist and speech language pathologist who has served as consultive to the echo initiative from its very inception which was almost about 20 years ago we have been doing this work. We have worked with hundreds of early head start and head start programs across the country as they explore evidence based hearing screening and follow-up practices and so we invite you to open your minds up today as we consider what is considered evidence based practice for children birth to three years of age. If you -- if your interests is children older than that, OAE screening is used with that age population as well so we invite you to stay with us and we can explore more specific questions containing the data once we wrapped up. And we want to always start at the very beginning which is with the recognition that each day there are children who are deaf or who are hard-of-hearing that are being served in early childhood centers and health care centers like the ones that you all work in. The question that we have is, how can we know who they are? Since hearing loss is an invisible condition, how can we reliably identify which children have normal hearing and which may not.

Now the short answer to that question is that professionals like yourselves who are serving children birth to three years of age can learn to conduct what is called otoacoustic emissions screening. Often referred to as OAE screening and they can do this in a variety of environments and that what you see depicted in these photographs right here. These children are being screened using the OAE method and they are being screened in educational or home environments and those that are doing the screening are people that they know. They are their teachers, their home visitors, their health specialists. And you see in these photographs, the children are in their natural setting so this little boy in the middle is at a snack table taking a break and having his hearing checked. The little girl -- or the little guy on the left is being held by a familiar care giver, a girl on the left bottom is play wag toy and you even see this little one on the right in the outdoor play environment. We can go where children are. And in fact, screening works best when children are familiar and comfortable with the adult that's doing the screening. And where they can continue to play with a toy or be held or even sleep while the screening is being conducted.

I would like to give you a quick look at what -- oh. I can't find my little video. I will show it to you in a moment. That disappeared. Hold on one second while I pull this up. Sorry for the pause here. I'm going to show you an example of a little guy being screened this is an ideal screening situation because this boy is cooperative but this should give you an idea what the OAE screening process can look like. And this is an actual realtime screening. So let's watch this.

[Video]

Passed! Yeah!

>> Well, thank you. Okay, you want to put it in this other ear. What about the other ear? Let's try that one. Okay, ready. You already did it! Yeah!

>> Thank you.

>> So, yeah, under really ideal situation where you kind of -- have a cooperative child and you are trained to do the screening and you have selected appropriate equipment, we can screen children in as few as 30 seconds an ear. But again, that isn't always like that and that's the reason why training is necessary.

We want to make sure that everybody who is in attendance today realizes that today's webinar is not a training, it's an introduction to give you an overview of OAE screening. That if you embark on doing OAE screening you want a full and full training experience and one of them is available to you starting in February. You see over on the left part of your screen in orange that you can register now for our next web class starting on February 5th. It's a four part web class that is an hour long each day. And when you are done, you should be pretty much ready to go in implementing OAE screening. So we will be talking a bit more about that later. Know that today is an introduction.

So let's talk now about why periodic screening throughout early childhood is so important starting at birth and why we are seeing more and more programs like the ones that you are a part of adopting OAE screening. You probably recognize this image here. You have been on one side of the glass or the other, maybe both. You know as close as we look, we can't see hearing loss. And yet permanent hearing loss is the most common birth defect in the United States. Most newborns are now screening for hearing loss at the hospital, but not every baby gets the screening. Babies that don't pass the screening require further evaluation, but again not everybody gets that follow-up. And so those are two of the reasons why periodic screening throughout early childhood is needed. Not every baby is screened at birth though most are. And those that don't pass don't always get the follow-up they need but there is more to it than those two reasons. Even when babies are screened at birth and even when they pass the screening, it's important to continue to screen throughout early childhood because hearing loss can occur at any time as a result of illness, trauma, environmental factors, or genetic factors. In fact, the research suggests that the incidence of permanent hearing loss actually doubles between birth and school age. From about three children in a thousand at birth, to about six in a thousand by the time children enter school. And that's why screening during the vulnerable screening in a child's life is so important of. And so we want to just pause for a minute and see if you got that point because it's really important that you are able to talk to people about why we are screening children even though we have a robust newborn hearing screening program in place. Why is it important that we screen continually? Not every baby is screened at birth. Some babies are lost to follow-up. Hearing loss can occur at any time in a child's life. We would like everybody to try to respond. So if you don't have a keyboard within easy reach, now is a good

time to pull it over because we are going to be asking you some questions like these throughout today's webinar. Yeah, the answer to this question is all of these reasons. Probably the most important of which is that hearing loss can occur at any time. And so we want to continue to look at hearing throughout the early childhood period because we are so committed to monitoring language.

In fact, language development is at the heart of cognitive and social emotional development and school readiness. Most of us talk about the importance of language readily all the time. And yet it's not as thoroughly discussed that hearing health is at the heart of language development. And yet it doesn't take much thought it to recognize that, of course, it is. That if we are going to be committed to monitoring and promoting language, we need to stay on top of what the hearing status is of children so that if hearing is ever disrupted temporarily or more significantly permanently, we can accommodate and address that.

Hearing screening when it's followed by appropriate audiological assessment and early intervention can dramatically improve the options and outcomes for children for deaf or hard-of-hearing. And that's what you see right here. This child is an infant who has been fitted with hearing aids in the first few weeks of life which is one of the accommodations that is possible.

When hearing loss is identified early, this can significantly minimize if not eliminate all together the delays that have historically been associated with hearing loss as a result of early identification and then access to various communication options. Children who are deaf or hard-of-hearing are now thriving in ways that used to be rare and I want to show you a few examples of some such children. Let's look at these two little girls first. Both of these girls have bilateral hearing loss which means in both ears they both wear hearing aids and have been -- were identified with their hearing loss very early in life and because of that, listen to the language that they have access to even though they have a significant hearing loss.

[Video]

>> We are having a party over here.

>> Are you guys talking?

>> I'm skating. Wee!

>> Look, this is the water, she is skating on the water.

>> Wee. Come on, talk to each other. You talk to me.

>> No, I'll talk to you.

>> And I will talk to you.

>> And I will talk to you.

>> And I will talk to you.

>> I will talk to you.

>> And I will talk to you.

>> Come on. Over here.

>> No, you want --

>> Hey, hey, I need, Belle, hey, guys, I need Belle.

>> Okay. Belle will come later.

>> So that's one of the ideas is that we want to make sure that children have access to a way of communication. One way or the other without disruption. Let's look at these children. Now this family has elected to use manual communication, sign language for their children. Watch how vibrantly they are able to interact and again this is because they are hearing loss is identified early enough that they could be provided with access to this mode of communication without disruption.

[Video]

>> Pretty vivid communicators. I will show you one more example. These two little guys have cochlear implants that allows them actually to hear. And yet they are deaf and check out their speaking language abilities.

[Video]

>> Hey, I'm A.J.

>> Hi, my name is Gibson. People are special in different ways.

>> One of the things that makes me feel special is I'm deaf.

>> I'm deaf, too, and that means that your ears can't hear. A.J. and I have special things to show you. They are called cochlear implants.

>> They help us hear.

>> Cochlear implant is a big word so I call them CIs.

>> So the whole idea behind being able to conduct evidence based hearing practices is that when people do in fact have a hearing loss of any degree, that they are provided with an opportunity to receive assistance so that they have access to a range of communication without disruption and that's the whole goal behind what we are doing. The specific goal of OAE screening is to identify children who may have a permanent hearing loss. Which is most commonly associated with problems of the inner ear. There is an avid benefit to OAE screening in that we may also identify children who are experiencing temporary hearing loss due to conditions such as wax blockages, fluid or infections of the middle ear called otitis media. When the child doesn't pass an O A-E screening, we return sure why that might be right away so there are -- so as a result there are several follow-up steps that help us get to the bottom of why they are not passing. And some of this requires the involvement of health care providers and pediatric audiologists and along the way we may also find things like wax blockages and fluid.

So that's our overall goal is to be able to identify permanent hearing loss and along the way maybe some other things.

So I'm going to invite Terry Foust. Terry is a pediatric audiologist and a speech language pathologist to talk to us more about why is OAE screening the recommended evidence based method. Terry?

>> Thank you. We do want to talk about OE screening as the most appropriate method. It's the most appropriate method to identify young children at risk for permanent hearing loss for several

reasons. It's because it's accurate, but not only that, it's feasible. And by that I mean that it doesn't require behavior response such as raising a hand for -- from the child and so it allows us to screen children under three years of age. It's also quick and easy. So most children can be screened in just a minute or two and sometimes in as little as 30 seconds per ear. It's also a flexible tool and I want it to underscore this because that's a really great thing about it. We can often screen in a variety of environments including classrooms, home or health care settings such as William showed us a little bit earlier. And the thing to remember about that flexibility is we can often screen in settings that we would not be able to consider in other methods. And it's also very effective. It's effective in identifying children who might have a mild hearing loss or a loss in just one ear as well as those that have a severe bilateral hearing loss. And it's also helpful in drawing attention as William mentioned a little earlier to that broader range of hearing health conditions that might need further attention such as wax blockages, fluid or infection. So it's quick and easy and it's feasible and it's helpful in identifying other hearing health conditions. William?

>> The availability of OAE screening means that it's no longer appropriate for us to rely solely on other subjective methods so I want to talk about those for a minute so that you are aware and can easily explain it to others why we are not using those other methods any more as the primary tool. And what I'm talking about here are things like ringing a bell behind a child's head or depending solely on a care giver or a parent's perceptions of a child's hearing. We don't want to rely solely on those things because OAE provides a much more reliable screening of the ear. Newborn hearing screening results which I mentioned earlier are valid and valid at the time of the screening and you definitely always want to be sure that you obtain the newborn hearing screening results of the children that you serve particularly the children under a year of age you want to find out what those results are and that the child didn't pass you want to support the family in getting the follow-up screenings or diagnostic evaluations that were recommended by the hospital and doctors who were involved in that screening. But even when children have passed their newborn screenings, it's important to recognize that screening is only valid at the time of the screening and doesn't necessarily reflect a child's hearing status in the months and years that follow. And so that's why we want to continue to screen even when newborn screening has been conducted and even

when the child has passed. And although some health care providers are in fact beginning to incorporate OAE screening into well child visits, this is not yet standard practice. Routine examination of ears by a health care providers shouldn't be mistaken as a hearing screening and I know that can come as somewhat of a disappointment to you as it does to other professionals and to parents who are really hoping that this is being taken care of during wellchild visits to health care providers. It's precisely that this isn't yet happening in the health care context in any kind of consistent manner. That programs like the ones that you are serving in are taking on the doing of OAE screening because obviously there is an increased recognition of the importance of monitoring hearing throughout the early language years and now we have a way to do it. So in this lower left hand or right hand corner you see a child having her ears inspected by the doctor. That's an otoscopic evaluation and that doctor is looking for ear health but not a hearing screening even if the parent says to you but the doctor checked my child's ears, it's important to recognize that most commonly it was doing this. Not a hearing screening.

So we always encourage everybody to collect all of the records from health care providers including anything that has to do with hearing or ears, but unless those records include very clear documentation of ear specific, meaning right and left ear results and the hearing screening method used, which should be OAE screening. Unless you get that documentation, you are going to want to screen that child's ears again and not make the assumption that it's being done by a health care provider.

So now, Terry, I would like to ask you to walk us through the hearing screening procedure using the OAE method. People have at least a quick overview of how this method is used. What it looks like. And as you listen to Terry, I want to invite you to ask yourself why is it possible that we can screen the child so young without having them raise their hand or somehow tell us that they are hearing a sound and even able to screen a child who is sleeping. Terry?

>> Thank you, William. Let's take a few minutes to talk about how this procedure works and let's have a quick overview of the otoacoustic emission screening process. To conduct an OAE screening, we first take a careful thorough look at the outer part of the ear, as you see here and we do that to make sure there is no visible sign of infection, blockage or any visible



malformation. Once we've done that, then we go ahead with the OAE screening procedure. And the procedure is completed by using a small hand held device from which a cord extends up to a small ear bud-like probe and that's what you see here in this picture is that probe. Now if the visual inspection is okay, then this small probe is placed into the child's ear canal and then the probe which you can see here is the blue object in the outer part of the ear in this graphic. That delivers a low volume sound stimulus into the ear, as you can see the green arrow showing that going through. Now if the cochlea which you see it here as the snail small snail shaped portion of the inner ear on the right if that cochlea functioning normally, then it responds to this sound by sending a signal to the brain. And at the same time it produces or generates an acoustic emission which then you can see here, that acoustic emission is a sound that travels back out of the ear. This emission is then analyzed by your screening unit and then approximately 30 seconds the results displayed on the equipment. It's display either as a path like you see here or as a refer. So I want to emphasize that every normal healthy inner ear, every normal inner ear produces an emission that can be recorded in this way.

Now during a complete training, you will learn how to select probe covers, how to appropriately insert the probe into the ear and how to manage children's behavior so that screening can be accomplished. But this today just gives you a general idea for now about how the OAE screening procedure works. William, I'm going to turn it back to you to talk about a recommended screening and follow-up protocol.

>> Thank you, Terry.

Before we do that I want to review really quickly. We talked about first of all why it is so important to screen. We talked about how screening hearing loss can occur at any time in a child's life and it's really important for you to be able to explain and emphasize the importance of that to parents and to colleagues. One of the important statistics is this one. See if you have the right answer. How much does the incidence of permanent hearing loss increase between birth and the time children enter school. Increases only very slightly. Increases moderately. Or it increases -- it actually doubles. We would like to see everybody respond to this.

The correct answer is that it actually doubles. And that's

pretty profound when you think about the importance of the commitment to monitoring hearing. Hospitals have made a very robust decision to monitor children, to screen children's hearing at birth. And yet we are only at the beginning stages of adopting hearing screening for children Byrd to 3 after the newborn period. And head start is absolutely got a head start in this. And we are proud of head start for making such a commitment to this.

Based on what Terry described to you, what do you think the answer to this question is? The OAE screening primarily targets the function of what patten of the -- what part of the ear? The outer ear? The middle ear or the inner ear? The inner ear would be that cochlea, that snail shaped portion of the ear whereas the middle ear would be around the eardrum. Yeah, it's the inner ear. Now we will find sometimes issues related to the middle ear as we talked about wax blockages and fluid, but what we are really screening is the function of the cochlea, the inner ear. So that's good for you to be aware of.

So let's go a step farther. There is a question about, well, what happens when children don't pass on one or both ears? And I want to give you a quick overview of what that follow-up process could look like. This is a quick snapshot of the OAE screening and follow-up protocol that we recommend and that hundreds of early head start and head start programs across the country are using. So we screen 100% of the children in a given program with the OAE method on both ears. We expect that about 75% of those children will actually pass on both ears. And won't need any further follow-up. However, that leaves about 25% who will not have passed on one or both ears and who will need a second OAE screening in about two weeks. We do that because we don't want to refer all of that 25% to a doctor when maybe there was simple explanation and we can actually get a different result two weeks later. Sometimes they have fluid in the middle ear that goes away or wax blockage that simply comes out. And that wouldn't require a doctor's engagement at all. So we screen this 25% two weeks later. And at that point we find that about 8% of the total number of children being screened still don't pass on one or both ears. And that 8% is then referred to a health care provider with the request for a middle ear evaluation. We want that doctor to look at the middle ear and see is there a wax blockage? Is there fluid in the middle ear? Is there maybe an ear infection that needs to be addressed? That can help explain why they may not have passed yet. And so we follow intensely

during that period to find out what those results are. But we are not done yet because the child still hasn't passed the screening. So after we have the doctors engagement, health care providers engagement on the middle ear evaluation, we screen these children a third time. And at that point most children pass and if they have, then they are done. But if they don't pass that evaluation, that screening, then we need to refer them to a pediatric audiologist for a complete audiological evaluation. And so you will see here that this -- these are the percentages that we typically see with the children who are being screened by trained screeners using equipment that has been carefully selected for use with this population. Once you are underway with your OAE screening program, it will be helpful to come back and look at your percentages at each of these levels of implementation to make sure that they are kind of in these ballparks and if not you would want to get technical assistance either from a local audiologist or from us.

As you consider adopting OAE screening in your program, it's important to check out if your state has any statutes or regulations concerning hearing screening. We encourage you to check with your state's head start and state collaboration office and your early hearing detection and intervention program which is known as the newborn hearing screening program often referred to as the EHDI program in your state. They will help you know about the various hearing screening activities in your state and any guidelines you need to be aware of and any trainers that might be available so reaching out to them is valuable.

Collaboration is always key in advancing programs like these and we encourage you to think about who you can collaborate with. Audiologists are probably your most important collaborators in this endeavor. They can help you with selecting equipment with training, with consultation on individual children. And we also encourage you to involve health care providers and possibly include both of them in health care services advisory committee with a particular focus on what you are doing around monitoring the status of hearing for all children that you serve. You want to engage your health services advisory committee as you plan forward in implementing adopting and in sustaining your OAE screening practices and help them understand some of these variables that you will be looking at in terms of your response rate like we saw on this slide right here.

Record keeping is a fact of life in early head start and

head start we know that this is important so you want to make sure that you involve the staff in your program that are responsible for your data systems who are responsible for documentation and tracking. And to make sure that you have a functional data system that can be used to monitor the status of the hearing screening and follow-up steps for children throughout the implementation of the protocol. We don't want to just report the ultimate outcomes in the tracking system, but have a way of knowing where each and every child is throughout that process. And we actually have a tracking system that is available along with all of our other resources free to you that follows the protocol in detail which many programs use to make sure that they are on top of each of the steps for following children that don't pass in the screening process.

As you think about planning and moving forward with implementing OAE screening, there is some key things you want to think about. You will want it to inform all of the key participants and in particular you want to be thinking about who will be our screeners? Are we talking about our home visitors or just our health specialists, health and disability specialists and who are we going to have doing the screening? We always like to see more than one person in the program be trained so that the screening effort is not dependent only on one person because sure, shooting that person will leave and then you won't -- you will have to start all over. We don't want to train so many people that nobody really gets good 59 it -- good at it so striking a balance and making sure that people who are identified as the screeners are the ones that are going to have access to the children not just the first time that they need to be screened, but if they need subsequent screenings as well. So giving some really good thoughts about it and there isn't one right answer. Every program approaches this a little bit differently.

Another question is when will we start screening and what does that tell us about when we want to do training? We always recommend that if you identify a start date for your screening effort, you will want to have the training as close as possible to the time that you want to launch your screening. So that whatever is learned in that training is fresh in the minds of those who will be implementing the screening.

Another valuable question to ask as we think about planning is will we be implementing the OAE screening program-wide right

off the bat? Or will we roll it out strategically a little bit as a time? Now I will admit I'm a little biased to the second way, to rolling it out a little bit at you go and learning from your experience. So especially in large programs where you have multiple pieces of equipment with multiple screeners in multiple settings. It's useful and programs have taught us this that it's useful to start off with a handful of screeners, get them going, see what practices, policies or procedures they develop and want to follow and then you replicate what you learned that will go well with the remainder of your staff.

The office of head start has assured us that making a commitment to OAE screening doesn't mean it has to all be implemented right off the bat. That a strategic rollout can be viewed as a very responsible strategy for making and adopting the changes associated with evidence based practices. So we encourage you to think about how you can roll this out in a way that doesn't overwhelm anybody.

Another important question is, how can we elicit the help of an -- we elicit the help of an audiologist and the staff. So with training and selection of equipment and that is in fact the next point. There are about eight different brands of OAE equipment available right now and you will find them all described on our website. But how are you going to pick which one to purchase? How many devices will you select? OAE equipment costs about 37 to \$3,800 apiece and then every time you screen a child you have a disposable ear tip that you will use that cover that ear cover that goes in the child's ear that needs to be discarded and they cost anywhere from about 15 cents apiece to a quarter a piece. So you will factor in the cost of that and then lastly the cost of an annual calibration which is about 200-\$250. So you will want to carefully get some input on who the -- what equipment to purchase with the advice of a pediatric audiologist. And our website will help you make those considerations. We will point out that there are some pieces of equipment that have foam probe covers which are like squishy little earbuds that you may have used for hearing protection. Those are really a lot easier to use than other ear probe covers and not all of the devices have those. So that might be one example of a determinant in your selection of equipment.

We encourage you to try out the equipment in different environments that you will be screening and come to understand some are more sensitive to sound and movement than others are

making it much easier if they are not as sensitive to sound and movement in getting your screenings done. So we can't underscore enough the importance of getting audiological input in your equipment selection.

And then the last question we highlighted here is about how the documentation in tracking of your screening process will be done. And who do you need to engage in that process. So that those who are involved with tracking systems and data systems can be ready to help you document each and every step of the screening and follow-up process. Once again, our website includes tools to help you with that. And in fact, what I would like to do right now is take you to a quick little tour of our website and then once we do that we will open up for some questions. This is our landing page at [kidscaaring.org](http://kidscaaring.org). I will point out right now if you are interested in our web class, you will find a way to register for it right here on our landing page so if you are about ready to embrace doing OAE screening this would be a great opportunity again starting in February. What you need is to have already purchased OAE equipment because this is a hands on training and you will be asked to use it and to demonstrate your use of it.

Most of the information that is important for you to check out will be found in this yellow box right here. If you click on OAE or otoacoustic emission screening right here it takes you to our next page which wrist you will find a group of 11 video tutorials, our series of implementation tools that I will show you. These 11 video modules walk you through the planning and the actual learning process and it's the basis of our web class. You will also find some self-instructional tools here under live web class resources. When we show you some of the resources that are available here that you will want to be aware of under planning and learning tools, you will find the set of resources and a planning check list that we want you to direct your attention to as well as some other useful tools and handouts.

The next area is find an audiologist. Under this is where you can find several directories that will help you locate an audiologist if your heal services advisory committee or others don't have ready access to that.

The next one is OAE equipment which is where you will find a set of resources available for purchasing equipment or considering your equipment options. There are quick use

instructions that are videos or each of the different brand specific devices that you will find there. I hope what you are getting the idea of is that on our website you will find really everything you need in order to plan for and implement your OAE screening program. This is what you will find when you look at our equipment page. All of the information about various brands of equipment that are available. You will find a set of resources designed audiologists to help you so if you have an audiologist who will help you, you will want to direct them to these resources because they can help you walk through all of this. Going farther on the page you will see the remainder of our 11 videos. And these videos are only about two to three minutes and then in length, a total of 45 minutes of viewing time. So you can learn to do this with guidance by -- with a commitment of probably half a day's time. Provided you do some practice exercises with yourself, some other adults you would practice on and then ultimately with children. You will find protocol guides, screening and documentation forms here and you will find some resources for preparing teachers, letters to parents and health care providers. We even have a sing along video about hearing screening that you can play for slightly older children. We have resources, letters for sharing, screening outcomes and the parents, referral letters to health care providers. And then in this last group we have our tracking tool. And a video helping you know how to implement that.

So we invite you to get a -- acquainted with these resources and to recognize you don't have to create any of these from scratch. So you should have the benefit of getting started and not -- to create everything yourselves. These are our web class dates. Go to [kidshearing.org](http://kidshearing.org) if you are interested in attending. This is free as is everything that we are offering you on our website and our other webinars. So with that, let me open up our question field over here. Hold on one second before you put in any questions. There we go. And while we wait for our first question to come up, let me ask you a question see if you were paying attention. Is that true or false question. We can only assume an OAE screening was conducted by others like a health care provider if we receive ear specific results that explicitly state that an OAE screening was conducted.

Remember when I was talking about that tendency to assume that a health care provider was in fact doing a hearing screening when they were just looking in a child's ears. This is true. We really need to make sure that we get documentation of ear

specific results that say OAE screening or we shouldn't assume that a screening had actually been done.

So our first question is, how do I know which audiologist in my area are pediatric audiologists? Great question. Terry, do you want to address that for us?

>> Yes, that's really a great question and I would like to refer everyone to the American speech language and hearing association's website. And that simply just ASHA.org. On there they keep a list of pediatric audiologists throughout the country and you can search that by area. And then --

>> Terry, actually, when you go to our audiologist, find an audiologist -- find an audiologist listing, ASHA's directory is there.

>> Yes, thank you. We linked it right on our site.

>> We linked to it right there. And you can just -- I'm going to point the arrow right here. Access, ASHA directory. Right there. I'm sorry, go on, Terry.

>> No, thank you for that adding that link in, William. And then I would be prepared as you contact them with your program specific questions so you can almost interview them for their ability to provide program support and interests.

>> Great. Thank you. The next question is, is there funding available to purchase OAE equipment? The machines are quite costly and not in our head start budget. Let me assure you of two things. One is that just in case you didn't know the office of head start does view OAE equipment and other hearing screening equipment as an allowable expense. I realize that doesn't magically make it appear in your budget. One of the tools that we have tried to help with on our website is and above this yellow box here where my aero is pointing it says sample mini grant proposal. We realize that some people need to write additional requests for funding their OAE equipment, and that writing such a proposal could be a daunting task. So we've written it for you. It's right there you can download that Word document and tailor it and submit it to a local charity. We know -- Lion's Club, Sertoma and other fraternities and sororities in your local area have been maybe good candidates for a capital purchase of equipment like this. So we've written a



proposal. If you can identify some local charities or foundations, you can use that proposal to elicit your funding.

>> Lenore, I want to ask you for this first question that's listed here, will you look at our calendar to see if there is a specific date we can provide for this and then we will come back to that question.

The next question is, what does evidence based screening specifically mean?

Terry, do you want to respond to that question?

>> Yes. That's a great question. Evidence based refers to that there is documentation of the outcomes and the impact. And often that means that there is a research base behind it. So in this case with OAE screening there is a large evidence base or a research and outcome base that supports the use of otoacoustic emissions as an effective and feasible screening method. So simply when this case there is a large body of research and evidence and impact information that supports it.

>> Yes, great. Thank you.

The next question is a person who is saying because we need to have OAE equipment for upcoming web classes. Are there later dates beyond the February date when a class is going to be offered. And the answer is, yes. We have tentatively slated a class starting in April on the 23rd, 26th, 30th and May 3. And so that is something to keep in mind. If you have a training need before then, we have other ways that we can help meet your training needs so just get in touch with us through our website or through our e-mail. We shall see on the left side of the screen once I reveal that again. And we will be happy to talk to you about various ways. Some of you are from the states where there are trainers available and we will be happy -- happy to text you with those folks. We have a variety of different ways to meet your training and learning needs.

The next question is what do you suggest we do with parents who do not do anything about the medical referrals? In other words, I think you are saying when a child doesn't pass and need to refer the child but the parent doesn't follow-through. Well, we don't have magical answers to that question. We know that is a reality. We can encourage you to share some of the information

we have on our website that would impress upon them the importance of doing OAE screening and follow-up.

>> Yeah, I agree. It's really hard. Service referrals are hard. And though, you know, I just would encourage programs to just be creative and just try to identify the barriers and eliminate them as much as they can. Wish we had a magic answer for you. I also noticed the next question which is in regards to a slide earlier in the presentation where an infant or child had a pacifier in his mouth during the OAE screening. And the question is, would the use of a pacifier change the results of the screening? And that is a really great question. Ideally when we screen we want to eliminate all of the factors that could impact the screening. And so we want the child to be quiet which means their own movement including chewing and swallowing so it's best if we have that. And there are occasions when the pacifier serves another function and we would actually purposely introduce it and that is when a child would be fussy, crying, and we would want to calm them and so we would give them the pacifier. And then we would try to screen once the child had quieted. And you can successfully complete a screening as the machine will average between the child's sucking so they will suck and then calm and then the machine will record responses. When it gets either enough of a response over those averages or the time that it tests, it will pass or it won't be able to and we will get a refer or we won't get a complete test. But it is a strategy to try when you can't get a child quiet.

>> Sorry, Terry, I lost which question, Terry, I lost which question we were on here.

>> Okay, the next question is when the pediatrician checks off the child's well baby exam as normal for their hearing screen and I question is we can't assume a licensed pediatrician is accurate in saying that the child's hearing is normal. Thank you for that question. We talk about that a lot. We are not questioning the pediatrician or the health care provider's physical exam. What typically that is they conduct a physical examination of the ear and its structures. So are all of the structures present and do they look normal. What they don't typically do when they use an ear light to look in an ear or to check the structure or the physical appearance of the ear is they want to see if everything looks normal. If there are anything visually they see that is abnormal. But unless they do a specific test of hearing, that physical examination or visual examination is not a test of

hearing. So we are not questioning their license or their skill. What we are really saying is there is a distinct difference between visually inspecting and looking at an ear and actually doing a screening or a test of hearing. I hope that makes sense to everybody. The really important point.

>> Great, great. And we are almost at the top of the hour and we will take two more questions before we wrap up. As a reminder, today's webinar has been recorded and will be posted on our website and you will be able to review it again or share it with people that you think might benefit from what we covered today.

The next question is, in the beginning you showed screenings happening in classrooms. But every time we tried to do this, we don't get good results either the machine says too much noise or we have other problems. And any suggestions on how to make this work? There is a couple of things I can say right off the bat and in one sense this question underscores the importance of a couple of things. One, equipment selection and making sure that you have equipment that really can be used well in these kinds of moderately noisy environments and not all of the equipment that is available works equally well under those conditions. So you will want to make sure that you make a good choice. The second is that you want to make sure that you get training on probe placement in particular so that you get a good sealed probe inversion in the ear and if there is a noisy air message that you are getting, sometimes it can be because you either have too small of a probe cover and you are not getting a good seal in the child's ear, or you just haven't placed it in the ear properly. So getting some help with that could help address the challenges associated with screening in these natural environments. Obviously you also may have to quiet down the environments.

And our last suggestion would be to screen in a different setting. But then that causes disruption and adjustment on the behalf of children that presents another challenge. So we encourage you trying to work with those initial suggestions first.

Terry do you have anything to add to that?

>> No, I think you covered that. Thank you.

>> And our last question is, in our program we wait until the

child is about seven months old to do the hearing screening. So is it okay to screen these children when they are just three weeks old and rely on those results as being valid?

The answer is yes, you can indeed screen children a few weeks of age and then in fact we would encourage you to do that. Now keep in mind, if a child has passed a newborn screening and it was really only three weeks ago, and you have those results, you probably don't need to rescreen those particular children and you could wait six months or even a year to rescreen them. We advocate strongly for annual screenings of children. We think that's a great way to go. So if you have a newborn screening result and you actually know that they pass, you could forego the screening on those little ones and devote your energies to children who are slightly older.

Terry do you have any additions to that comment?

>> Yeah, I would just underscore that actually this method of hearing screening we really implemented first in newborn nurseries so its roots came from there and it's very appropriate for all ages as far as an objective hearing screening method. But again if it was just these weeks ago in the hospital and the passing result, I concur with William on that annual screening recommendation.

>> So we will wrap up for today and I want to wrap up with one quick question of you. How likely is it your program would need training in OAE screening this year? And you know we would like to get a sense of what your needs are and then to encourage you to either sign up for our web class or get in touch with us and let us know why the web class might not meet your immediate need so we can explore with you other ways to get the training that you need. One thing I neglected to mention that I should right now is that most equipment manufacturers will tell you that they will provide some training. That is really not the kind of training we are talking about. They will introduce you to how the device works, but they are not going to be able to most likely really help you develop your screening program and learn how to screen children under a variety of conditions. I often liken it to the kind of training, a car salesman might be able to provide you about a new car. They will show you all of the features of the car but they are not going to teach you how to parallel park. And so the train tag we are talking about really gives you some skills and information about establishing a

comprehensive screening and follow-up program that most likely goes far beyond what a screening manufacturer can offer.

With that, thank you, Terry, for your efforts today and to our captioner, thank you for your services today. And to everybody else, thank you for all that you do to ensure the healthy and safe development of young children.