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QUALITY HEARING SCREENING PRACTICES FOR CHILDREN BIRTH TO 5  
YEARS OF AGE  
MAY 5, 2017

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>> Good afternoon. This is Tracy Dickson with office of special education -- in U.S. Department of Education. We would like to welcome you to our webinar today myself and be half of my colleagues with head start and Marco Beltron. I would like to introduce to you today, Will Eiserman with early childhood hearing outcome technical assistance. I have known him for a time now and pleasure of learning from him. You are in for a treat today with Will.

>> This is Will. Known as echo initiative at Utah state university. I'm joined by Jeff Hoffman who is a pediatric audiologist. We are going to take 15 minutes and talk about basics associated with screening with children birth to five years of age. We will open up to questions or comments you might have and you will be able to use a text field that reveal at that point in our presentation. We also like to begin at this place. With recognition that each day there are children who attend early childhood programs who have hearing loss but we don't necessarily who they are. Hearing loss is an invisible condition. How

can we reliably identify which children have normal hearing and which may not?

Short answer to that question is that professionals can be trained to conduct evidence-based hearing screening practices. We also like to point out that screening is the first step in the process of identifying a disability such as hearing problems. Since no screening method is 100% effective in identifying possible areas of concern, we always want to make sure we're clear from beginning that a parent or caregiver concern also overrides a passing screening result, no matter what screening method is used. Any conversation about screening should always begin with recognition that screening methods are not perfect and that whenever a parent or caregiver expresses concern, children should be referred for a thorough evaluation.

That's true with highly screened methods that we are talking about today. We also want to point out and let you know that evidence-based screening methods that are available now mean that it's really no longer appropriate for to rely on just subjective screening methods like a child's response to a ringing or a bell or clapping of hands or even just relying on a parent or caregiver's perceptions of a child's ability to hear. We can do so much more than that now because of the technology that is available. We are going to briefly talk about that.

Let's move forward and in this photo here, you probably recognize that this scene. You've been on one side or other of this window. As close as we look at our little children when they are born and after that as they get older, we cannot see a hearing loss. Hearing loss is common birth defect in United States. This is why we now screen children for hearing at birth. Even when babies pass newborn screenings, important to screen throughout childhood because hearing loss can occur at anytime as a result of illness or trauma or environmental or genetic factors.

Research suggest that incidents of permanent hearing loss doubles between birth and school age from 3 children and 1,000 at birth and by six in a thousand by the time they go to school. That increase is why it is so important to not only screen for hearing at birth but to continue to screen throughout those years. Commonly understood that language development at the heart of cognitive and social emotional development. We talk a lot of about language development in this way. Drives so many of the practices we see in our childhood settings. Important to note that hearing health is at the heart of typical language development. If we're going to be conscientious of language development, we should be equally conscientious of monitoring status of hearing throughout that period recognizing that could change at any point.

When hearing loss is identified early, this can significantly minimize if not eliminate delays have been historically associated with hearing loss and some of us as young people probably encountered

individuals who didn't have benefit of early identification of hearing loss. As a result experience challenges associated with communication and other areas of education that now can be rare if not absent a together because of what -- all together because of what early identification can afford to children. Let me show you examples of what consequences of early identification can look like. This little girl has a profound hearing loss and identified earlier and has had hearing aids and had them for very long.

>> I'm Crysta and I go to elementary school. My subject are math and reading and when I grow up, I want to be a teacher.

>> Early identification of hearing loss is all about giving children access to a communication mode. One way or another. They see children are using sign language and have rich communication access as a result of that.

>> Check out they see little boys. They have cochlear implants that afforded them amazing development of speech and language.

>> Hey. I'm A.J.

>> My name is Gibson.

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

>> I'm deaf too. And deaf means that your ears can't hear.

>> A.J. and I have special things to show you. Called cochlear implants. They help us hear.

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

>> That's really what it's all about. We want to make sure that children have access to communication options without any disruptions as much as possible. So let's talk now about screening methods. For -- we will start off with talking about methods from 3 to 5-year-olds. Two primary methods used with 3 to 5-year-olds are pure tone audiometric screening. This is traditionally been method of choice. In this way, screener constructs or instructs the child by raising a hand or placing a hand in a bucket. Once the screener is confident that child understands the game, real screaming is started -- screening is started. This listen and respond is repeated three different times with screener noticing response or non-response the each presentation. You have seen this or screened yourself this way. Pure tone screening is not an automated pros. Have to develop skills. The learning curve for pure tone screening is fairly keep one if done correctly. You have to teach each child to perform the task and be sure that's happening. Learn whether child is reliably performing that task to vary the sound pitch and timing during screenings and watching responses and recording those results. It's critical as part of this that screeners be thoroughly changed and parameters maintained for all children.

On our website, we have a teach me checklist for pure tone audiometric screening and set of new modules that will be showing up for learning how to do pure tone screening that elects to use this method. One of the things we hear a lot of about that there are challenges with

doing pure tone screenings, recognizing that 20 to 25% of children in 3 to 5 age bracket are not able to follow those directions and cannot be screened using those methods. In those cases, there needs to be another me. Those are otoacoustic emissions. OAE screening. We are seeing more kids opting to go with OAEs for all children. You want to consult with your decision-makers with help of an audiologist to determine. We have a resource that shows you concerns associated with each method. As you think about that methodological choice, you know what you are dealing with each of those methods.

>> We will focus on otoacoustic emissions. One thing that out to jump out at you, they see children are being screened in natural settings. Not in a sound booth or quiet room. Right where they are already partnering. Jeff who is our pediatric audiologist is going to explain OAE screens works.

>> Works with adult that is they are comfortable with. Play with a toy or held or sleep while screening is being conducted. Let's talk for a moment to talk about how this procedure works so you understand it's possible to screen a young child, screen them while asleep and relatively easy to do so. Screening is a automated screening. Once you begin screening, device itself completes all of the steps. You as a screener don't have to step through multiple pitches or frequency. To conduct an OAE screening, first thing to do is take a look at outer part of ear to make sure there's no sign of infection or blockage. Small probe is placed in ear canal. Low volume sound stimulus in the ear. Cochlea that is the snail part that you see on right side, cochlea will respond to sending a signal to brain and sending an emission. About 30 seconds, result is displayed on the screen as a pass or refer.

Every normal healthy inner ear produces emission that can be recorded in this way with the equipment. Let's watch a real time screening here. William?

>> Just so everybody is clear. OAE screening is only best evidence-based methamphetamine birth to three years of age subsequent to newborn hearing screening and may be an option for 3 to 5-year-olds with pure tone screening. For birth to 3-year-olds, OAE is way to go.

>> This is real time screening. Will give you a sense how quick it can be .

>> Pass. Yay!

>> Thank you. Okay. You want to put in other ear. Let's try that one. Ready? Ready? Had he already did it!

>> 30 seconds per ear when child is cooperative and individual doing screening is trained, we can get them screened rapidly and in a variety of different environments. With both types of screening, there need ton preparation and training. Why we exist is to provide resources to help with that. We encourage you to go to [kidshearing.org](http://kidshearing.org) and learn about resources that we have there. Build comprehensive training program not only to learn the procedure but to have all of resources you

need, protocol to follow for when children don't pass, screening forms, tracking tools, referral letters, we've got it all not just we created it because we worked with hundreds of programs across the country and learned alongside them. Resources they have shared with us, we are able to share with you.

What we're going to do is wrap this up by quickly showing -- this is a comparison of two methods for children 3 to 5 years of age. Some of issues that would need to be concerned have to do with automation, cost, the setting that can be done in. Age levels or developmental levels children you can screen, and what happens if you can't test. All of that is covered thoroughly in a document that appears on our website. If you're looking for information about 3 to 5-year-olds. And what to do methodologically. Most of them focus on OAE screening that is all applicable to any age child that is decided to be screened with OAEs. This is what our website looks like at [kidshearing.org](http://kidshearing.org). You will see OAE screening and pure tone screening. You click on OAEs, will take you to a page that will look like this where you find video modules, all of our implementation tools, protocol guides and forms. Letters for parents, referral letter and say tracking tools. Really everything you need from A to Z in order to plan for, learn and then to implement OAE screening and program. With that, that was very quick. Those slides are downloadable here. I'm going to park them over here. Third one here that says coffee break screening. I'm going to invite questions or comments that you would like to share with us first is a question -- can you please clarify once den methods of -- once again methods of choice based on age.

Birth to 3 years of age if your lay screener is developing a program, OAE screening is best evidence-based method for you to use.

If focusing on 3 to 5 years of age, you have couple of choices to consider. Historical precedence of pure tone screening. More and more people are considering OAE screening because it is easier to do. Some would say afford you same benefits. More careful thorough discussion of those considerations appears on [kidshearing.org](http://kidshearing.org).

Next question is actually about children who are identified. This question is, why or why not teach a child to sign even if they have cochlear implants? Jeff, do you want to take that question?

>> Yeah, it's something in preface to responding to this, communication option is really a parent's choice. And so some parents are going to opt for teaching sign in addition to language for a child who has a cochlear implant. Part of that depends on to extent to which family is involved with Deaf Community. And possibility that a child's hearing may continue to change and sign language may be primary modality in the future. Other parents are wanting their children to function in the hearing world. So opt to go with spoken language to the extent that it's possible with cochlear implants which is not an option 20 years ago before cochlear implants became as common as they are.

>> The next question is, does a professional train staff for

both of them see types of screening. Answer is yes. And we would strongly encourage you to reach out to a local pediatric audiologist who may be able to help with providing that training. For OAE screening, in addition to having a local audiologist, we offer web-based trainings that you can access through and learn about through our website, kid's hearing dot-org. We finished one and will be doing one in late July. It's a four-part class. We take people through entire process of learning rationale for screening, how to do the screening, how to operate your equipment. Follow-up screening protocol and resources available for full implementation. Feel free to e-mail me through website or in a moment, I will reveal my e-mail address on the left. If you want to learn more about training options. We can help you with that.

Let's see. Do you see any other questions here?

>> Do our tapings produce a certificate. Provided that you do your assignments, hands-on activity for developing screening skills and submitting online report of that. As far as getting any kind of certificate of completion for partnering in coffee break series, they see are not being offered for short webinars. Any other questions that we can help address here?

>> Here is one. I have a 2-year-old client who has had multiple ear infections. I referred mother to pediatric to assess it. Would they do an OAE? Or other type?

>> Most likely, evaluation would be more expensive than -- extensive than OAE. There may be another primary test to do. At that age, audiologist would get pure tone testing also. Just in sound field also and headphones. Yeah, I guess that's all I have to say there, William.

>> Thank you.

>> We invite you all to go to kid's hearing dot-org where you will find short videos that summarize the content that we covered today about importance of hearing screening as well as methodological options there for aged. Get acquainted with that and share with other.

Next question is, do children with cochlear implants have their language monitored and if they are not acquiring something --

>> I think if they are not acquired language at development rating, are family informed. Not all the question is there. Children with cochlear implants are involved with speech language development quite extensively. That's on an ongoing basis.

>> Right. Right. Next question is, does pure tone consist of earphones and children pointing to an ear that they are hearing from? Can you explain pure tone screening, Jeff, briefly?

>> Pure tone screening is done we're phones so you can test the right ear and left ear. Child does a task in response to hearing a sound. That may be they drop a block in the bucket or ring on the peg or raise their hand. Some people do have them point to the ear that they are hearing this sound, that's really a more complex task for them

to do. And a little bit more developmentally challenging for some kids today. Important thing is, you know which ear tone is going in to and respond to hearing the tone. I consider it very optional to have them point to do ear that they hear the sound.

>> One of the things that we're concerned about, many people doing pure tone screening that have not actually received training for that. We have learned about some of the modifications that people make to screening processes that are not appropriate. Adjusting volume in ways that they shouldn't. Giving signs that help children pass screenings when they wouldn't normally be passing. Those are all subtle skills that need to be developing as part of developing proficiency as a pure tone screener.

If you or if you are in a school or in a setting where pure tone screening is being used, it's really important to be asking about the quality of training and preparation and what standards and protocols are being followed by those implementing the screening. As is true with any kind of health screenings with most important part is what happens when children don't pass. We want to make sure that there is a sensible, logical and feasible follow-up plan when children don't pass in one or both ears regardless which screening is being used. We have a detailed protocol from our website that we use. We encourage you to get acquainted with it. Looks like this. Take some time to get acquainted with it. It's identical with OAE screening protocol. We encourage you to make sure that is in place as well with which ever method is being used with youngsters that you are concerned about.

One concluding questions, are families encourages to add ASL if child is not acquiring spoken language at adequate or appropriate developmental levels?

>> You want to address that question?

>> That's highly individual on a child or family whether that's encouraged or not. You know, one of the things is -- fairly high percentage of children with hearing loss have additional disability of some sort. That would have to be taken into account.

>> Many different degrees or types of hearing loss. Children with unilateral or moderate and mild hearing losses may not be as strong as -- candidates than others. Are providers recommending particular communication modes? That can be quite different from one provider to the next.

Where everybody has their different perspectives and biases and preferences. So there is certainly a full spectrum of the ways in which providers are supporting families who have children nearly diagnosed with hearing loss.

>> Really, approach now that is strongly encouraged especially through newborn hearing screening and also through pediatric audiology is that to provide unbiased objective information about all of communication options and work with family on choosing what is -- what they believe is best for their child.

>> So thank you, everybody, for attending today's webinar. This webinar has been recorded. And will be posted on infant hearing dot-org in the next week or so. You will receive e-mail that will tell you where they are to be found once posted. Two more upcoming webinars as a part of our coffee break series. On Monday, 2:00 p.m. Eastern time, same time as this one, our topic will be using a multimodal approach of supporting them with hearing loss. We will have a coffee break webinar from center of technology and disability in which they will be discussing free resources to support the use of assistive technology in young children with disabilities. We hope you will join us for those and share opportunities with others who you think may benefit from that. Tracy, thank you for your help.

>> If you could take a moment to answer the evaluation questions, we would appreciate it. Thank you.

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