Live captioning by Ai-Media

DR WILLIAM EISERMAN:
Will be starting at the top of the hour. If you have a moment to go into the chat and into the state that you are from, that would be great. It is always nice to know where everybody is.

Gunnar, do you have the evaluation link to post in the chat at the end?

SPEAKER:
Yes, I will have that ready to go.

DR WILLIAM EISERMAN:
Great, thank you.

Hi, Emily, thank you for joining us today. Would you like your mic to be activated, Emily, so you can speak to folks? OK. Gunnar, can you activate Emily's -- microphone so she can say a few words?

SPEAKER:
Thank you, I see it.

DR WILLIAM EISERMAN:
Thank you, Emily. Good to hear you!

SPEAKER:
You as well. I am looking forward to this. How many people did we have?

DR WILLIAM EISERMAN:
32 as of this morning.

SPEAKER:
Right. That's my great. The second push helped.

DR WILLIAM EISERMAN:
The second nudge. (Laughs)

We will give it a few more minutes so that people have a chance to make their transition they are needing to do. For those of you who have just signed on, if you could go in the chat and put in the state that you are from, that would be great. For right now, we will just ask you to withhold any questions until we open up the floor for questions. But I see Jane asked about contact hours for today. At the end of the session, you will have an opportunity to do an evaluation that generates a certificate of attendance for today that will give you an hour of webinar time so if you need that for training credit, you will have that.

You will have that document. We are going to start here in just a few minutes. People that are signing on fairly rapidly now so we will give people a chance to make that transition. If you have not already, go ahead and type your state into the chat so that we know where you are from.

We will give it one more minute and then we will start, how about that? Thank you for joining us, everybody, if you can type your state into the chat window, that would be great. We will not use the chat during the presentation today until we open up for questions but if right now you would not mind typing in your state that is always helpful for us to see and there are people from a lot of different places so that is really nice.

Emily, do you want to just kick us off then we will dive into it?

SPEAKER:
Absolutely. Thank you for joining us today. This was created for consultants to learn about training opportunities that are available for school nurses across the country. This started as a conversation on our Google discussion board, what do you use for training in your state, that sort of conversation, and I'm so excited to learn… I did not know about this resource before so I am glad one of the consultants did directly to this, to you, and I reached out and you are very willing to offer this training for consultants and work with any individual states if you are more interested in learning more afterwards than that is up to you.

Thank you for joining us today. From all across this country and it is good to see names in the chart.

DR WILLIAM EISERMAN:
Thank you. I am will Dr Eiserman, associate director of the national Center for hearing assessment and management at Utah State University and I'm joined today by Terry Foust who you see there. Terry is a pediatric audiologist and a speech and linkage pathologist who has worked with us at the University as a consultant for 20+ years.

We will wait telling you a little bit about what we have been doing over the years. The national Center for hearing assessment and management at Utah State serves as a national technical resource Center on Early Hearing Detection and Intervention. We are funded by the maternal and Child health Bureau and for many years, we have been funded by the office of head start. A lot of the resources that we have available that you can use were developed by our head start funding.

Even though I know you have a much broader age range of concern, everything we will be talking about today really cuts across a broad age spectrum. Even though it may have a kind of early childhood feel to it, by no means does this restrict its application to other kinds of populations so we just wanted to make sure you are aware of that. That is Terry and me and in fact we will turn off our videos here because you don't want to see us.

The work that Terry and I do is housed in an initiative at Utah State called the Early Childhood Hearing Outreach Initiative. And that initiative or the ECHO Initiative is based on the recognition that every day

there are children who are deaf or hard of hearing attending schools or receiving other healthcare services without their hearing related needs really being known.

Hearing loss is what is often thought of as an invisible condition, the question is : how can we identify which children have normal hearing in which may not?

DR TERRY FOUST:
This is Terry here. In regards to that question, William, the short answer to that question really is early hearing care and education providers can be trained to conduct evidence-based hearing screening and the same hearing screenings that you see here in these photos. The ultimate outcome of hearing screening program is that we can identify children who are deaf or hard of hearing who have not been identified previously.

So keep in mind that hearing like vision can be comprised of all degrees of severity and sometimes it can affect only one ear or both ears. You probably recognize the procedure on the right. And that is where you see these kids raising their hands and that is called Pure Tone Audiometry screening and that is historically been the most commonly used screening method for children three years of age and older. And you will still see this and many early care and education settings and providers in those settings using that.

On the left, you will see what is being used as a procedure called Otoacoustic Emissions or OAE hearing screening. And that is the recommended method for children that are birth to three years of age. Increasingly recommended for children 3 to 5 years of age as well as older children. We will talk some more about that. We will be talking primarily about Pure Tone screening today but we will also briefly discuss all AES I mentioned.

Because I suspect you will be hearing more about this in the future if you have not already and at some point you may consider using it.

DR WILLIAM EISERMAN:
Let me give you a quick overview of what we wanted to cover today and while this presentation is not a training per se, our goal is to provide an overview of the big picture of what is involved in implementing evidence-based hearing screening for children across the HVAC term.-- Age spectrum

Those of you who are giving guidance and encouragement to nurses throughout your state, know what you should be aiming for in terms of the quality of screenings to be done and the quality of training that should occur around the preparation for that. We will start off with just a quick introduction, a review of the auditory system so that we are all understanding how the auditory system relates to the hearing screening methods we will talk about today.

Then we will talk about why we screen because sometimes those of you who are involved in doing screenings need to explain to parents or teachers or administrators the reason why you want to spend the time doing it. We will then go through the Pure Tone Audiometry procedure and talk about some of the steps that we need to be sure people are trained in. We will introduce you to OAE screening so

you know what that is about and we will talk about the follow-up protocol recognizing that the most important part of doing screening is what happens when children do not pass.

So we will talk about that a bit and then we will point you to some helpful resources and address whatever questions you may have. So this is being recorded, by the way, so if you review this later, on our website you will be able to skip forward according to these different topic areas if you wanted to review something we have talked about before.

Before we launch it all of that I wanted to make sure you know where to go after today's webinar to get a lot of resources that you are needing. Our website is kidshearing.org what you see right here. We have a wide variety of resources there to help people plan for, to learn, to access training for both Pure Tone and OAE screening as well as all of the tools you will need for documenting screening results, all of that.

Let me give you a quick look. This is our landing page. You will see in this first area we have planning resources and that includes wrapping your head around the big picture of hearing screening, how to find an audiologist in your local community, information about selecting and purchasing equipment for screening.

In the second group is where you will find training resources. This points you straight to our website learntoscreen.org where you can take an online training course in either of these screening methods and this is where you will find that.

Those are the training courses. The next group of resources is everything you need to actually be implementing your screening program. Preparing for screening, the protocol guides and documentation forms, letters to parents, referral letters to healthcare providers or audiologists and most of those things are in English and Spanish.

And they are available to download and use or adapt however you would like. Then follow-up resources. How to track a group of children through the screening and follow-up process and how to monitor your screening practice for quality. So, again, kidshearing.org and learntoscreen.org for the actual training.

Those are where you would want to go after today. I will remind you of this at the end as well. So, let's put all of the resources and contexts for a minute and make sure we all understand the basics of the auditory or hearing system so Terry, as our audiologist, why don't you take us for a quick walk through the ear?

DR TERRY FOUST:
Thank you, William. Let's just do that. There are three main parts as you all know to the auditory system. We have the outer ear, the middle ear, and the inner ear or the cochlea. As sound enters the outer ear, it causes the eardrum to vibrate which then moves the three small bones in the middle ear. This movement stimulates thousands of tiny sensitive hair cells in the snail shaped portion of the inner ear that is called the cochlea.

From that inner ear the sound is carried along the auditory nerve, special nerves to the hearing centers of the brain and that is when the individual experiences this sensation that we call sound. So while this is how the auditory system typically functions, there can be exceptions.

There can be temporary issues such as a wax blockage, or fluid in the middle ear that is caused by ear infections that we may discover and get addressed during a hearing screening. But the primary target of hearing screening is the functioning of that inner ear or cochlea that is again this now shaped portion of the inner ear. In some instances, the sound travels through the outer and middle air and it goes through normally the way it should but when it reaches the cochlea, that signal is not transmitted to the brain normally and that results in what we call sensorineural hearing loss. Or sensorineural loss.

This condition is usually permanent. And that is the primary condition for which we are screening in mass screening efforts.

DR WILLIAM EISERMAN:
Thank you, Terry. Sometimes this comes as a surprise to folks but it is an important fact for you to know that sensorineural hearing loss is the most common anomaly or birth defect in the United States. It affects about three and 1000 children and that incidents of permanent hearing loss along with the advent of technology that allows us to screen for and ultimately identify permanent hearing loss in children, as early as shortly after birth, has resulted in the underlying rationale for the newborn hearing screening program known as the EHDI system or the Early Hearing Detection and Intervention system. The system has been in place for about 30 years.

Over these years, it has grown substantially, about 98% of all babies born in the US see the hearing screening shortly after being born, usually before even leaving the hospital. As I said, the research suggests that the incidence of permanent hearing loss actually started at three in 1000 but by the time children are in school it doubles. To about six and 1000.

That number continues to grow in subsequent years. So as wonderful as newborn hearing screening is so that we can identify deaf babies, we have to continue to screen because the incidence of permanent hearing loss continues to unfold.

DR TERRY FOUST:
Yes, absolutely, sorry I thought I'd muted myself. So as William said we can't only screen at birth and besides fight we will identify all children with hearing loss. We have to screen throughout early childhood, because hearing loss can occur at any time as a result of illness, physical trauma, or environmental or genetic factors.

This is often referred to as late onset hearing loss, and that simply meaning that it is acquired after the newborn period.

DR WILLIAM EISERMAN:

is commonly understood I think especially in the educational field that language of element is at the heart of cognitive and social emotional development, school readiness and academic achievement. That drives many of the practices that we see in educational settings.

Think about how much emphasis is always placed on language, starting early in life and when we start counting the words to children produce and get excited about. Is also important to note though that hearing health is at the heart of typical language development, and that if we are going to be conscientious about promoting language as a part of our commitment to school readiness and academic achievement and all of that other stuff, we should be equally conscientious about monitoring the status of hearing throughout childhood.

If hearing is compromised, then typical language development will ultimately be compromised as well. And we don't want to wait for the language delay or an academic issue to surface or social issues to surface to then discover that the child has a hearing loss.

DR TERRY FOUST:
And that's why we see so much emphasis being placed on monitoring the status of hearing and children. We do that by conducting hearing screenings. But, what actually is screening?

So, screening can be thought of as kind of a sorting process, it helps us separate the children who are at risk of having a condition from those who are far less likely to have that condition. Those in at first, at risk group, are then followed with additional steps. In this case with hearing, those additional steps would be implemented by a pediatric cardiologist, and healthcare providers to continue to refine that sorting process until we definitively identify the small group of children that have hearing loss.

And to be blunt, we screamed because we simply can't provide a full comprehensive audiological evaluation on each and every child. So, screening then followed by appropriate audiological assessment and early intervention, it can really dramatically improve options and outcomes for children who are deaf or hard of hearing.

When hearing loss is identified early, then we can make sure the child has access to language, and as a result children who are deaf or hard of hearing are really thriving in ways that used to be rare. And by providing hearing screening, you can be part of creating these really amazing and life-changing outcomes that we are seeing. So we wanted to take a minute, and take a look at several examples of children that have severe to profound hearing loss, and they've had the benefits of early identification. So we found the loss early, and quality intervention.

So these children, as you will see their learning, thriving and communicating. DR WILLIAM EISERMAN: Celestica look, these first two little girls are both deaf, have bilateral hearing aids and listen to how they are playing together with their dolls.

(Video plays)

DR WILLIAM EISERMAN:

in this next example the family of these deaf children have decided to rely primarily on manual communication, or sign language. And yet, these children have access to language also come and look at how proficient they are at communicating.

(Video plays)

DR WILLIAM EISERMAN:
In this last example these boys are both deaf and they will tell you how they communicate.

(Video plays)

DR WILLIAM EISERMAN:
So so those children remind us of our goal, we want to make sure that all children have access to language one way or another throughout early childhood, and that they haven't experienced a hearing loss that we missed.

In the best way to stay on top of that is to be implement Inc. quality periodic hearing screenings.

DR TERRY FOUST:
As he mentioned a few moments ago, Pure-tone Audiometry and OAE screening are the recommended methods we are talking about with you today. The availability of these methods of Pure-tone and OAE screening really means that it is no longer necessary or appropriate to rely solely on subjective methods that we have used in the path, and those subjective methods are things such as ringing a bell behind a child's head or depending solely on caregivers perceptions of a child hearing.

And I want to be sure you don't misunderstand me, observations of a child's response to sound, especially the lack of a response, is helpful and we should pay attention to how children do or do not respond to their environment.

But, these sort of observations do not constitute a hearing screening, because they are far too crude and unreliable and, really frankly, we can just do so much better because of our current available technology.

DR WILLIAM EISERMAN:
it's also important to note that, although some healthcare providers have incorporated evidence-based hearing screening into well-child visits, this really isn't standard visits-- practice.

DR TERRY FOUST:
It really isn't, some parents may report with a lot of certainty that there hearing care provider did perform a hearing screening, but it's important to understand, and I can't emphasis-- emphasize this enough is next as an audiologist, routine care by healthcare providing providers should not be mistaken as hearing screening, we really need to have.mentation that an actual hearing screening has been done consistently in that context, that programs like yours and others are adopting hearing screening practices because there's obviously an increased recognition of the importance of

monitoring hearing and it is now feasible to do this in programs like yours, and by people like you.

DR WILLIAM EISERMAN:
So, the take-home message is this, and let the child health and medical records included child stock mentation of your specific hearing screening results in the screening method used, we just never assume that a hearing screening was completed.

DR TERRY FOUST:
Yeah, and another important point to remember, and we talked about how now that we have these screening methods will need to use them, but I just want to remind us all that caveat that nothing is perfect.

And so while Pure-tone and OAE screening are highly reliable screening methods, they are not perfect either, and that means that there may be some rare conditions that are not identified through these screenings. So whenever a parent expresses concern about a child's hearing or language development, even if they've passed-- received and pasta hearing screening using one of these methods, that child should be referred for an evaluation an audiologist, we don't want to miss any of those kids.

DR WILLIAM EISERMAN:
So, let's talk now about the two screening methods for hearing, you probably already know the Pure-tone screening method because you've heard of it or you had your own screening this way, but in this procedure as you know, musical note like tones are presented to children through headphones and children provide a behavioral response, a behavioral response like raising a hand to indicate that they have heard the tones.

Pure-tone screening gives us a good idea of the function of the entire auditory system, all the way to the brain, when the child shows us a physical or behavioral indication that they perceived the sound. It is a fairly affordable method, the screening equipment costing between what, Terri? $800 to 1,000?

In the equipment is durable and portable, which allows us to easily transport and use it in a variety of locations, and wide variety of individuals can be trained, it but training is really necessary.

DR TERRY FOUST:
So let's talk about conducting a Pure-tone screen, so to conduct a screening using Pure-tone, we are first going to look at the year, make sure there's no visible sign of infection or blockage. Then if that year appears to be normal, then the screener, you as the screener, what instructor condition the child and how to listen for atonement and respond by raising a hand or participating in a game, like placing a toy in a bucket.

This step can take some time, especially with younger children, and children who may have some developmental delays, for example. In order to allow us to be sure that the child is able to reliably complete that screening task. Once the screener has observed that the child reliably respond to sounds that are presented just as the screener instructed, that is the point that the actual screening is

started.

DR WILLIAM EISERMAN:
And that might take five or even 10 minutes to get to that point with some children, right?

DR TERRY FOUST:
Absolutely, and you want to make sure that they make the association of the presence of the sound to the action, the behavioral response, such as raising their hand. So, once then that connection is made and you feel the child understands that and can reliably respond, then during that screening process, that listen and respond game will now be repeated at least twice at three different pitches on each year.

And then we are noting the child's response, or lack of response after each tone is presented. If the child responds appropriately and consistently to that range of tones presented to each year, and the child passes the screening. So, right here this is an example of the actual screening steps that you will need to document for each year as you screen.

Now, one of the downsides to this procedure is that it is not automated or objective. So, the screen is constantly-- you've got to constantly control the environment. We have variables with your own behavior as the screener, and that of the children to ensure that all those conditions are being met to ensure that a child is responding only to the sound being presented.

So, each of the blank lines you see beside a frequency or a pitch level represents an action taken by the screener, and a response or nonresponse that needs to be recorded. Through the training process you will learn all of the steps and all of the environmental conditions that need to be monitored and met as you complete the child screening. Based on these results, the screener will determine if each year passes or not. Again, the device itself does not produce that result as you will see in a moment. Is the case with OAE screening.

DR WILLIAM EISERMAN:
On kidshearing.org, there is a screening skills checklist and this goes a long way for one of the trainings that we offer, Pure Tone screening, but walks through all of the critical elements of the screening process to make sure that a screener is doing it properly. And like so many tasks that can look simple enough from an observer's perspective, conducting Pure Tone screening is actually quite complicated.

There are many ways that one can make mistakes that can invalidate the screening. This is why training is so important and why it is important to refresh ourselves on all of these appropriate steps. Overall, it is really important to remember that as much as we want children to succeed, the goal of hearing screening is not to help a child pass. And there are ways we can either unintentionally or even with some purpose, help a child.

Which can invalidate the screens. And we all want children to succeed. But we have to restrain ourselves in these screening situations. I was in a large meeting where we were talking about the

difficulties and challenges of implementing Pure Tone screening and there was a woman who raised her hand and said "I do not want to brag, but I can tell you that I am able to pass almost every child."

"All I have to do is give them a nod or raise my eyebrows to let them know that they should now be hearing that sound and then they would raise their hand." That actually totally invalidates the screening process. As would a lot of other things like having reflective surfaces in the room where they could just kind of see the movement of the screeners hand pressing the button or if the screening, if the sounds are being presented at a predictable pace, they know when to raise their hand.

Or, as we have also had confessed to us, people will say "sometimes we are not able to control the environment where we are screening very well and it can get kind of noisy. So I just increase the sound. The volume level".

That invalidates the screening. There are many things that we try to alert people to and teach them that are not always that obvious. That we each can do and that would prevent us from actually getting inaccurate screening. And the ironic thing, I guess, is that do you know who the most difficult children are to screen? It is the children who have hearing loss.

(Laughs) So we really want to make sure we adhere these very tight, rigorous steps. So we are able to find those children and get them the help that they need. I am just going to move on in the interest of time.

That is Pure Tone Audiometry screening and we will show you in a minute where you can go on our website to get training for the folks that you want to make sure are implementing Pure Tone Audiometry and inequality way. But as-- quality way

As you mentioned there are probably some children who cannot be screened with Pure Tone methods. In younger population, five or six year old or younger, research has shown that 20 to 25% will not be able to be screened with Pure Tone and we also see that with children whose primary language is different from our own nor children who may have certain disabilities. They may not be able to be screened with this method.

And we want those children to be screened as well. In fact, sometimes it is the children for whom Pure Tone screening is impossible that it matters the most that we get a hearing screening. So what do we do in those instances if we cannot condition them to reliably respond to the so-called game we are playing, the behavioral response game? What do we do?

DR TERRY FOUST:
Fortunately, William and everyone, the other method we have mentioned this morning is a great alternative, we have it as an alternative and that is Otoacoustic Emissions or OAE screening and you do see that occurring in these photos here on this slide. This is the recommended, as we mentioned earlier, the recommended hearing screening method for children birth to three years of age.

As you will see a moment, the ease and speed of this screening is actually causing many people to

reconsider the use of Pure Tone Audiometry with older children. Some schools and healthcare providers are switching to OAE screening for all children and that is simply because they can then use one method, one type of equipment that can be used with all children regardless of age and regardless of developmental levels or primary language.

DR WILLIAM EISERMAN:
One of the things that we really love about OAE screening, especially for younger kids, as we can screen children and a wide range of environments. You notice that in these pictures here, they are not being screened in a foreign environment that is strange to the kids, we go to where they are in their everyday environments, their classrooms, even outside play environments.

And the people that are doing the screening can be either teachers, school nurses, people that they know. And that is wonderful. It can really allow us to get a lot of children screamed in a very condensed period of time.

DR TERRY FOUST:
Yes, in fact the screening works best when children are familiar and comfortable with the adult doing the screening. And where they can play with a toy, they can be held or even asleep while the screening is being conducted. Being able to go to children can really speed up the amount of time that it takes to screen a group of children.

DR WILLIAM EISERMAN:
Terry, why don't you give us a quick run through of the OAE screening process. We know a lot of nurses in your schools may not be using this yet but if they have not already heard about it, they are going to. So it is good that you just have a sense of what OAE screening is.

DR TERRY FOUST:
Yes, we will just do a quick review here. Again, very similar to Pure Tone screening. We will first take a thorough look at the outer part of the year. Again, to make sure there is no visible sign of infection or blockage. Things look clear, then we are going to, we have a small probe on which we will place a disposable cover. Then that is going to be inserted firmly into the ear canal.

Than that probe then delivers a low volume sound stimulus into the ear. So that cochlear, the inner snail shape portion of the year, a cochlea that is functioning normally will respond to that sound simulation by sending the signal to the brain while also simultaneously producing an acoustic admission. In this admission then is analyzed by the screening units, and in approximately 30 seconds or so the result will appear as either a pass or refer.

Every normal, healthy in her ear-- inner produces an omission that can be recorded in this way. Unlike what we saw with Pure Tone screening, the person doing the screening does not have to manually step through the various frequencies and tones being tested. Once the probe is in the air, the screener presses a button and the entire screening process is completed automatically.

And that simply eliminates all of the various possibilities for error that we are so concerned about with Pure Tone screening. Regardless, it is still required -- still requires thorough training which can be accomplished online just like you can complete the Pure Tone screening online at learntoscreen.org as well.

DR WILLIAM EISERMAN:
Let's take just a quick look at what this screening actually looks like because you may not have ever seen this. This is an actual, real-time screening, unedited, of a little well behaved child. Being screened. And you will see it here.

(Captioned video plays)

DR WILLIAM EISERMAN:
She is putting the probe in the ear and then she will push a button on her handheld device that you will see in a moment here. And that clapping means they already got their results, either a pass or a roofer.-- Refer

(Captioned video plays)

DR WILLIAM EISERMAN:
There you see the device.

So you can see that there are a lot of advantages to being able to use a method that that is so quick. It is just something you may want to be considering, especially for children that are not going to pass, are not going to be screen of all. Using the Pure Tone method. So, we have talked about are two screening methods but regardless, which method you are using, eventually there will be children who do not pass. So what then?

In order to be evidence-based, your screening process has to include a follow-up protocol for when children do not pass. And we have to emphasize that our screening efforts are only as good as our ability to systematically follow up on children who do not pass on one or both ears and I know that in some schools, the response to this is that they just provide the parents with the letters saying they did not pass and hoping that the parents will just complete the next steps.

But that usually is insufficient. We need to make sure we are actually following up to make sure those follow-up steps occur. So let's just give you an idea of what follow-up should look like. In the most ideal circumstances. We have used this protocol in literally thousands of settings.

And we identify children when you follow this process. So we are going to screen 100% of the children, we expect about 75%, perhaps a little bit more than that, as children get older will pass. And that will leave the remaining 25 or 20, maybe 15% if it is older children, will not pass. The reason why it goes

down over time is because ear infections go down over time.

When you have those younger kids, they will have more that will not pass. When we screen those children a second time, that small percentage that do not pass, before we make a referral to anybody, because we do not want to overwhelm parents, children, or healthcare providers with too many children that are going to ultimately pass anyway.

After they get the second screening, many do pass because sometimes we did not screen them correctly or they had an ear infection that went away or a wax blockage came out and now we are down to about 8% that have not passed twice.

So those children we refer to a healthcare provider for a middle ear evaluation to see if they have something chronically going on. And if not, we will be screening them right away again. If they do have an infection, we will wait a while, three weeks, maybe four. Then we screen them one more time.

If those children still do not pass, they are referred to an audiologist for a complete audiological evaluation. This protocol is on our website, so this is just given to you as a quick introduction to the idea of a follow-up protocol.

This is the protocol walking through those very steps. The main idea here is for us to recognize that a child screening process is complete under only one of two conditions. Either they have passed the screening on both ears, or they have gone to an audiologist. Anything in between there, if they are going off to a healthcare provider to look in their ears, to treat their ears, whatever, that process is not complete until either we find that they have passed or they have been to an audiologist.

We always want to highlight that so we do not let go of the steering wheel too soon in the process. Remembering that children who do not pass and do not pass repeatedly are at an increased risk of actually having a hearing loss.

So, our website, we will open up the floor now for questions if you want to type them into the chat, but our website is kidshearing.org, and this is where you will find information about planning for quality hearing screening practices, you can learn about equipments, where to find an audiologist, someone you can either refer children to or help with individual children.

This is where you will find access to the training for both Pure-tone Audiometry training as well as OAE training. All sorts of resources for screening like documentation forms that reflect that protocol, referral letters to parents, all of that is free for folks to download and adapter use however you would like there, and then follow up resources.

We have a tracking tool there where you can enter all the children you are responsible for screening, and you will know exactly which ones are needing follow-up and monitoring that follow-up process so that ideally you know the status of every child you are responsible for screening.

So once again, learntoscreen.org is where you will find the courses that are available to take online.

You can do it as groups, or it can be done as one person at a time. We recommend people doing this before they do a lot of screenings. So, if at the beginning of the year screenings are done, we would encourage nurses to take this course right before, whichever method or methods are being used.

So, let's see if any of you have any questions or Emilie, if you have any additional thoughts that you want to share with your members who are on with us today about any of this.

EMILY POLAND:
I guess the only thing of a chair as I did take your training, the Pure-tone Audiometry training, and I was lucky enough to have a course that I took when I started in school nursing to do hearing screenings. But, knowing that there are so many nurses who have not had any kind of training, what an amazing opportunity it would be to actually have this training before you are thrown into a school and say "here, go screen 500 kids", so I found a very helpful.

DR WILLIAM EISERMAN:
The mistakes we can make without even knowing it, there can be a window that is right behind us that children can see us actually clicking the button to make the tone go, and we don't realize it. The children are raising their hand because they seen that. And in fact that's the irony of Pure-tone screening, is that with children who have a hearing loss, that's the actual accommodation they've learned.

They have learned to watch for physical cues. And so they can fool us. And that's why children with hearing loss have traditionally been found later than we want, because they have learned to accommodate just enough so that people don't realize that they are struggling.

DR TERRY FOUST:
William, I see there's a question as well about "what about otoscopic evaluation as part of the screening?", And that's a really wonderful thing about this group here with each group at the training, you can take that with your training to a full training, so that's great.

DR WILLIAM EISERMAN:
And Louise is asking about the cost of the OAE, so the OAE is more expensive than Pure-tone screening. It costs about $3800 right now and you also have to budget for those disposable probe covers which range from about $0.25 to a dollar a piece.

So there's definitely a cost to OAE screening for sure that needs to be factored in. The good news is, clubs like the Lions Club, Sir Thoma club, other local charities have been prioritizing hearing screening is one of their initiatives, and funding the purchase of equipment for schools and programs like head start, so that might be a way to get those-- the equipment costs, covered.

Any other questions we can help with?

DR TERRY FOUST:
I will suggest in regards to equipment, while people may be thinking, the equipment really does last

well, endure well. We have pieces of equipment that have been out for years and years, so I think you should be able to expect 8 to 10 years have performance out of your equipment.

DR WILLIAM EISERMAN:
Yeah. I don't know what you would typically expect the follow-up process to look like in a school, I know with my own child in elementary school when either dental screenings or hearing or vision screenings were done I don't think there was a lot of effort put into making sure the children that didn't pass actually had the next step accomplished.

And that is like, so critical. And it is not going to be a huge number of children, but boy those children really need to make sure-- have somebody making sure that they've had that step accomplished. So, we have another question here about tympanometry. What about tympanometry, coupled with Pure-tone testing as part of a standard hearing screening? Terri, do you want to comment on that?

DR TERRY FOUST:
Yeah, that's actually been typically the screening bundle so to speak, was combining both of those with the ultimate goal of trying to not over refer children with middle ear conditions to providers. And so, if you are trained in that and you have that ability, sure.

We did try it with our oto acoustic omissions, OAE, and we found early, and we may have alluded to this earlier in the presentation, but our protocol and OAE was actually helping us find those conditions as well. So, it is not necessary, and your screening program will be streamlined and much more efficient, but if you are expressed with it it's a great addition to your test battery.

DR WILLIAM EISERMAN:
And Louise I'm so glad you asked this question, because I may have missed conveyed this. All of our resources are free, but the training does require a fee. And the reason why we are able to offer all the free resources we are is because they were developed through consecutive grants that we had from the federal government, from the office of head start and the Maternal and Child Health Bureau.

We for years were able to provide free trainings until our grants ended, now those resources are still available, the training has been modularized and put on our website so that people can just independently work through them. We didn't want to retire all of our resources once our grant ended, so we thought, let's put these into modules so that people like your school nurses and others can continue to access training that they need.

We have hundreds of head start programs going to this training now, home visitors and people in part C and part D early intervention programs using this as part of their trainings as well. So, if that is helpful to explain to your schools, also just know that if you need to contact us you can through our website, kidshearing.org.

If you have any in particular questions, I am happy to address those. If, in your work with an individual state, you feel like "gosh, this information in whatever format would be helpful to present again to any of your membership", let us know, we may be able to do a webinar like this or shorter version of this if

that would be helpful to you.

And they will be a link to this that we can send out from today's webinar that you could send out to your individual nurses at schools if you have those folks to reach out to to share with as well. So, lots of possibilities. I always get concerns that when we are talking about these things it sounds like we are doing a sales pitch.

And I don't want it to sound that way, because we have been funded for years to provide training and technical assistance to Headstart and other early childhood programs, and we have seen, Terri and I have seen the results of the identification of children who are deaf who people didn't know were struggling.

It is important to know that hearing is like vision, it can be all degrees of hearing loss, just like there can be all degrees of compromised vision. And it is so critical that children are able to hear and both ears at the levels that we are expecting that they are.

We've also seen children being misdiagnosed with other conditions like being on an autism spectrum, and not having had their hearing tested as a part of their other workups, only to find out that maybe their primary need was hearing. And so, we really want to prevent those kinds of incidents from occurring as well.

So, spend some time with our resources, and if we can be of any further help we are a national technical resource Center, and there are many things we can do to support you for free outside of the actual training.

And so, know that we are there for those purposes. Well, don't-- lets he do we have any other--

DR TERRY FOUST:
There are two folks, two people, Karen and Melissa, who both talked about the recommendation against hearing screening in school-age children, and whether there's been research then to backup screening in that age group, and that has been the recommendation.

The doubling of the identification of hearing loss and what we are considering late onset hearing loss, that was done by the time they reach school age, so that statistics– maker that information that William shared was really that, you know, up to five and six years of age there is still progression of hearing loss and some other rare conditions that would cause an late onset loss but it's much less common after that.

What will most commonly will see with somebody that we may have identified with a mild or moderate loss, we will see progression of that loss has been-- as it moves into the severe or profound range, and occasionally other identifications, but that's the reason for that recommendation is that it is slow down by them, but a second party a question I'm not aware of any research that has come to refute that.

DR WILLIAM EISERMAN:
Yeah, and in fact, Bright futures guidelines that are issued by the American Academy of Audiology recommend periodic screening throughout early childhood, and that really has guided the joint commission on hearing and others to reinforce that late onset hearing loss is a reality, and if anything, the incidence of hearing loss is becoming more prevalent.

And there's lots of reason for that, so not the least of which is all that exposure to high volume noise that children are getting. So, we are back at the top of the hour, a big thank you to our captioner today, those are real life people who have been captaining our presentation today, and Emilie, to you for taking the initiative to reach out to us and allow us to share these opportunities with all of you.

Feel free to contact us, go to our websites and we hope to hear from you soon!

SPEAKER:
Thank you very much, have a great day.

DR TERRY FOUST:
Bye.

DR WILLIAM EISERMAN:
You know what we forgot-- oh darn. We will send out the survey, gunner, can you do that?

GUNNAR THURMAN:
I don't have a list-- I will get with Beth and do that.

DR WILLIAM EISERMAN:
Are people off already? I think they're largely gone. Yeah... OK.

Live captioning by Ai-Media

