Well. Thanks, Will.I appreciate it. And, you know, you. The title says it. All right. The key role of school nurses,
in conducting the screenings and those annual screenings.

A really important job, in our role as school nurses. And they really connect when we talk about things like our,
school nursing practice framework and emphasizing our role in public health and population health,
and just in ensuring that students are healthy and ready to learn. And that's our motto, right? And so although, you know,
sometimes I think hearing screening might be a little undervalued. It really is an essential, role that we have as school nurses,
especially as you're going to talk about with the rising prevalence
of permanent hearing loss that happens throughout childhood. So why am I here?

How did we get together? A lot of it was serendipity. A little bit of it was serendipity. Most of it was, well, reaching out, but, we met at the nursing conference
a couple years back, where, I think
you all, were realizing about, how you might connect with school nurses. And so I've kind of become that a little bit of that liaison. I'm.

I'm not a hearing expert by any, any stretch of the imagination. But I am I know a little bit about school nursing. So it's been a great relationship that the three of us have had here
in trying to bring, the evidence and just kind of talk about the role
of the school nurse and about the overall hearing screening process. And it's important. So we'll I'll let you take it away. Well, in case people don't know why you say you know a little bit about school
nursing, tell us about your background first, Kathy.

All right, well, I am I'm, one of the ways we met is, through my role as the, I'm your editor for the National School Nurse Journal, your clinical research research journal that you get every other month in your home. And I'm also one of the coeditors
of the last two versions of the school nursing comprehensive textbook. In addition to that, I'm a professor at the University of,
the University of Illinois at Chicago, where, I work in population
health and in school health. So, I do know I do know a little, a little about about school nursing. So thanks for making me say it out loud. Yes, yes, yes.

Humility. Humility. So as as Kathy said, my name is Will Eiserman. And I'm the affiliate associate director of the National Center for Hearing
Assessment and Management at Utah State University, which is known as NCHAM. NCHAM is housed within the Institute for Disability Research, Policy
and Practice at Utah State, which is federally funded
as a University center for Excellence on developmental disabilities
with a critical nationwide focus
now, starting in 2001,
I also served as the director of the Early Childhood
Hearing Outreach Initiative, or the Echo Initiative,
and for over 20 years, the Echo initiative served as a national Resource Center, Technical and Training Resource center on early
hearing detection and intervention, with a focus on supporting early headstart and Head Start program staff in implementing evidence
based hearing, screening and follow up practices. Now, since then, we've expanded that scope and we're delighted to be able
to continue to make our resources available,
as well as other learning opportunities like this one, to audiences
that are also involved in,
hearing, screening and follow up
like School-Based screening and nurses who are involved with that.

Additionally, we have participants in our audience from International

Development Foundations, such as Hear the World Foundation,
who have projects all over the developing world,
promoting the identification of children with hearing loss. So, we're really, really pleased to
to have you all with us today. Now, Kathy, did you want to say anything more at this point? Now. Okay. So we're we're excited, to be able to share
the information and resources that we have now,
what I, what I'd like to,
do is introduce my colleague Terry Foust,
who is a pediatric audiologist and speech
language pathologist who has served as a consultant
and a trainer with the Echo initiative since our very beginning.

And so here's Terry. Thank you, William. And hello, everybody. You know, as William, as,
just alluded, he and I with many other echo team staff
as well as local collaborators, we've really provided training in nearly
every state with thousands of staff from all of these settings that William just referenced, and many other health and education settings as well. And so we're thrilled to be with you this afternoon. And we want to
you know, I'm going to turn off my video because I'd rather have you all looking at other things as we progress here.

I could just remember how to do that. There we go. We want to acknowledge right off the bat
how impressed we are by all that you do as school nurse. Since much of our work over the past 20 years has focused largely
on identifying hearing loss during the first
3 to 5 years of life. Our experience
and really learning about the role of school nurses. When I attended the, Nelson conference a couple of years ago,
was the first time I really was exposed to that
full scope of all that you do.

And it was humbling, to say the least. So Terry and I want to recognize,
that the piece we're talking about today regarding
conducting hearings, screening, and follow up when Children Don't pass
is a small part of your daily and annual response abilities. And in fact, it's precisely because of this understanding
that we want to offer you information and resources
that will make your hearing screening efforts as effective
and as efficient as possible, while maintaining that overall goal
of making sure that children with permanent hearing, loss
of any type or degree are being identified
and provided with the appropriate supports and services. So, the work of the Echo initiative is based on the recognition
that each day, children who are deaf or hard of hearing
are attending school and receiving various health care services,
but often without their hearing
related needs being known at all. You know, hearing loss is often referred to as the invisible condition. So the question is, how can we reliably identify
which children have normal hearing and which may not?

And the short answer to
that question is that health care and education providers,
we can be trained to conduct evidence based hearing, screening and follow up practice just exactly as you see depicted in these, photos on your screen. Now, the ultimate outcome of a hearing screening program is that we can identify children who are deaf or hard of hearing, who have not been identified previously. And we want to keep in mind that hearing like vision, it can be compromised at all
degrees of severity and sometimes only affect one ear or both ears. Now, you're probably going to recognize the procedure on the right. That's called pure tone

audiometry hearing screening. And that's historically been
the most commonly used screening method for children three years of age and older
that you'll still see in many, early, care and education settings.

Now, we assume that many of you may be using this method. Now on the left you'll see the procedure called odor
acoustic emissions, or hearing screening. This method is newer. It was introduced in the 1990s, and it was widely adopted
as part of newborn screening during the 2000,
and since then it has gained acceptance as a very useful,
method for screening in early childhood populations, birth to three years of age,
and increasingly recommended
for children 3 to 5 years of age, as well as older children. And we're going to talk about both of these methods today. You're going to hear us emphasize evidence based practices today,
which, includes three components
using recommended methods specific to the age
and developmental levels of the child being screened,
implementing follow up
when children don't pass the screening on one or both ears
in a recommended sequence and timely fashion,
and documenting all screening
outcomes, gathering follow up diagnostic data,
and facilitating access to intervention services.

These three elements are key to making sure
that we're implementing evidence based practices. Now. All too often, it seems that most of the energy,
time, and resources are put into just that first step. Conducting the screenings. But all of those efforts are really
only is worthwhile, as is our capacity to make sure that children
who don't pass are getting the follow up that they need. And that last component is an essential
indicator of well implemented evidence based practices.

Those responsible for hearing screenings
need to be able to report how many children they screened,
what their pass and fail refer rates were,
and very importantly, they are able to report
how many children were first referred for an ideological evaluation. How many receive that evaluation,
and how
many were identified with a permanent hearing loss,
and what sorts of support they're receiving in school. So you can see that evidence based hearing
screening programs are much more than just using the recommended
screening method and screening as many kids as possible. We know that, like William referenced earlier, that this is a heavy lift
when you have all of the things to do that are on your list. And we aren't suggesting
that this is necessarily all of your responsibility to implement. But we do think it is important for you to know what evidence
based practice includes and to help you be effective in making sure
this is what happens for children in your school or schools.

One of the things you'll hear us emphasize is that we want to be,
we want to make sure that we help you think about strategies for making sure that you're screening efforts are not solely focused on
just getting the screenings done, but making sure the follow up
and reporting steps are also occurring in a, quality fashion. But that is the ultimate goal identifying and serving children with hearing loss. So that's where we're headed. So throughout today's

presentation we hope you'll take some notes. And particularly we've created a handout
which you see on the screen right here and in the chat as well. There's a link.

You can download it, but you could also capture
that QR code there that you see on your screen,
on which to take notes either during or after today's presentation. Our goal is to help you identify specific steps
you can take to improve your hearing screening practices
based on wherever you are right now
in your current practices and needs. And we know that given all of the responsibility things
that you do, like most of us,
there's probably room for improvement in your track toward
really implementing quality evidence based practices,
and we hope this will help you identify some, future steps you can take. So we'll be going through all of this today as a part of our discussion. Now, all of the information that we're covering today draws upon
resources you can explore on our website after today's presentation. And so if you don't remember anything else today, remember our website,
which is Kids hearing or where you'll find
information about, overall
planning about big picture information,
how to find a local audiologist
to support your screening efforts or for referral purposes.

Information about screening equipment
Terry talked about always a moment ago, which we'll spend some time on today. If that's new to you and you're interested in learning about that equipment,
you'll find information here
as well as about audio audiometry equipment. You'll also find resources related to accessing training,
which is a key component to making sure that not only do
we start off with evidence based practices, but that we maintain
and monitor and check in over time that that's what we're doing. You'll find a lot of practical resources in the next section of our website
for getting ready to screen protocol guides
and forms for documenting results,
as well as letters that you can send out to people,
letting them know about your screening efforts,
or making referrals or reporting to parents, or help
other health care providers or audiologists about your screening. And then some tools for tracking
a group of children through the screening and follow up process. So be sure to get acquainted with what we've got there,
especially if you're thinking about creating something new.

Regarding your hearing screening efforts. You know, don't recreate the wheel if there is something there
that you can download. We've got lots of free resources there that you're welcome to download, adapt, do whatever is useful with. So, we encourage you to go to kids hearing.org. So let's get started to make sure
we're all on the same page about,
what hearing screening is all about
by getting a quick review of the auditory or hearing system. And this is a little excerpt from one of our online trainings,
that, or courses that,
that cover evidence based practices.

There are three main parts to the auditory system
the outer ear, the middle ear and the inner ear or cochlear. As this mother's voice reaches her child's ear,
the incoming sound causes the eardrum to vibrate,
which then moves through small bones in the middle ear. This movement stimulates

thousands of tiny, sensitive hair
cells in the inner ear. From the inner ear, the sound signal is carried along special nerves to the hearing centers of the brain,
and the child experiences the sensation we call sound
is something you. So well,
this is how the auditory system, typically functions. There can be some exceptions.

So for example, there can be
temporary issues like a wax blockage. Or we can have fluid in the middle ear that's caused by ear infections
that we may discover and get addressed during the hearing screening process. But the primary target condition of
the hearing screening is the functioning of that inner ear,
the cochlea, that snail shaped portion of the ear. In some instances,
the sound will travel normally right through the outer and the middle ear, but when it reaches the cochlea, the system is not transmit it to the brain,
resulting in what we would call,
a sensory neural hearing loss. And this condition is usually permanent. And this is the primary target condition for which we are screening
in our mass screening efforts.

Now we need
to, we need to screen through childhood
because hearing loss can occur at any time. It can occur as the result of illness,
physical trauma or environmental or genetic factors. And this is often referred to as late onset hearing loss,
just simply meaning that it's acquired after the newborn period. Thanks, Terry. So, you know,
this is really important information for you to think about
as you share your efforts, which sometimes are viewed by teachers
or parents as disruptive, maybe not even important. Permanent hearing loss is often called the invisible condition.

And the. And yet it is the most common birth
defect in the United States. It affects approximately three children
in a thousand at birth,
and that doubles to about 6 in 1000. By the time children in our school. And then
permanent hearing loss increases
dramatically during the school age year to 50. In a thousand.

Well, you know, I have to interrupt here. Well, because, you know, you do. This statistic just blows my mind. And I thought I was pretty up on things. And when we started working, you and Terry and I started doing these, webinars. It just drove home this, this idea
that, no, it's not just at birth, that this hearing, hearing loss
is occurring in children
while it occurs through it, through it can occur throughout your life.

These school age years is the real prime a prime target area
to really try and help and identify that kids are having difficulty hearing. So I just had to stop and say it again, because it's just and I'm glad you do. And each time, because, you know, hearing loss
may be in fact invisible, not noticed. We need to see these children and make sure that they get the support
and services that they need. So
why is hearing loss
called the invisible conditions now condition now? One of the reasons is because it isn't easily observed
and can be easily disguised by the children themselves.

This is especially true when children who are identified

with permanent hearing loss during the school age years. They're not likely to be the children
with severe, profound hearing loss. Children. Who by that age would. It would be pretty obvious. Rather, children identified at this point
are more likely to have mild or moderate hearing loss.

Maybe a progressive hearing loss, one that's getting worse over time. Children identified at this
point, are often
used to following visual cues
that accompany a sound and may
in fact disguise the fact that they are using vision
to accommodate for a compromised hearing ability. They may be following their peers. They, may simply be copying
the behaviors of their children, which give us the idea that they're fault, that they're hearing our instruct, and when in fact, that isn't the case. So they may be challenged in
some ways we may not immediately recognize. And so their hearing loss does, in fact, remain invisible to us,
and they may not appear on our radar,
as kids to be particularly concerned about
that is until
they fall further and further behind.

And even then, as they start
to appear on some of our radars,
if they haven't had appropriate hearing
and hearing screening and follow up,
they're at risk for being misdiagnosed
and described as maybe having a learning disability
or a mental health need, or even being on the autism spectrum. We can't tell you how this happens all too often
in fact, you know, one of our earliest findings in the Echo
initiative demonstrated this among the children in our earliest studies,
who were identified with late onset permanent hearing loss,
many of them were already enrolled
in some kind of special education service is usually speech
therapy services, and no one had evaluated or even considered hearing. And this is a problem we continue to see to this day. I mean, obviously, we hope it's obvious that all of the speech
therapy in the world is unlikely to be very effective
if there is an underlying or unidentified hearing loss. So we absolutely do not want to wait
until a child's hearing loss manifests
in visible ways to then identify it. And that underscores the value of quality hearing, screening and follow up
practices, and the role that you can play in advocating
for quality hearing, screening and follow up for all children,
especially those receiving special education services.

Keep in mind, all too often,
no one else in the life of these kids is doing this
other than new and well, I'm going to interrupt
for just a moment here and just highlight, you know, you shared
absolutely anyone receiving special education services, but I think
a good, best practice is when children are being evaluated
to determine if they need special education services. The two things that, when I was practicing that we always took
care of before, anything else was a hearing screening and a vision screening. The kids have to be able to see and hear to learn, and we need to rule those out before we start determining if they need special education. Absolutely. Thank you for waving that flag. And it is amazing that for various reasons that can be understandable.

That is not always the case. So, Terry. Oh, I've just in agreement with with both of the things
both of you have said and really just, take it a bit further. You know, hearing screenings are central to the overall mission of schools because
and I unidentified, hearing loss of any degree can have an impact on these things. You see here on your screen on, language and speech development, academic achievement, grade retention, social
anxiety, isolation and anxiety. And so, very important point.

We also, realized right off the bat that one of your challenges
may be some pushback or resistance to you pulling children out
for the various screenings that you need to do
to help you address this,
we have a couple of resources that you can find on our website, kids.org. And this particular handout that you see here that's in English and in Spanish would actually, we think, be great to share with teachers and others. Excuse me in your screening setting whose help and support that you need
and helps them understand what we're talking about here. That hearing screening is very much aligned
with the goals they are aiming to achieve achieve with all of their students. So I mentioned the handout a minute ago,
and so we'd like you to, download
that if you see it in the chat box,
this is a good time or on your own paper as well,
to jot down a note or two about how that handout we just showed
or other things could help garner some support
for the screening and follow up efforts that you need to engage with. Can you other people to see the importance of this?

So again, look at our website for some of that information
and other information that can be useful to you. Okay, Terry, let's talk about the first component of evidence
based screening practices using the recommended methods
that are appropriate for the age and developmental level of the child. Yes. So as we mentioned a moment ago,
pure tone audiometry and OSA screening, they're the recommended
methods that we're going to be talking about this afternoon. The availability of pure tone and zero screening
really means that it's no longer appropriate to rely solely
on subjective methods that may have been used in the past. These are methods such as ringing a bell behind a child's head
or, depending solely on caregivers perceptions of a child's hearing.

Now, don't get me wrong, the observations of a child's response to sound, especially the lack of a response, can be helpful and we should pay attention to how children do or do not respond, to their environment. But these sorts of blobs of observations, they don't constitute a hearing
screening because they're far too crude and unreliable. And, you know, frankly, we can do so much better than that because of our current technology. You probably recognize the pure tone method because you already use it. Or maybe you've had your own hearing screen this way in this procedure,
musical note like tones are presented to children through headphones,
and children respond, providing a behavioral response
like raising a hand to indicate that they've heard these tones. Cure.

Tone screening
gives us a good idea of the functioning of the entire auditory system. Actually all the way to the brain, with the child showing a physical
or behavioral indication that they perceive the sound. It's a relatively affordable method with the screening
equipment costing like everything, and it's always going up. I think they're about $1,000 now. The equipment is durable and portable, enabling us
to easily transport it and use it in a variety of locations,
maybe taking it from one school to the next. And a wide range of individuals can

learn
and be trained to perform the pure tone screening procedure.

Now, here's an excerpt. We want to give you a sense of what at least
we have available for training purposes on our website. This is an excerpt, from
our our training on pure tone audiometry screening. So let's just listen very
briefly to conduct pure tone screening,
we first take a look at the ear to make sure
there is no visible sign of infection with blockage. If the ear appears normal,
the screener then instructs or conditions the child how to listen for a tone,
and then respond by raising a hand
or placing a toy in a bucket. Once the screener has observed that the child
reliably responds to
sounds that are presented just as the screener instructed,
the actual screening is started
during the screening process.

This listen and respond game is repeated at least twice at three different
pitches
on each ear, noting the child's response
or lack of response after each tone is presented. If the child responds
appropriately and consistently
to the range of tones presented to each ear. The child passes the screening. So
our website again kids
hearing.org provides
comprehensive training on pure tone
screening if you or others need that. And as the screening process itself, pure
tone
screeners, need to actually learn how to step through
the process manually with
each child, including multiple specific steps
that have to be followed in a sequence in order to be valid. Valid.

And it's trickier to do correctly than one might assume. And easy to drift away
from the actual required process. Now, anyone who is good at working with kids
and can certainly learn to do
pure tone screening, but we really can't
emphasize enough that it is imperative that anyone doing
pure tone screening receive formal, comprehensive training. That if there are a
group of you in a school that are doing this, that
you're doing it all the same way, and to get a refresher on an annual basis
to make sure your screening habits
have somehow drifted over time,
which we can all have happened
if we aren't extremely careful. Though like many tasks that look simple enough
from an observer's
perspective, conducting pure tone screening is actually quite complicated,
partly because of the
manual aspect of it, and there are many ways
that one can make mistakes that can invalidate screening. Our trainings and some
of the resources that go with it
are really aimed at giving you positive criteria to follow
so that you don't end up making some of the common
critical mistakes that we've often observed.

Yes, exactly. In fact, reviewing this common mistake list that we're, we've got,
on your screen now is is good for even me who's been, screened for years
to remember because of that drift that that can happen with the best of us. So
just to sensitize you as to why training and regular monitoring
of your screening practices are so important,
I just want to just take a moment and look at some of these here,
these common mistakes. So one of them is not following a standard screening
protocol
that includes appropriate screening frequencies

and the numbers of screening attempts on each ear. We can present tones and patterns that the child starts to predict
rather than responding to the actual sounds as they're presented. We got to be sure that that placement of the earphones is correct.

Like it can be, incorrect. It could be over their hair or too far forward or backwards. Sometimes we provide visual cues, or we may even have a reflective surface
that the child is looking at where they can be cued,
that we're pressing a button even without you realizing that they're seeing that,
sometimes we forget to switch ears and we test the same ear twice. We, may not do an equipment check,
make sure it's working before we start screening. We need to be aware of noisy rooms and not sometimes
we don't test the sound levels of the room in advance,
increasing the volume to accommodate for a noisy environment. As silly as that may sound, that that happens.

And we've we've seen that,
going right along with that. We've seen people help a child pass by raising the volume
or giving them the benefit of the doubt. We need to recognize whether our equipment is failed during the screening. And sometimes we talk or provide other subtle cues,
that prompt the child during the screening. And then just really,
one to emphasize is that sometimes we assume children who do not
pass are receiving the follow up screening and diagnostic services
without actually having the evidence to support that. Now, Terry, that's where I want to do
like a quick timeout on that number 12 there.

That's the thing that we see
all too often is that,
those that do the screening
may be just passing on those results
without really knowing, with any confidence that there's a system
in place where the parents and the providers involved
are actually doing that next critical mistake. As we said earlier on,
all of the effort we can go into that
can go into screening is worthless if we don't have
really a solid system to support children in getting that follow up piece. So that's pure tone screening. Now, it's important to note that when using pure tone screening,
there is going to be a percentage of children,
depending on the age group that you're working with
and whether they're developing typically or not. There is going to be a group of children who won't be able to be conditioned
that first thing you do before you even start screaming,
and who then won't be able to actually be screened. And it's never acceptable to simply delay the screening to a later time.

For children who might be difficult to screening. I mean, that that really I mean, if you pause and think about that for a minute,
that really doesn't make sense, because those are the very children
that may actually have a hearing loss. So in younger populations,
you know, 5 or 6 year olds, or younger,
we wouldn't be
surprised if 20 to 25% of those children
won't be able to be screened with pure tone audiometry. And and then there's additional children who maybe whose primary language
is different from your own, or children with certain disability
parties for whom the screening process may not be achievable. Yet we want all of those children to be screened,

not just the ones that are easier to get done. So, we need to have a backup plan.

Fortunately, we have an alternative. And that's where your odo acoustic emission screening comes in, which you see on the photo here. This is the recommended hearing screening method
universally for children birth to three years of age. As you'll see in a moment, the ease and speed of this screening is causing
many people to reconsider the use of pure tone audiometry. With older children, some schools and health care providers are switching
to OAC screening for all children, so that they have just one method,
one type of equipment that they can use with all children,
regardless of age, developmental level, or primary language. So we have a very useful document on our website
that can help you and your team think through the use of Oasys versus
pure tones, which we'll show you a little later,
but what you should be sure to check out if you face a decision now or at any point
about what you're going to do with children or who are difficult to screen if pure tone is, in fact, what you're doing right now.

But, you know, at a minimum, you'll have to have some kind of a plan
for screening children who are unable to be screened
with pure tone, and that will either be to do
if you're following evidence based practice, that will even either
be to do away is or
to have an audiologist who can be sure to come and screen
all of the children that you can't screen and do it in a timely way,
never delaying them just because they're difficult to screen. Because, as we said, the difficult to screen
children may be the very ones we're needing to identify
who have some type or degree of hearing loss. And we'll I'm just going to pipe in here and say,
one of the things that also falls into the consideration is what the rules
and regulations are in your own state in terms of being able to screen
and the devices you can use to screen and we'll talk about that in a little bit. But, that kind of adds to and complicates sometimes the decisions
on how to make this happen. But your point that doesn't change the point that if a child fails, it fails
a, screening or we cannot screen them, we have to make sure
that there's follow up. Like so many fields that are constantly evolving, evolving in part because of the development of technology.

Hearing screening is just like that. And a lot of the regulations that are in place at state
and local levels are based on, frankly, old science. And so, you do want to be aware of that before you make a radical shift. The one thing I can encourage you about is, even if your state does require
pure tone audiometry, if you're unable to do it, there's
probably a window that permit you to do
oh is as the second dairy level screening. But again, find out what your state and local regulations are. This is a quick look at that.

That document, that we have on our website
that we encourage you to have a look at that shows
the considerations between pure tone and and audiometry. Now, one of the things that we love about screening, especially for younger
children, is that we can screen children in a wide range of environments. And you notice that on this screen right here, these children aren't
being pulled out into, an environment that's foreign or strange to them. They are being screened at every day educational and, care environments
where the children are already happily spending their time. And so,
Terry, you know, what have
you found about the the people that can do these screenings? Yeah.

You know, really in fact, the screening works best when the children are familiar and comfortable with the adult that's doing the screening. And where they can play with the toy, they can be held, they can look at a book or even sleep of the screening is being conducted. Being able to go to the children can actually really speed up the amount of time it takes to screen a group of children and frankly, screening to, you know, school age children with ease. The older they are, the, the easier it goes. It's usually a breeze only taking a few minutes per child. Now, here are some examples of the handheld equipment that we that we're talking about here.

Now, incidentally, the two devices on either end on the far right or the far left of this photo, they're unique in that they offer a model that has both. So it has both OAG and audiometry. So a pair of headphones can plug into those. So if you use pure tone with older children you can have your alternative method literally. Right there in the same machine in your hand. For when you can't screen a child with pure tones.

That dual use, is a feature worth noting for sure. Now, unlike pure tone audiometry, OE screening is fully automated, so once you start that screening, then the equipment will independently, compete, complete the process. Your job then is going to be to set up the environment, to, insert a probe into the child's ear and then manage their behavior while the screening is being completed. Just like with pure tone screening. To conduct an OAC screening, we're going to first take a thorough look at that outer part of the ear to make sure that there is no visible sign of infection or blockage. And here's a quick excerpt from one of from our training on zero eight screening that will give you an idea of how it works.

A small probe is placed in the ear canal that delivers a low volume sound stimulus into the ear. A cochlea that is functioning normally will respond to this sound by sending the signal to the brain, while also producing an acoustic emission. This emission is analyzed by the screening unit and in approximately 30s. The result is displayed in the computer screen as a pass or refer. Yeah, in every normal, healthy inner ear should produce an emission that can be recorded in this way. So unlike what we saw with pure tone screening, or the person doing the screening here doesn't have to manually step through the various frequencies and the tones being tested.

Once that probe is in the ear and stable, the screener then would push a button and the entire screening process is then completed automatically. The nice thing about this is it eliminates all sorts of possibilities for, error. The same kinds of things were, you know, that we're so concerned about with pure tone screening. Regardless, though, it's still requires thorough training, which can be accomplished online, just like you saw, here. And and just like you can complete the Pure Tone screening online. So let's just take a quick look at an actual real time screening.

This is unedited. So this woman on the right is putting a probe in this little guy's here and she's going to push a button. You'll see the device here in a moment. And that screening has started. Yeah. And that means they got that result of either a pass or refer that quick.

You can see how much quicker that is. There's curtains. And now the helper is putting the probe in the other ear and you'll see the handheld device here. There it is. They've started it. He's

already done it.

So ideally that's how quickly that can go. So using the recommended methods is one of the key components of evidence based practices. And again you know to to compare the two you'll you've got a handout on our website to, to help you look at this. Now I want to encourage you to think about using your handout again. Where are we right now? In terms of this consideration of equipment, have we reevaluated this?

Do we have a practice for when we can't successfully screen a child with one method? What else do we do? And have we had standardized training that we can document, by the way, our training opportunities that are available on our website now offer continuing education, credits through Nap that the National Association of Pediatric nurses. So that's available through our our website. So remember that now in addition, we want to make sure that we're implementing follow up. And so it's a very important thing to think about.

And something that we include in the training is what that follow up protocol needs to look like. We don't want to over refer children and burden health care providers like who could do middle ER evaluations. But we also don't want to just make aimless as assumption is that a child will get the follow up that they need. And so in the training that we offer, and I don't want to say that's the only way you can implement evidence based practice. It isn't. There are local audiologists can help you establish your product, your protocol, as well.

But know that in our resources you'll see the recommended protocol that is used and based on evidence, throughout the country of all children of different ages, using either the OAC or the pure tone method. So we're not going to go into it in detail. But you'll notice that there's an initial screen. And if the child passes, on both ears, then you can assume the process is complete. But if they don't, then we recommend a screening again in about two weeks. That would be though, only for about 20 to 25% of the children.

Most will pass right off the bat, and then after two weeks, we expect that it would go down to about 8%. That still haven't passed on both years, and that 8% would be referred for a middle ear consultation and potentially treatment for a middle ear condition. That 8% is very screened and if they pass, they're done. And if they don't, then that small group of children, usually about 1%, are referred to a health care provider for in evaluate to an audiologist for a complete ideological evaluation. From whom? You would want to get those results and to make sure that the child is is accessing the intervention and supports from the school that they need.

So the overall rule of establishing evidence based screening is that you're done with your screening process. Sure. Not just when you've done an initial screening, but really only after you've got a passing result on both ears at some point along the way. Or the child has been to an audiologist and you've got the results. Yeah. Well, just let me

interject that.

That's exactly right. We really want to caution everyone that a screening process is not complete
just because a referral has been made or a letter has been sent home. These, are the only conditions under which we can really say that
a screening is done for a given child, and that's that. They've passed the screening on both ears,
or they've received an evaluation, and we've obtained those results. And there's one exception, isn't there, Terry? There's an exception about this protocol.

Yeah, exactly. You know, whenever we hear a parent or a caregiver,
complaint about hearing or language development,
we want to take that seriously and we go ahead and refer them for,
further evaluation, even if they've passed on the hearing, screening. So that's a lot, right, that it's a lottery. Who is supposed to do all of this? Is it the school nurse that has to do every one of these steps? Or are there people that school nurses and others in the school,
context can also be involved to make sure
that that complete process is built and.

Yeah, exactly. Who's responsible for all of this? You know, let's, look at these these questions here, William, that can help us address that. Yeah. We want to make sure that we think about who can help you with this process. Are there helpers like administrative supports
or volunteers who can help following up with parents
and make sure that they understand that their child didn't refer that
they're helping guide the parents
through seeking that follow up point.

Whether it's the middle ear evaluation
or getting the audiology appointment made,
who's help? Whose help can you get to help
document and oversee the children
that do need more than just
the initial screening? Kathy, do you have insights about how,
school nurses can look to others in the school context
to help implement these evidence based practices? Well, thanks. Well, there's lots of opportunity and there's lots of different situations. Some of it might be pooling together with other school nurses
to do mass screenings.

Quickly and efficiently. Others might be using volunteers or, as you said, maybe if there's a community liaison type individual,
built into your school and having volunteers just help,
helping with that more community, liaisons to connect with parents. But one of the things that I think I know
from my own practice that I kind of reflect back and am,
disappointed in myself in is I just used to send our state
referral form home, and really looking back at that,
I realize it was a form that only I understood. The parents certainly probably didn't understand. And, I didn't think about, health literacy or the language barriers that the parents receiving this morning might be facing. So I know that you have different resources available on your website, and
I just encourage people to think about, why are they getting those referrals back?

Is it because the parents or the caregiver doesn't understand what I'm asking? And so attaching a cover letter or making a phone call to follow up,
where I know those things are difficult to do, certainly in a busy schedule,
but those are some of the things that, might be helpful in trying to really get to the final to the to the finish line, which is having the referral form
or having the results from the referral brought back to the school. I was so surprised during a meeting that we had with a group of

of school nurses last spring asking them,
I mean, they were all really engaged in doing, hearing, screaming,
and I said, how many children were ultimately identified? This past year? And there were
very few that could answer that question
that they didn't know. And and so
it begs the larger question.

Well, it's hard to expect people to support your screening efforts
if you can't talk about the benefits of it that were finally rendered to children
who are ultimately identified, who ended up getting hearing aids
or other kinds of intervention, and support,
and so having a complete process is essential. And so we encourage you to check out some of the letters, referral letters,
forms and general information that we have
on our website that will help you convey the importance of all of this
to those that you might be seeking help from. And I would I would suggest that even even if a child doesn't end up having to go
to the audiologist, even identifying a child who is having difficulty hearing because of, of, just an inner ear infection
or those kinds of things, not hearing is not hearing. So by identifying these children and getting them whatever level of support
they need to improve their hearing, it's a win and we should be recording
those kinds of things. And those are things you share when you go and see the Board of Education
and give a report and those kinds of things to get again, garner that support
using the form that you showed, the flier that you showed earlier,
describing what the process is and why, all of those things can really help,
you know, kind of build a little bit of a groundswell beneath you,
to show, the importance of the hearing screening. Thank you.

So we're almost at the top of the hour, but we can hang on for a little bit here and answer some questions I want before anybody runs off. There's a
a link in the chat for a quick evaluation of how we did today, along with what? We'll give you a certificate of attendance. So, we'd love it if you would
complete that before you run off. But in the Q and A, you'll see,
some, an opportunity to ask us some questions. The first question is about whether this has been recorded, and it has
so if you missed anything today or if you think of people
who could benefit from today's webinar,
it's available on kids
hearing.org, and it will be there in a couple of days.

And then you can review it again, share it,
have a meeting with some of your people and watch it together and, and discuss the process that you are in and improving your services. So, know that the recording is there. Teri, we have a question here
about,
Did you mention threshold
screens in New York State? Do we have we have to do threshold screens
after a failed pure attempt. Yes. We have not talked about, threshold screens.

And in this context, what that means is if they do not pass
the hearing screening, in the case of pure tone
at the screening levels, then,
they find the threshold or the quietest level
that they can get the child to respond. And that is not part of our protocol. And it, we leave that
for the full diagnostic evaluation because,
if they don't pass the screen, we don't none of us need define threshold. We can appropriately refer that on. Now the second part of the question is, in New York State,
do we have to do threshold screenings after a failed pure tone? And

unfortunately, I don't know, the, state, regulations on that.

I find it very rare, though, that a, finding threshold would be required. The next question, is it recommended to test a child who already has hearing aids? Great question, and absolutely not. You don't need to do that. When they, have been fit with hearing aids,
their hearing loss has already been diagnosed and they've, entered treatment,
of which the hearing aids are part of that treatment plan,
and they should be under the care of an audiologist to help maintain, the, programing the adjustments and the working ability of those hearing aids. So what you do want to do.

Okay. Because I was going to say I'm going to type in. Go ahead. Well, as you know, Kathy
well but I was just
going to say is that what we are responsible for
doing is ensuring that the student is continuing to have that follow up care. So because they show up with the hearing aids,
you can also inspect the outer ear to make sure you don't see any, any issues going on with that. Make sure the hearing aids are in working order.

Those kinds of things
is certainly a reasonable thing to do, but you don't need to screen their hearing,
but you do need to document when they were last seen by the audiologist,
or that they're still under the care of of someone, for their hearing. Well, that's what you were going to say. Well, yes. And what things I always want to say. And we'll leave everybody with this thought. It it has to do with don't make assumptions.

We don't want to, first of all, make an assumption
that a child can hear appropriate,
even if they're following along with some degree of success. We never want to assume it, because hearing loss can be invisible to us. It can be disguised. We don't want to assume that if a child doesn't pass the screening
and we send home a letter, that anything happens after that point,
we don't want to assume that a health care provider is following up,
or that the family has found an audiologist. We have to have a system in place that establishes
when we know the child is either passed on both ears
or has been to an audiologist, and we have a result. We don't want to make any assumptions.

And then lastly, we don't want to assume that just because a child
had a, has a hearing aid
that that that has been checked in on recently,
hearing loss can be progressive. Children are growing and hearing aids will not necessarily fit,
the way they did six months ago and function the same. So we want to make sure that that assumption isn't made. And we don't want to assume that just because a child may be getting
speech and language therapy or other types of intervention,
that hearing has been also incorporated
in the evaluation and assessment process,
because sometimes it is overlooked. So Kathy and Terri, thank you so much. And to all of you, thank you for your attention to all of this
and for what you can do as you go through
that list that you have on your handout there.

I'm going to put that QR code back up
so that if you didn't get it, you can look at it again,
and think about
what you can do to continue the progress
of improving your practices so that they are fully in line

with evidence based recommendation and. Thanks, everyone. Know that you can contact us through our website, kids hearing.org if there are any other questions or guidance that we can offer to you, we're happy to do that. And thanks to the National Association of School Nurses for helping us reach out to this audience.