00:00:00:00 - 00:00:25:05
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So I'm Kathy Yonkaitis I'm, a NASA and National Association of School Nurse member, as well as school nurse and schooling school nursing professor. As well as the, journal editor for the nascent school nurse Journal. And through my role with Nathan Weldon, I came across each other and, I learned more about the National Center for hearing Assessment and Management.

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And, we both realized that there was an untapped, potential here. And to improve school nurses, knowledge, regarding hearing assessment, and hearing screening. And so we put our heads together, and have offered a couple of, different, webinar opportunities. And today is another one of those. And so we're really glad to have everyone join us.

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And, you know, the expert are here. Well, it's in my screen there above and below me. I feel like this is the Brady Bunch, but, we'll enter your both here, and they're going to share their expertise about, hearing, screening and hearing loss. And, I'm going to pipe in here and there, to maybe, add a little school nurse context or maybe answer some of your questions if we have time at the end.

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So I'm so I'm glad you're here or I'm glad you're listening at another time and, well, I'll turn it over to you. Thanks, Kathy. As always, we really appreciate your collaboration with us. So I'm Will Eiserman and I am the affiliate associate director at the National Center for Hearing Assessment and Management, which is known as NCHAM.

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And NCHAM is housed within the Institute for Disability Research, Policy and Practice at Utah State University, which is, currently federally funded as a University center for excellence and does in developmental disabilities, with a critical nationwide focus now starting in 2001, I also served as the director of the Early Childhood Hearing Outreach Initiative, which is known as the Echo initiative, and for more than 20 years, the Echo initiative served as a national resource center on early hearing detection and intervention, with a focus on supporting early childhood types of screening through programs like Early Headstart and Headstart in implementing evidence based hearing screening and follow up practices.

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And we're delighted to be able to continue to make our resources and learning opportunities like this one available to an even, a much greater and more expanded audience. Of those of you who work with with kids of a variety of ages, including many of you who are school nurses responsible for hearing, screening and follow up activities. Now, I am, joined today by my other good friend and colleague, Doctor Terry Foust, who is a pediatric audiologist and speech language pathologist who has served as a consultant and co trainer with me and the Echo initiative since our very beginning.

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So Terry, thank you for being with us today. Again. No thank you, I am I can't believe we've been doing this for as long as you just mentioned in there. And it's really been a wonderful, project. And as William has said, we've been able to collaborate with many local collaborators, and, our staff, early Head Start, all kinds of early childhood care providers to provide training in almost every state.

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And, it's been terrific. And we look forward to being able to spend some time with you today. And we want to acknowledge right off the bat how impressed we are by all of you, who are school nurses or functioning in those school settings since much of our work over the past 20 years has focused largely on identifying children with hearing loss during the the, first 3 to 5 years of life.

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Last year, Nason Conference was the first time I had the opportunity to be exposed to the full scope of all that you are responsible for, and to say the least, it was humbling. So Terry and I do recognize that the piece that we are talking about regarding conducting hearings, screening and follow up when children don't pass, we acknowledge that this is a very small part of your daily and annual responsibilities.

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And in fact, it is precisely because of this understanding that we want to offer information and resources that will make your hearing screening efforts as effective and as efficient as possible, while maintaining that overall goal of being able to be sure that children with permanent hearing loss are being identified and provided with the appropriate support and services that they work now.

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The work of the Echo initiative is based on the recognition. You know what? I'm going to turn off my my mug here so you don't have to look at me while I'm talking. The 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 going to various health care services, often without their hearing related needs being known at all.

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You know, hearing loss is often referred to as an invisible condition. So the question is, how can we reliably identify which children have normal hearing and which don't? And the short answer to that question really, is that health care and education providers can be trained to conduct evidence based, hearing screening and follow up, just like you see depicted here, in these photos on your screen.

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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 previously identified. And keep in mind, that hearing, just like vision, it can become, compromised at all degrees of severity and sometimes affects only one ear or both ears. You probably recognize the procedure you see on the right side of your screen.

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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, which you'll still see in many early care and education settings and providers using. Now, we assume many of you may, be using, this method, but on the left you're going to see a procedure called acoustic emissions or hearing screening.

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And some of you may be familiar with that. This method is newer. It was introduced in the 1990s, and then it was widely adopted as part of newborn hearing screening during the 2000. Since then, it's gained acceptance as a very useful method for screening early childhood populations birth to three years of age, and we're increasingly seeing it recommended for children 3 to 5 years of age, as well as older children.

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And we're going to talk about both of these methods today. You're going to hear us emphasize evidence based practices today, which has three key components to that. It it requires using recommended methods specific to the age and developmental levels of the child being screened. Evidence based also means implementing follow up when children don't pass the screening in one or both ears.

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In a recommended sequence and timely fashion, and it means documenting all screening outcomes, gathering follow up diagnostic data, and facilitating access to early intervention services. These three elements are key to being sure that we're implementing evidence based practice. Now. All too often, most of the energy, time, and resources are put into just the first step conducting the screenings.

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But all of those efforts are only as worthwhile as is our capacity to make sure children who don't pass are getting the follow up that they need. That last component is an essential indicator of well implemented, evidence based practices. Those who are responsible for hearing screening need to be able to document and to report how many children they screened, what their pass and refer or fail rates were, and very importantly, are able to report how many children were referred for an ideological evaluation.

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How many receive that evaluation? How many were identified with a permanent hearing loss, and what sorts of support they're getting in school?

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Unknown
So evidence based hearing screening programs are so much more than just using the recommended method and screening as many children as possible. We know that that's a heavy lift when you have all the things that you do on your list. And we aren't suggesting this is necessarily all your responsibility, all of those components. But we do feel like it's really important to emphasize that evidence based practice includes all of those things.

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And then to help you make, it sure that you're effective in your hearing, screening and follow up practices. Now, one of the things you'll hear is emphasize is that we want to make sure that we help you think about strategies for making sure that your screening efforts are not solely focused on getting just the screenings done, but making sure that the follow up and reporting steps are also occurring in a quality fashion.

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Unknown
And that that is our ultimate goal that we identify and serve children with hearing. So that's where we're headed with this conversation. And to set the stage, William, I think I'm just going to interrupt. Oh, there we go. Slides

were not advancing for me. So, and it just did. So I'll go back, turn that back to you.

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Unknown
Okay. So let's set the stage you should be seeing on your screen right now an image of the auditory system. And, Gunnar and Kathy, are you seeing that? Yes. Okay. Yes. Okay, so let's set the stage with a quick review of the auditory, or hearing system. Terri, can you walk us through the auditory system? Yeah, sure.

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Unknown
So as is, as you know, there are three main parts to the auditory system. We have the outer ear, the middle ear and the inner ear or the cochlea.

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Unknown
Now, well, this is how the auditory system, typically functions. There can be some exceptions. Hold on, hold on. Terri, you went one too far. You. When sound enters the outer ear, it causes the eardrum to vibrate, which then moves the three small bones in the inner ear. And that movement stimulates thousands of tiny hair cells in the inner part of the ear, called the cochlea.

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Unknown
And from the inner ear, the sound signal is carried along special nerves to the hearing centers of the brain, and the individual experiences the sensation that we call sound. Yeah. So that's how the auditory system typically functions. And but there can be some exceptions to that. So with that is and you've probably seen this a lot in your practice.

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Unknown
There can be temporary issues. Like a wax blockage or 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 that we're looking at in our hearing screening is the functioning of the inner ear or the cochlea. That snail shaped portion of the ear.

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Unknown
Now, in some instances, the sound travels through the outer and middle ear, but when it reaches the cochlea, then the signal is not transmitted the way it should be to the brain. And that'll result in what we call a sensory neural, hearing loss. Now, this condition is usually permanent, and this is the primary target condition for which we are screening in our mass screening efforts.

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Unknown
So we need to think, we need to think this through. We need to screen throughout childhood because hearing loss can occur at any time. It can occur as the result of illness, physical trauma, environmental or genetic factors in the hearing loss that we find later is simply referred to. Just like you would think as late onset hearing loss.

00:14:47:01 - 00:15:18:40
Unknown
And we just mean that that gets acquired after the newborn period. So permanent hearing loss, as I said before, is often called the invisible disability, the most common birth defect in the United States. Sensorineural hearing loss affects 3 in 1000 at birth, and that incidence actually doubles to about 6 in 1000 by the time children in our school.

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Unknown
And then it increases steeply to about 50 and a thousand during the school years. So that's always great. Makes me blows my mind when you say this. Well, so I have to pipe in here and just have you reiterate that these numbers, it's any child who has a hearing problem. It's important that we identify it. But to understand this increase in the school years, I think is is really, a great point and certainly not one that I was aware of, through my years of practicing that really in the school years, kids can be losing, you know, their hearing can be lost.

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Unknown
And we need to be ever more diligent, to assess for that. I'm so glad you you drew a highlighter through that, Kathy. You know, and it's important to remember that, like, vision, hearing loss can occur at all degrees of severity. But any degree of hearing loss can disrupt a child's ability to understand fully what is being modeled for them, whether that's language or activities, gaming, content, instructions, and when they don't follow along exactly as is expected.

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Unknown
And we don't know that they have a hearing loss, they may be misdiagnosed or misinterpreted as having some other condition. And so that's why it is so critical that we don't just screen, screen, screen children, but that we screen and follow up and make sure that those that don't pass get the follow up that they need. So we just always want to point out that while hearing loss may be invisible, the children have to be visible to us and they need to be seen.

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Unknown
So just think about that when you're looking at the population of your school. Now, one of the reasons hearing loss is sometimes referred to as the invisible disability is because it isn't easily observed and can be easily disguised by the children themselves. Children with mild and moderate hearing loss often will use visual cues that lead us to believe that they're hearing us better than they are.

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Unknown
Those can be subtle visual cues that accompany a sound, and they turn toward the source of the sound, or they simply copy their peers behaviors, even though they may not have actually heard or completely understood what was being said or asked of them, they may be challenged in some ways we may not immediately recognize, and so their hearing loss remains invisible to us, and they may appear on our radar screens, to be picked particularly, they may not appear on our radar screens as, as children that we're particularly concerned about, that is until they fall behind.

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Unknown
And even then as they start to appear on people's radars, because they are falling behind. If they haven't had an appropriate hearing, screening and follow up like I was insinuating a moment ago, they're at risk for being misdiagnose as having maybe a learning disability or a mental health need. Or we've seen even children being, diagnosed on the spectrum when hearing had not been adequately evaluated and ruled out.

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This happens all too often. In fact, you know, one of our earliest findings in the Equity Equity Initiative demonstrated that among the children in our earliest studies, who were identified with late onset permanent hearing loss, many of them were already enrolled in special education, speech, therapy services, and no one had evaluated or even considered their hearing ability.

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Unknown
And this is a problem we continue to see to this very day. All the speech therapy in the world is unlikely to be very effective if there is an underlying unidentified hearing loss. So we absolutely do not want to wait until a child's hearing loss manifests itself in visible ways to then identify it. And that underscore the value of quality hearing, screening and follow up and the system you create around that, along with the role that you can play in advocating for quality hearing, screening and follow up for all children, especially those who are receiving special education services.

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Unknown
Keep in mind, all too often, no one else in the life of these kids is looking at this other than you. So, Teri, let's talk about the first component of evidence based hearing screening using recommended methods that are appropriate for the age and developmental level of the child. Yes. So as we mentioned, earlier, I am in the webinar, pure tone audiometry and screening are the recommended methods that we're going to be talking about, this afternoon.

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So the availability of both these pure tone and OAC screening really means that it's no longer appropriate to rely on subjective methods that have been used in the past. And these things include things like ringing a bell behind a child's head, or, depending solely on a caregiver's perceptions of a child's hearing. Now, having said that, don't get me wrong, observations of a child's response to sound, especially a lack of response is helpful, and we should pay attention to how children do or do not respond in their environment.

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But these sorts of observations, they don't constitute a hearing screening because they're just, you know, they're just too crude and unreliable. And frankly, we can do so much better than that because of our current technology. You probably recognize pure tone method, either because you've already used it or because you've had your own hearing screen. This way, just by summary.

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In this procedure, musical note like tones are presented to children through headphones, and children provided a behavioral response, like raising a hand to indicate that they've heard the tones. Now, pure tone screening gives us a good idea of the functioning of the entire auditory system all the way to the brain, with the child showing us a physical or behavioral indication that they perceive the sound.

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It's a relatively affordable method with screening equipment costing. I think now it's around $1,000. The equipment is durable and portable, enabling us to easily transport it and use it in a variety of locations and a wide range of individuals can be trained to perform the pure tone screening procedure. Now, here's a quick excerpt from, our online training on pure tone audiometry screening.

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And this just demonstrates that the screening process in brief, just to help you see what all is involved in doing this.

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To conduct pure tone screening, we first take a look at the ear to make sure there is no visible sign of infection or 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.

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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 year, the child passes the screening so our website, which is Kids hearing.org, provides a variety of resources related to how to adhere to the standards of pure tone audiometry screening, and also includes a comprehensive training system that you can enroll in to make sure that you and anybody else who's doing screening, have have completed to make sure that what you're doing is actually compliant with, the what is considered

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best practice or, or evidence based practice. Now as a, as a screening process, the screener, when doing curtain screening, has to step through manually each step of the process. And it includes multiple specific steps that have to be followed in the sequence in order to be valid. And it's trickier to do correctly than one might assume. And it's also possible to kind of, drift away from those standards over time.

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So we always want to encourage people about training. I know, Terry, as a pediatric audiologist, you always have something to say about training. So here's a here's a chance. Yeah. Yes. We just, just as an example to sensitize all of us as to why training in regular, monitoring of screening practices are important. Here's some common mistakes that can jeopardize the integrity of our screening outcomes.

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So, for example, not following a standard screening protocol, that includes, you know, appropriate screening frequencies and screening attempts on each ear. We don't want to present tones and patterns that the child can predict, rather than responding to the actual sounds that are presented. Improper placement of the earphones like, over too much hair or either too far backwards or forwards.

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Unknown
Sometimes we provide visual cues or even have reflective surfaces where the child is cued when we're pressing a button, without us even realizing they're seeing it. Sometimes we forget to switch ears and we test the same air twice, not doing an equipment check to make sure it's working before we screen. Sometimes the the sound level in, is too much.

00:26:57:04 - 00:27:22:40
Unknown
We're in a noisy room, and we don't, test the sound level in advance. We've had screeners, or we see people sometimes just increase the screening level so that they can accommodate for that noisy, environment, helping a child pass by again, raising the volume. Sometimes we don't recognize if our equipment is stopped working or failing during the screening.

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And all too often, even as experienced screeners, we may talk or subtle, you know, give subtle cues or prompts to the child during the screening. So, and then assuming children who do not pass or receiving their follow up and diagnostic services without checking and getting the documentation or the evidence to support that that's happening. Yeah. So, the on our website, we have a pure tone screening skills checklist, which you see here, which goes through all of the steps that are to be included in the pure tone screening process.

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And it's all of the steps that you also need to be trained on. And that you can monitor the quality of screening against. So this is one example of many resources we have on our website that might be useful to you as you look at what you're currently doing and saying, are we really adhering to what is considered evidence based practice?

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Do I know how many children have actually been identified as a result of the screenings we do every year? And if not, why? What do I need to do to build out that aspect of the program? There should be children who are being identified and not only screened, and so we just can't emphasize enough why it's so important that that you think about these common mistakes.

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Terry just talked through and acknowledged that, you know, some of these we must be making because we we can so easily drift from the original training, especially if we were never really trained and it was just kind of handed over to us. So give this some really serious thought about what you can do to ensure that the children that need to be identified are getting identified.

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Unknown
You know, well, I was sitting here thinking you could change the title to Best Practices. Yeah. And flip these sentences around. So, as you said, maybe if you never were trained, or formally trained, maybe looking at this and kind of reversing them and saying, yes, I need to follow a standard protocol. Yes. I need to do it in unpredictable patterns.

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Unknown
Yes. You know, so just, you know, the the reverse of this is true to provide you with the things that you ought to be doing. Right. And that is largely what the checklist is all about. It's saying that, all of those things. It's a great point. You know, I've, we've been in a number of conferences where we've talked about this content, and there have been more than once that somebody has raised their hand and said, you know, I don't know what the big problem is here.

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Unknown
I can pass any child as though passing the screening is the goal and it isn't the goal. And I and that person that I, you know, there's been a couple of them has said all they have to do is turn the volume up and then they can get a child to pass. Well, that's the kind of drift in logic that can happen.

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Unknown
We're in a school environment. We want children to succeed. We and we can lose focus that in this case, we don't want them to succeed as much as we want to know whether they're hearing as they should be or not, and having a good, reliable look at that. So let's move on. Now that was pure tone audiometry screening.

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And 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 you're working with and whether or not they are what we would consider developing. Typically, who won't be able to be conditioned as Terry just went through. So you won't be able to proceed with the screening.

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Unknown
With that method. And you know, it's never okay to simply delay screening on a given child to a later time just because they were difficult to screen. Because children who are difficult to screen. It may actually be the children with a hearing loss. So in younger populations of children 5 or 6 years of age or younger, we wouldn't be surprised if 20 to 25% of those children won't be able to be screened with the pure tone method, and then there will be other children, maybe, whose primary language is different from your own, or children with certain disabilities for whom the screening may not be achievable.

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Unknown
Yet we want those children to be screened. Also, we want all children to be able to be screened. So Terry, as the audiologist here, what do you do? What's the backup plan if you can't successfully screen with the pure tone method? Yeah. The the the best backup plan is to have the ability to do odor acoustic emission screening.

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Unknown
You either, have the ability to, to do that and be able to complete the screening, or then it would be necessary to refer to someone who can, get the screening done, which is usually a pediatric audiologist. So we're really, fortunate to have this have or acoustic emissions. You know, as, as William said, it's recommended for birth to three, but, you'll see, and those of you that have already read using it may, already know the ease and speed of this screening, as well as the ability to have it be a backup, has caused many people to reconsider the use of pure tone audiometry with older children.

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Unknown
So some schools and health care providers are switching the only screening for all children so that they have one method, one type of equipment that can be used with all children, regardless of age and development. A level or primary language. And we have, several useful materials. On our website, there's one useful document that can help you and your team think through the use of OAC versus pure tones, which we'll show you, a little bit later.

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Unknown
But, we invite you to be sure and check that out if you face a decision like this. But at a minimum, you'll have to plan for how to screen children who you are unable to screen with pure tone. And that, again, as I mentioned earlier, will be there to do EAS or have an audiologist who can be sure to screen those children in a timely fashion.

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Unknown
Never delaying them just because they were hard to screen. Because, as we've mentioned before, the sometimes the difficult to screen kids may be the very ones who are needing to identify who have a hearing loss. And keep in mind that your your states may have specific regulations on the methodology that needs to be use based on age.

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Unknown
So you'd want to refer to that, especially if you're going to move away from the pure tone method and adopt a universally always as a backup plan will almost universally be accepted as a critical backup plan. So be sure to check out what your state does in fact suggest about that. So you see, okay, screening, on your screen right here.

00:35:20:24 - 00:35:49:09
Unknown
One of the things that we love about screening, especially for younger children, is that we can screen them in a variety of environments, like you see in these photos here. They're not being screened in a foreign environment that they've pulled out. And been put in. They're being screened in their everyday environments where they're already happily spending their time.

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Unknown
Yeah. In fact, the screening works best when children are familiar and they're comfortable with the adults doing the screening and where they can play with the toy, or they can be held, look at a book or even sleep while the screening is being conducted. But being able to go to the children can really speed up the amount of time that it can take to screen a group of them of of children.

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Unknown
And frankly, screening school age children with ease is usually a breeze. Just taking a few minutes per child. So here's some examples of handheld equipment that we're talking about. They're these small devices,

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And Terry, why don't you just tell us a little bit about how the screening procedure works? Yeah, it's going to be similar. We're going to start in a similar fashion is to pure tone by taking a look at the outer ear. But I do want to mention that unlike pure tone audiometry, elite screening is fully automated, meaning that once you start the screening, the equipment independently completes the process.

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Unknown
So your job will be to set up the environment. You're going to insert a probe into the child's ear. Then you're going to manage the child's behavior while the screening is being completed. And just like with pure tone screening to conduct an OAE screening, as I mentioned, we're going to take a thorough look at the outer part of the ear.

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Unknown
Just want to make sure that there's no visible sign of infection or blockage. So let's just play again so you can get a feel for what our training videos look like. This is an excerpt that overviews how each screening works. So there's a small probe is placed in the ear canal that delivers a low volume sound stimulus into the ear.

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Unknown
A cochlea that is functioning normally will respond to the 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 on the computer screen as a pass or refer. A small. So let's take a quick look at, Oh, wait, I skipped over a slide.

00:38:09:47 - 00:38:36:49
Unknown

What happened here? There you go. Terry, you had a comment about that? Yeah. Thank you. I just wanted to say that every normal, healthy inner ear, it's going to produce an emission that can be recorded, like you just, in this way is, is you've seen. And so unlike what we've seen with pure tone screening, the person doing the screening doesn't have to manually step through the various frequencies and the tones being tested.

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Unknown
Once the probe is in the ear, you as the screener will press a button and the entire screening process should be completely automated, automated and and complete automatically. This is really great in the sense that it eliminates all sorts of possibilities for error. Like those that we were so concerned about with pure tone screening. Regardless, though, it still does require thorough training, which can be accomplished online.

00:39:02:26 - 00:39:32:35
Unknown
Just like you can complete the Pure Tone screening online. So here is an actual real time screening without any editing of this little guy. So let's watch what happens here. Are you ready?

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Unknown
Yeah. So they have an actual result that that amount of time. Okay. Let me let me say let's try it out. Please try that one. Now you'll see the handheld device. In the foreground here. There it is. And she's already started the screening. He's already getting her results. So under ideal conditions, that's how this can go. Of course, you know, like so many, tasks, somebody can make it look quite easy.

00:40:13:48 - 00:40:40:32
Unknown
There are going to be children that are difficult to screen for sure, but that's our goal. And with older children it can go like this many, many times. Those two year olds are a little more challenging. But with older age children, it can certainly be a very speedy process. So we've given you an overview of the two evidence based practices.

00:40:40:37 - 00:41:19:13
Unknown
And the question is, you know, regardless of which method you use, your eventually going to have a child that doesn't pass on one or both years. And so what that in order to be evidence based, your screening process has to include a follow up protocol for when children don't pass and so we just have to emphasize that our screening efforts are only as valuable as is our ability to systematically follow up on children who don't pass.

00:41:19:17 - 00:41:50:55
Unknown
So are you able to describe what your follow up process is? Do you know who's involved? Do you have somebody who monitors that process to know when it has satisfactorily been completed and when it has? And so let me just give a quick we'll give a quick overview of what the recommended follow up protocol should look like.

00:41:51:00 - 00:42:24:15
Unknown
So there's one good thing to remember is that the follow up steps of the protocol are the same, regardless of what screening method you're using or how old the child is. Now, there's one main rule to remember, and that's that the screening and follow up process is complete when either the child passes the screening on both ears, or the child receives, an evaluation from an audiologist, and you've obtained the results.

00:42:24:20 - 00:42:54:26
Unknown
Yeah. That's right. And let me just interject, William, that we really want to caution everyone that a screening process isn't complete just because a referral has been made and a letter has been sent home, for example. These are the, only conditions when we get at that, that, pass or we've got the results from the audiologist that we really can say that that screening process is done for a given child.

00:42:54:31 - 00:43:20:53
Unknown
So here is oops, sorry. So here's how the screening and follow up process is supposed to unfold. Keep in mind that we're always talking about screening both ears, and they each need to fulfill the passing criteria for the child to pass. So if an ear passes the screening right off the bat, then the process is complete for that ear.

00:43:20:58 - 00:43:49:05
Unknown
If the ear doesn't pass well, we're not exactly sure why it could be because of any number of things, like a head cold or, wax in the ear that needs to be removed. I mean, you've seen that, right? Terry? Oh, all the time. Yeah. So it wouldn't be practical for every child who doesn't pass the initial screening to be referred to a health care provider, an audio allergist.

00:43:49:10 - 00:44:21:42
Unknown
So if an ear doesn't pass the first screening, instead of making an immediate referral, we wait about two weeks and screen again. And by the way, if one ear passes the first screening and the other doesn't, you don't need to screen the ear that that already passed a second time, just the one that didn't didn't pass. So if the ear that didn't pass the first screening, has a second screening and they pass, then that ear is considered complete.

00:44:21:47 - 00:44:47:14
Unknown
If, however, the ear still doesn't pass the screening, it's at this point that we want to do a middle ear evaluation and we expect about 8% or fewer of the children won't pass the second screening and will actually have to go to a health care provider where a middle ear evaluation can be done with tympanum entry or pneumatic otoscope.

00:44:47:19 - 00:45:05:13
Unknown
Why is this, Terry? Why do we need to do this step? Yeah, I was actually just going to interject here, you know, when, if we look at the most common reason as to why we may not get a passing away or in pure tone, it can. It's due to these factors we talked about, such as fluid in the middle and ear.

00:45:05:13 - 00:45:32:53
Unknown
So you can see that 25% drop to eight because it's we've given them some time to clear up. And now those eight will go, and they'll have a middle ear consultation by their health care provider. They'll get that treated. And then, as William will show you, that, the actual number that, that, don't pass after that will drop significantly lower.

00:45:32:58 - 00:46:00:31
Unknown
Yep. So you'll when you've made a referral for a middle ear consultation, this is not the time to let you take your hands off the wheel. It's actually the time to intensify your attention and to make sure that, you're following up to find out, you know, what is the result of that middle ear evaluation. Now, some of

you may be able to do this yourself, at least to a point.

00:46:00:31 - 00:46:25:28
Unknown
And if you're seeing an ear infection, you can make a referral based on that. And if you're able to determine that the ear appears healthy, then you can continue to just re screen the child again, which always has to happen once we know the ear is healthy and then you'll determine if they pass, then the ear is fine.

00:46:25:28 - 00:46:51:11
Unknown
But if they don't then you want to refer the child to an audio allergist for a complete evaluation. Yeah. William, it might be good. Just to, again, review kind of in our research how those numbers have dropped. But, you know, like, on that, on that re screen, usually less than eight out of 100 children will need those follow up steps.

00:46:51:11 - 00:47:22:36
Unknown
So, you can you can see how that goes from the screening 100, children to, going right down to ultimately 1% needing that final step. Yeah. There you go. You see it on that slide right there. 25, 25% will likely not pass the first screening, but then only eight will not pass the second screening. And then 1% will need to go to an audiologist.

00:47:22:41 - 00:48:11:48
Unknown
So that multi-step process is one that has been used, is used all over the country in many different school and early intervention preschool settings. And then it's a protocol that makes it feasible so that children aren't being over referred to health care providers for middle ear evaluations or over referred to audiologists. And yet they're continuing to be monitored and re screened over a several week period, not longer, so that the children that do need to go to an audiologist because they haven't passed several different times, get to that audiologist.

00:48:11:53 - 00:48:44:40
Unknown
So we've addressed the two components of evidence based screening. The third is all about holding those first two components together as a complete and coherent process. By documenting all the screening outcomes, gathering follow up diagnostic data, and facilitating access to the intervention services that are needed. So we have on our website a variety of resources to help you with this.

00:48:44:40 - 00:49:10:14
Unknown
We have documentation forms. We have a tracking tool spreadsheet that you can use to keep track of all the children that you're trying to screen. We have referral letters that explain your screening process that you can, use and send out to parents or to health care providers. All of that is free for you to use adapt however you'd like.

00:49:10:19 - 00:49:56:11
Unknown
But all of this begs a giant question does it? That and and that is, you know, our goal. Is to make sure that, you've you've done all of this, but are you supposed to be able to do all of this by yourself? Yeah, exactly. I know we're all asking who's responsible for all of this. I, you know, and Cathy chime in here because we know that the school nurses are being pulled in umpteen different directions, and there's only so many hours in the day.

00:49:56:11 - 00:50:30:49
Unknown

So how can you get some support around your screening efforts to make sure that all of this is achievable? Who can you get help from? Sure. So yeah, I wish I had a crystal ball and or a magic wand. That could, fix fix all this. But I think your point, that both you and Terry have been making right along is that the screening process is only as good as the referral process, in the sense that we need to have these, children, for which there's a question regarding their hearing.

00:50:30:54 - 00:51:13:10
Unknown
Prep all the way through the process to have a thorough assessment and to identify those really who need additional support. So who is that? Well, I think, I look at the school nurse. Yeah, hopefully is the manager of this process, oftentimes the, worker bee, if you will, of the process as well. But there's certainly other, opportunities and resources to think about maybe having, during the actual screening process, having volunteers to help you, maybe pooling together with other nurses, either in your district or in your county or in your area, and kind of making a group effort, to, to conduct, screening, you know, kind of do

00:51:13:10 - 00:51:53:40
Unknown
mass screenings, with some colleagues, I think in terms of referral once, once the kids have been screened and what to do about support in terms of referral or two things. And it's really hard to get off the wheel of all the things that you need to be doing every day. But if you can kind of step aside a little bit and do things like putting together, some resource lists so that when you have a question from a parent, you have an immediate, resource where you can refer them to, an audiologist or doctor's office immediately who may, be able to help them working with, community liaisons or whatever that

00:51:53:40 - 00:52:20:19
Unknown
term is for the the parent. A lot of times there's a, a parent that's hired to liaise with the families, in the that of the children who come to the school and working with that person to, follow up regarding referrals, and looking at evidence based ways, what are the ways that it actually works? So sending the paper home work to get people to have, can follow up on a referral?

00:52:20:24 - 00:52:43:09
Unknown
Well, I think the evidence points to know, and that the evidence points to things like making those follow up phone calls, showing up at parent teacher conference and touching base with the parent when they're there, and other ways in which we can, connect directly with parents to help them understand the what that paper was that was sent home and why it's so important.

00:52:43:14 - 00:53:08:19
Unknown
And then understanding the other resources you have, like I said, audiologists who accept Medicaid, Lions Club, if they're in your area, who can maybe help provide services or other other groups, philanthropic groups that might be able to do that. But it's the answer to your question is it depends. Right. It depends on, how many students you're talking about and what your role is.

00:53:08:24 - 00:53:57:40
Unknown
Within the within that school community. If you if you're the only one there, if you have other resources, maybe a secretary in your office or or a community liaison or some even some volunteers. Right. And so there's questions to ask ourselves about our programs, our efforts, like the ones you see on your screen now, to in order to really improve the, the process and to make sure in the end, the children are getting identified and your able to, report on how many they are, what they are identified with in terms of their diagnosis and what kinds of

support or intervention they're receiving, because that's the ultimate the ultimate, indicator.

00:53:57:50 - 00:54:19:27
Unknown
Yeah. And to your point, well, you know, collecting the data and being able to share that with your administrator and with your board, your school board, to look for additional support is often very, very valuable, having that information as well to bring forward and to plan for budgeting. So if you're sitting here thinking, oh, I'd love an way, but I can't afford it.

00:54:19:32 - 00:54:36:30
Unknown
Yeah, you may not be able to have that money in this year's budget, but if it's something that's important and you can show the value to your district, maybe you can either find out if they can, budget money for that or start looking for philanthropic groups, even including, PTO or PTA who might be able to fund fun.

00:54:36:34 - 00:55:10:58
Unknown
These things for you. So we've opened up the Q&A box for the last five minutes here. If some of you have questions, in a moment will also be, putting a link in the chat for our our evaluation, and it will generate a certificate of attendance for your, time today. But what we really hope you'll do after today is go and check out our website, educate yourself more, find out the resources that are there and ask yourself some of these questions.

00:55:11:02 - 00:55:36:40
Unknown
Ask yourself about what do we need to do to make sure that we've all been trained appropriately? So question. Terry. If a student has an autism diagnosis, how can we follow up on the screening process? Yeah. Great question because these are can be some of our most challenging children to screen. We have had more success screening them with OAS and with pure tone.

00:55:36:45 - 00:56:07:00
Unknown
And some of those strategies have been centered around finding an activity, that, that they really like and can get really almost fixated on and then socializing the touch over a period of a few weeks and, and being able to do this screening if after, multiple attempts at screening and you've not been successful, then it is appropriate to go ahead and refer to a pediatric audiologist that would have some more up options in order to assess their hearing.

00:56:07:05 - 00:56:33:24
Unknown
Yeah. So we have a question about are we allowed to forward your presentation? Of course, as I said at the beginning, this this webinar has been recorded and it will be posted on kids hearing.org in the next couple of days. So by all means, you can share that link to them. We're also repeating this webinar next week.

00:56:33:29 - 00:56:59:51
Unknown
And on the screen there you'll see the, the, the information for it and the, QR code. So, if you want to attend next week or have somebody that could please, by all means send them there. We have a question specific about, a the state of Illinois. Yeah. So I'll briefly address that because there's some other really great ones that you can do really quickly.

00:56:59:51 - 00:57:19:08
Unknown
And basically, if you're hearing a vision screen or you are not at this point

that you are not authorized to use it, use, use an easy to make the assessment, as a hearing and vision screener, the student would have to be referred and to an audiology audiologist office who would then use the OAC to do the screening.

00:57:19:08 - 00:57:37:52
Unknown
I know it doesn't make sense. And we are working the Illinois Association of School Nurses. And and Doctor Eileen Moss are working very hard in Illinois to make some of these changes that make a lot more sense. So I'll just leave it at that. And that person can reach out to me or Doctor Moss if they want to talk about it some more.

00:57:37:57 - 00:58:01:05
Unknown
There is progress happening in Illinois, and there is progress happening. Exactly. But, so there's you see the question, Terry, or Will, about, they're screens after six weeks rather than two weeks. Is that okay? What do you think, Terry? Yeah. You know, I'd love to see a screenings, before that six weeks period of time.

00:58:01:10 - 00:58:34:37
Unknown
Just because, we allow precious time to, to go by in those early developmental stages as well as, you know, opportunities that may arise for, like, if we put that out six weeks and then it takes another three weeks to get into a provider, we can kind of keep kicking the ball down the road about, and our protocol has shown, that that two week time period is really effective in bringing those, those children that are able to pass down.

00:58:34:37 - 00:59:06:53
Unknown
And so I would, I would bring it down to the two weeks, if you're able to make that change in your protocol. So the next question, Terry, is at what age is screening recommended? Is it one and done or should it be done at say, entry third grade and fifth grade? What do you recommend? Yeah. So if you recall earlier in our presentation, we talked about how the incidence of hearing loss increases with school age.

00:59:06:58 - 00:59:34:48
Unknown
And so it definitely is not a one and done. In fact, we talk about newborn screening as being able to be used about for that first year of life. And then then we recommend early childhood hearing screening. But I also know that within, some of your school programs, there will be, recommended or mandated grades that you, that you screen out there.

00:59:34:48 - 01:00:13:23
Unknown
And so recognizing that, some of the decisions on grades and things may be done for you, but, it, it, you know, it is essential to, to screen. And we love to see annual screening. We also know that that's not realistic within the school setting, which is why certain grades have been mandated. Yeah. And and of course, whenever there is a concern about a child's hearing or language development, not only should you do a screening, but you want to make a referral for an ideological evaluation, even if the child passes the screening.

01:00:13:28 - 01:00:42:19
Unknown
And then there's one other question about, I know we're at time. Oh, there's maybe another one, but about the unpredictable pattern. So I think there was some confusion. So just how the tone is delivered shouldn't be one second. Wait two seconds, one second, wait two second. It should be in a more staccato. Oh, pattern. It's not about changing the decibels in between each one, staying staying at the decibels, but delivering it in an intermittent way.

01:00:42:23 - 01:01:07:18
Unknown
And my Terry, my saying that. Well, yeah. Yeah, there's I'm seeing two things in this question. One is the, is just as you said, Kathy, that, we're not presenting the onset of the tone in a predictable way. And then the second part of the question I'm reading is, pitch or the frequency? Do we need to jump around by high, low, mid?

01:01:07:23 - 01:01:33:23
Unknown
And that is not as, we follow the protocol with that. There. So, you don't need to jump around by pitch or frequency, but we do want to be, ran it. We, we want to vary, how often we present the stimuli, like, we might pause, it might be quicker, etc.. Yes. Well, I we're at the top of the hour and a little test.

01:01:33:34 - 01:01:59:50
Unknown
So I want to thank everybody for your time and your attention to this topic today and invite you to, review this again. Go to our website, check out our resources and training opportunities there, and if we can be of any further support, please contact us through our website which is Kids hearing.org. You see it on your screen there.

01:01:59:55 - 01:02:26:48
Unknown
And if you'd like to come back next week for a repeat of this webinar, please do so. You can register, with that QR code there, or you'll find, the link on our website as well. Kathy and Terry, thank you. Both of you. Gunnar, thank you for your technical support. And everybody, we hope you have, very good rest of your day to day.

01:02:26:53 - 01:02:32:31
Unknown
Thanks so much to everyone.