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on Maximizing Outcomes with Minimal Resources: CI Kids Without Access to an Auditory Therapist

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>> Donna: Good afternoon, this is Donna Sorkin from Cochlear America's HOPE program. We're ready to begin our session in about one minute. And I just want to remind everyone to download your PowerPoint presentations in the file share section and that is on the left side of the screen.

I would like to begin by thanking the Alexander Graham Bell Association for the Deaf and Hard of Hearing for co-sponsoring this session with us today, and we appreciate the partnership with them.

We're very, very pleased to have with us Don Goldberg from the Cleveland Clinic Foundation to present on Maximizing Outcomes with Minimal Resources: Tips for CI kids without Access to an Auditory Therapist.

This program is part of our HOPE Online series, a program that we established to support the needs of our families with children with cochlear implants and the professionals who work with them. We want our children to have the best possible outcomes and we want to provide families and professionals with whatever they need to make that a reality.

Our presenter today is seen in his kayak so you can have a lovely visual of him as he's talking to you. Dr. Goldberg is Co-Director of the Hearing Program at Cleveland Clinic Foundation. He was previously the Associate Professor of the College of Wooster Ohio. He's the co-author of many articles, chapters and books and the co-author of a very important book on the topic Education Audiology for the Limited Hearing and Preschool. It was published in 1997. Dr. Goldberg is the President-Elect of the Academy for Listening and Spoken

Language of AG Bell and he has very generously shared with us his e-mail contact there. So with that, I'm just very pleased to turn the floor over to Dr. Goldberg. It is a pleasure to have him with us.
>> Don: Great. Thank you so much, Donna. And just for safety after our 12:00 event someone please type and let me know you can hear me. I don't really spend that much time on a kayak so don't think I'm a world athlete or anything.

Thank you for joining us for the next hour. I would like to talk to I'm hoping both parents of children with hearing loss as well as professionals who might be working with some of those families. So without any further ado, I want to show you one of the many kids. This kiddo has moved to Virginia and now to California but one of my little friends who came to the Cleveland Clinic and shown with his Dad and just a great expression and what it is all about learning to listen which is quite exciting.

Two quotes I want to start out with. Parents have to be recognized as educators, the true experts with their children. And we as experts need to serve as consultants to those parents. One of my other all-time favorite quotes is a Chinese proverb in that a parent is worth a million words.

What I wanted to kind of show for you is just an agenda, some of the topics will be kind of fairly quickly reviewed and my

efforts I hope will be to give you information about therapy activities, et cetera.

I do oftentimes start some of my talks with the idea that as much as terminology like auditory-base teaching, auditory-verbal teaching, it is sometimes misunderstood. And I really do want to emphasize that doing auditory work is not just a matter of putting a screen in front of your mouth or sticking a hand in front of your mouth. We will talk a little bit more about that.

I did want to let the folks who are listening and participating know about a wonderful free brochure that is available from the U.S. Department of Education called "Opening Doors," and it really does cover some of the, I think, very important topics in regards to having a child with a hearing loss. So I encourage you to get a sample of that and reorder them in large quantities.

It is not my intent to go into any discussion of one particular mode of communication in particular, but just really emphasize that a cascade of options exist for children at the same time with universal hearing and screenings and sensory technology changes and just families who are oftentimes hearing individuals and many of the children we may work with are coming from families of a great interest in changing listening.

And the quick answer to the following question which communication approach is best for a child, it would of course be resounding, there is no one communication approach that works best for all children.

At the same time, there is a value in asking a variety of questions which may help us and families get to a selection of a choice. The age of the child, degree of hearing loss used to be somewhat of a deal breaker but now with the -- if you will the safety net of a cochlear implant for someone with a hearing loss does not phase me at all even the most profound child has great opportunities with sensory technology.

And unfortunately too often the selection of a method has come down to what is there in your community and that is not the way the Federal Law was originally made.

Whatever the option that a family might choose I encourage family to say become fluent, fluent talkers, if they're in an auditory-based program and fluent in cueing as well as fluent in manual communication, if that is their mode of communication that they elect.

The language development of those children are very much based on good language input.

What are the goals of the family and as we see more and

more children with multiple disabilities that can complicate things, at the same time I would venture to say that numerous benefits as well as potential challenges do exist with each of the modes of communication and families are making a choice.

The consideration of a mode of communication is sometimes influenced by seeing a super star and that is a dangerous precedent but, at the same time, I don't believe any parent makes a wrong decision in their selection and the time that we're in now results in incredible opportunity for great success.

Just very quickly I'm reading notes about my voice going in and out. I'm actually now should having the microphone -- I'm actually now shoving the microphone. Someone said that was good so I'll multi-task with the mic and my curser.

Universal newborn hearing screenings is in place in the majority of the United States and the compliance of those children being screened is high. At the same time we need probably in many places to do a better job getting these kids to follow-up, additional diagnostic testing and the start of amplification in early intervention.

Some of the children we're working with are more complicated in that they present with multiple disabilities and may not have

even been our patients because they would not have survived. But how exciting that we do have these children to learn from. At the same time, I believe we have a strong emphasis on many parts of the United States and an effort for evidence-based practice and a collection of data to guide our interventions.

But notably from my 25, 30 years of working with children, I would state that the sensory technology and emphasizing the cochlear implant has truly changed the landscape of deafness for us and what a great time to have that opportunity, what exciting jobs we have.

Anyway, children with the most significant hearing loss can make use of auditory information. That has been known as far back as those in Austria and Goldstein when he came to the United States and started the central institute for the death and other pioneers such as Ling and Doreen Pollack. I believe the best professional is the parent who is the coach and the primary model for the child for listening.

In fact that parent guidance needs to be the focus of early intervention programs and in so doing, families can learn how to maximize the auditory stimulation throughout the daily activities and really teach incredible spoken language options to these children.

My mentor was Helen Beebe in Easton, Pennsylvania. I just happened to go to college in that town and came across a deaf child who was in kindergarten and essentially that child changed my life.

The other pioneer in the United States is Doreen Pollack or was Doreen Pollack that worked in Colorado and both Doreen Pollack and Helen Beebe are credited as being pioneers of the auditory-verbal approach in the United States. They did not actually know of each other's work for quite a while. But then they did learn of each other. And it changed the world. They were oftentimes pointed out as doing something pretty crazy, teaching a deaf child to listen and the technology they had available to them [audio]

Pollack made a great observation in 1970 that we give back to parents their natural role as the child's first most important teacher and no one could have said it better.

Audiology does become, from my perspective, I'm both a speech pathologist and audiologist, but audiology is absolutely critical to our auditory-based programs. Without audiology, we are not going to provide the old standard and quality of care that needs to be done.

There is a host of physiologic measures including auditory study state response that you'll hear more and more about in

the future, ASSR, and there is a most of behavioral measures and we really need good pediatric audiology and comprehensive audiology to manage the children.

This particular slide shows me being a test assistant with a suction cup on my forehead and perhaps showing you the other side of stuffy Don in that it is very important that that person keep the child at midline when you're doing testing kind of like coming [audio] like a baby. At the same time, a little more serious, we need on-site audiology with our early intervention programs and this would be my preference and the best way to go for children between birth and age 3 years of age. It is critical that a test assistant is engaged and trained well to communicate with the audiologist who I believe parents are great diagnosticians and a protocol does need to exist for testing, when you test the young children.

This is my little friend, Bo. I did get a correction from my noon talk. He is using water wings. At noon I called them swimmies and those are diapers so I apologize to anyone on the word at noon. But swimmies, water wings, excuse me, not swimmy, they go on the biceps of a little child and essentially when Bo came in with his water wings one day he was not going in the water. He had hearing aids on. He went to remove his earmold in his hearing aid and it was actually quite comical. He could not reach it. This should be credited to Heather Rose, an auditory-verbal therapist in north Ohio. I

would love to claim that I invented the idea but Heather should be credited with that. It is a wonderful way for a child who is in a listening program to realize that life is better when you hear and yanking them out is not good. He has since been bilaterally implanted.

When he was coming to see me at a few months of age this is just general recommendations that you can read on your own but I really believe that our audiology needs to include very specific testing and with children who might be wearing CI and a hearing aid or bilateral CIs quite lot of testing is needed to answer some of the questions that we have diagnostically.

Similarly, my philosophy and mantra includes the point that FMs are nonnegotiable unless we are convinced that teachers and parents are going to routinely be 6 inches from the microphone from the hearing aids or somewhat close distances to the implant or implants, they -- these kids are going to have trouble. In noise, at a distance, in reverberation, we really do need to have children with FMs. They can be used with babies, they can be used in preschools for when there is group instruction such as when we start the day with what month it is and what the weather is like and story time when we're reading a book and it is just a no-brainer to me and it is very quickly demonstrated as soon as are listening in a non-FM'd or non-infra red class situation.

So the audiology foundation would include aggressive assessment, aggressive management of sensory aids and consistent use of FM technology and I would suggest that testing needs to be done with the FM and the CI as well as with the HA if the child makes use of that technology.

You should all be familiar with work completed lie Dianne Hammes and her colleagues at Carl Clinic in Illinois and Michael Novak and other folks at the implant program there have developed a body of research that suggests the importance of early intervention. The original study in 2002 was in the annals of otology, rhinology and laryngology. In the areas of auditory skills, respiratory to our speech and production as well as their language skills. And the team at Carl Clinic has presented additional information at the CI meeting in North Carolina this spring which is suggesting similar finding for children implanted at or under 12 months of age. Very important to see the growing body of evidence by early [audio]

Dr. House, one of the individuals very much involved with the development of cochlear implants stated that success with an implant was 10% hardware driven and 90% software driven. We are the software. Families are the software. Programming audiologists who do their work are the software, the therapy that we present, guide and coach families. The software that is absolutely critical.

Let's talk about the development of communication. Swin-swin. Good girl, Trixie. You said swing. What good is saying swing if you can't say push? The point being it is very important that we keep ever present communication. I am a proud to be certified auditory-verbal therapist. At the same time, there are a variety of interventions that have developed listening in the spoken language outcomes and as much as that is my goal and objective of the majority of the children I see, I also am very focused on my patient. It does not have to be only communication mowed driven. It has to be based on what the child is communicating.

So clearly if we're getting good technology and summaries in the interface, it [audio] listening and speech skills and language skills, I am very concerned that we hold on to methodologies when it is important that we always keep in sight the child being the communicator, not just a product of a particular thing. Communication is the key.

The good news is, a very large number of the children that we're working with can in fact be trained via auditory teaching techniques and we can teach families great stuff for them to do at home. So I'm going to concentrate on some of these bullet points on this slide and then proceed to give you therapy ideas and you'll end -- and the majority of today's talk will be on information from a videotape of one of a bilaterally

implanted patient.

There are other techniques that I won't have much time or any time to really focus on but there are things that I do that are sort of the top of my list.

Happen to work at a circular table at my office. Many people have circular tables at their home. I sit beside the child. I elevate my chair at different heights so I'm close to the level of the child's ear and technology and I speak in a regular volume. I sometimes need to monitor I'm not too loud but there is no sense yelling at a person with a hearing aid. There is no need or value in yelling at a person who has a cochlear implant. You want to talk in a regular volume but notably use rich melodic features. I'm singing and I'm capturing the child because of the acoustics. Anyone that wants to teach moo, here is a cow, the cow goes moo. It is probably a boring therapist.

I do things by talking first and then presenting the toy. So I might hide behind my hands my cow but I talk about an animal. Or legs he goes moo or the cow goes moo. The point being if I just handed over the cow the kid would probably throw the cow, suck on the cow and not even be listening or hearing. So capture the child with your acoustics.

Focus on listening by pointing to your ear, and I do a quick

Ling check with almost every therapy case that I see and we'll talk more about learning to listen and sounds.

Parents are the partners and case managers of the children we work with. And there is that hand cue business. I do want to make a quick comment that -- and you'll see the hand cue in part in the videotape but my real emphasis is, if you truly believe that a child with a hearing loss can learn to listen, what would be the point of covering your mouth incorrectly? You need to cover your mouth with your hand on an angle because if you were to put your hand right in front of your mouth, you would be -- if you will -- degrading the signal. You want the best signal in for a child with a hearing loss. It is very important you know what in the heck you're doing and sticking your hand in front of your mouth doesn't make you a therapist. Sticking your hand in front of your mouth correctly I think is the best. That is misunderstood. Some people use the screen because the acoustic hoop doesn't interfere. I use Ling with a screen and I don't want to talk tie child holding a screen in front of my mouth. I don't know about you.

Interplay of targets. We do not do 10 minutes of listening and we work and go oh let's do speech for five minutes and then go on to language skills and then once make them think. It is an integration of those four domains. Every session, every interaction with the parent can emphasize the listening and speaking language and think about the child. It can be

natural. What is better than baking cookies with a child and talking about opening the refrigerator and here is the cookie dough and slicing the cookie dough. Slice, slice, slice, mmm, mmm, the oven is hot. That is the way life is taught to other children and that is the way it can be done here. So natural language stimulates.

It is hard to believe because I have been talking straight for 20 minutes without a breath but you also need to shut up or at least pause. Wait with an expectant look because you're so interested in what that kid is going to say but if you're talking all the time, it is a little hard for them to get much of a chance. Probably one of the best sources of information about taking turns is the Hanen Program which is two slides from now. I jumped the gun. Check this comic. Hi, Trixie, how are you today? Ma-ma me-de-de da-doo. I hate it when they ask how you are and don't wait for an answer. Pause and let the child talk. The Hanen Program is in Toronto and can be accessed by their website and phone number. Here is a good way to talk, like a good seesaw ride and it happens when each partner takes their turn.

Put it back into hearing. I know a lot of people are into talk about the sandwich. Beebe in the forever years ago talked about putting it back into hearing. It is not as if I have never let a child look at my slips or tapped out syllables on a child's forearm. But if and when I do those other techniques, those

other cues, I then go back to audition. If I'm counting out airplane as a word then I'll go to the microphone and say again airplane. The airplane. Ahh. Moving on. You want to make sure it is fun. If you're not having fun, why the heck are you doing it? Life needs to be fun for these children. And for the therapist.

So let's talk about a hierarchy and then get to therapy. This is the basic hierarchy originally described by Urber specifically in 1982 talked about in auditory teaching, auditory training, excuse me. I think it was auditory training. Was there a sound is detection, preference and absence. Discrimination. Does it sound different from another sound? Aba saying apa different. Very basic. Being the most basic. Where we spend a lot of our energy is recognition and identification. I need the cow. Give me the animal that says moo. Which animal should we put in the barn, et cetera, et cetera. They make a pointing selection or they say back what we say. But where we're heading is to go to comprehension. But there is so many other levels of an auditory hierarchy. Nancy Skanke is a great friend in Colorado talked about a hierarchy that reflects some of the work and Beebe and Pollack and this list continues in 17 different levels of auditory work and these are just some of the highlights.

In detection I have alarm clocks that go off in my therapy room that points to our ear. The phone rings and we point to our

ear and sometimes we go answer the phone. Wake-up games we put our head down in a pillow and we go boo or wake up or make a noisemaker go off and we point to our ear and we frightenly opening our eyes and then we have the child put down his or her head on the pillow and we wake them up. They much more prefer putting my head down and making me jump up and have a heart attack.

Marching games that we're listening to music we're going march, march, march, and someone hits the pause button and we stop. No noise. Quiet. And then noise comes back on and we march once again. Auditory attention focus on speech. Distance hearing primarily having to do with the fact that we cannot always hear at the exact same level so if you're using FMs all the time you need to make sure that you can hear. Without the FM they have an understanding that not all sounds sound the same. Sounds at a distance is not as loud. Left and right identification, that is also important to play with young children who are learning to listen. Specifically the bird call example was I get stuffed birds that make a bird call and one is to the right and one is to the left. The child closes his or her eyes and needs to point to the bird that made the sound. There is also lots of identification games that we can talk about and then I use memory as an activity. So instead of just clearing off your table deck, why don't you just say, I need the dog and the cow. I need the -- all the animals with legs.

Remember, at one point it might be okay to give them back in this order, orange pig, the green cow, and the yellow bird. Anyway, memory is very important.

We do things in quiet and also we practice in noise. There are noise tapes and noise CDs that can be ordered. One might have background noise including cafeteria or a fan, cafeteria noise, multi-speaker babble, cassettes and CDs.

Tracking action having to do with using storybook information whereby the child listens and repeats back various chunks of information presented through listening which we -- I would be happy to talk about perhaps off-line and then we're moving to the understanding level.

So let's talk about what you might see in a lesson. The parent is a partner. We're in a good acoustic environment starting out quiet. We seat ourselves or should seat ourselves close to the microphone and with our buy lateral cases I will sometimes grab the right CI, sit on that side. Next session I can position the child or position myself on the other side. And this does not preclude your ever sitting across the table from a child but I really do for nature of therapy, nature of working with a child by using a variety of things.

I might start lessons particularly with listening check and I use

Experience Books. This is a page [audio] a Geordi when I worked with her in a previous life and then this is a website and some additional websites for resources to get an Experience Book and growing with children. And there has been a HOPE presentation on Experience Books and I think it was just a few weeks ago.

Learning to listen lesson should see the therapist as a coach. We need to talk less and have parents talk more. We can take a turn and hand the toy over to the parent and let them take the next turn. Talk less. I focus on listening and hide things and I get very excited as I play with my toys and we integrate as we've mentioned before.

And the Ling thing for speech, I would say it is oftentimes less on our radar screen because with early intervention we don't have to do much for remedial but should we need to the wisdom is there for us to do so.

In addition, I follow the child's lead, but I make the caveat that that is up to a point. I have very specific goals and objectives that do need attention. Just because the child is kind of flitting around doesn't mean, in my particular case, pull things off the shelf going, I think I'll play with this game next. We need control and the things that we have to have for the child specifically prepared and executed.

Capitalize on acoustic opportunities such as the phone ringing and knocks on the door, airplanes overhead, different sounds. And we use story books in almost every setting.

Think out of the box. How you learned it in grad school certainly doesn't mean how you do it now. There should be pausing, thinking emphased. And I do want to stress that there is no curriculum that says, this is what happens on day one, lesson one, two, lesson three. The curriculum is the curriculum of life, the curriculum of the child's interests and needs, the curriculum of what makes sense developmentally. There is no cookbook for any of our interventions in raising a child. And then our sessions therefore have to be diagnostic to then modify and have us move on to future goals and objectives for that.

So let's talk very briefly about some diagnostics and get to therapy. Hearing loss does not equal auditory function. I'm afraid at the variations that is in their audiograms

The Ling sounds, ah, oo, ee, they should be credited to Ling and Ling. Ann Ling was the co-author and Spoken Language is the title in 1978. I would also suggest that folks make use of a seventh sound. Ann Ling did not agree but Rose Drous, someone I worked with at the Beebe Center years ago, realized that many of the hearing aid kids would say back even when they had not heard it. They knew, okay, what is

the one sound I never hear whenever my therapist said that sound I never hear it and I say it back. The problem is they're smart so if you have no sound the presentation is nothing and really do need to say back no sound.

No sound makes a lot of sense and I'm amazed how humored the children seem to be when they hear no sound. So again, Ling and Ling for the sounds and Rose Drous for free and gifted the 7th sound of silence.

Here is Reagan dropping rings. I would certainly at her age have her repeat back or just have photos of a couple of different ways she had been taught.

Ling at a distance makes since to me and essentially in my fairly small offices I will present it at 1 foot, 2 foot, 3 feet and maybe 6 feet if we really have a clear path to get 6 feet away from a child. I will periodically test both CIs just the right CI, just the left CI for my lateral kids and I will measure CI in hearing aids, CI only.

The early speech perception measure is something that I would strongly recommend you be aware of. And I will be careful as I try to end sentences. I think we have some microphone issues that continue and I apologize.

This is the sub-test one pattern perception and the ESP does

in fact come with toys that represent these things. First column would be one syllable. Second column of cookies, third column of responding word and depending on the child's ability to hear the pattern the child could move on to all spon d, and then he could move to sub test d and all the monosyllabic and food and boot and boat and they are similar. And these are things I would use for diagnostic measures and I would encourage you to be aware of them as well and they are available by Advanced Bionics, a series of 10 questions that are responded in a frequency measure of zero, one, two, three and four to get some auditory diagnostic information. Two very important diagnostic tools. But the combination of cochlear implants and auditory intervention just makes great sense. This is a very happy boy with an implant.

Cochlear implants are unbelievable. Maybe not the most professional slide, but they truly are unbelievable. At the same time, my observation includes the fact that they're not a panacea. It is not just the device for what we do with the device.

Cochlear implants, from my professional perspective, are the greatest technological development for those that have a hearing loss.

And they increase the audibility of sound and what really does occur is a flat response that is low, mid, high frequencies that

are being heard. Those "thresholds" arrest cross the frequency range and do not show the roll off that oftentimes happens in aided audiograms of individuals with hearing aids. This is not maybe completely reflective of all audios but many aided audios have that off-the-speech banana. High frequencies are critical for speech intelligibility and I would say oftentimes 20/25 dB across the board. Very interesting.

Research is quite clear about cochlear implants allowing for prudent listening and noise and improving the quality of sound and quality of life as measured by various tools from recipients. A rainbow of sound truly does back available to these children. Like EI is absolutely critical.

So let's talk about some of the therapy ideas that I would recommend we try. Point to your ear and say the word listen. Ling Six sounds is the most important diagnostic tool. Introduce learning to listen. Animals. Learning to listen for vehicles at very early ages, just a few months old. We sing to the child and any production by the child is responded to and they smile and give feedback what they say and kind of an expansion and an extension of what they have uttered. They are so happy.

Intervention. Speech is important and certainly the access to the speech sounds becomes very obvious when kids have an impact. They need to hear the vows and diphthongs but need

to be exposed to early consonant sounds and I'm amazed at the repertoire of some of these kid. But speech does not qualm language and many of these kids are not in need of very much speech sound therapy but language is crucial.

At the same time parents need to know about normal development so they're not potentially looking for a child producing a word as in pleasure, a child who is quite young, some of these little ones are just able to have speech sound you would never expect of a child that is one, two, 3 years of age. Sorry. I need to hit the right arrow.

Language, these are steps that have been described by Owens and others in the literature and they're crying and cooing stage and three levels of babbling that have been described moving on to a jargon stage and the production of first words. Many 12 month olds do, in fact, say their first words, but you should be aware that the two-word combinations that oftentimes appear at 24 months of age is dependent on a child having approximately 50 expressive words in his or her language. So essentially a child might know up, a child might know Mom but won't say up Mom or even up please until they develop mentally have the corpus of something like 50.

Vocabulary suggestions from several of my colleagues including vehicle sound and vehicle sounds we hear in a lists

in a moment and various animal and miscellaneous sounds and we can have ho-ho-ho for Santa and mm for food and uh-oh as accidents do happen. Whispered ee sound and I go beep-beep for cars and the three syllables with a different sound, ohh or choo-choo for a train. Raspberry for helicopters. Kids think it is quite intriguing that I certainly also moo and oink. One of the little ones talks about Don's silly sounds because I oink like the pig and I bow-woo or ruff-ruff or woof-woof and do ask the parent what kind of a dog sound. They bark in different ways.

And they're just a host of animal toys that should be matched with these associated sounds. Probably never thought about it but we were all raspberry'd and moo'd and spoken to by some of our earliest vocabulary by our parents.

There are many sources and I go to the Dollar Store, but there is one website that packages a group of vehicles and animals for you, just a suggestion. I also want to emphasize the importance of making these animals do something or have pictures of action words because verbs are very important. You can only label so far and the important thing is that there is some good, would to make them do things like my cow is walking or the little girl will brush her hair and will brush her teeth, brush, brush, brush. You can't really go very far if all you have is nouns in your repertoire and then there is the host of phrases that we use with very young kids. We're bathing

the child in good spoken language. We're teaching body parts and we're talking about Santa and clowns and what they say and we say hot or it is yucky or it is dirty with lots of expressions.

We're also emphasizing some speech sound adds we do some of the early introductions so it is bu-bu-bu to get the bubbles which intrigues children or bu-bu for the bus or mo-me, meow.

Classics include learning to listen. Animals and vehicles we have talked about and a collection what was I call go toys. Again Dollar Stores are great. I have this one toy where the car goes shooting off the track when the kid tells me go or we have a flying frog that will only jump across the table when the child says jump. Or a bird that goes up a pole. Up, up, up. And it ain't going down until I hear a vocalization. Early on it could just be anything and then it can be shaped to be own, ou or down. The presence in absence we have some kind of containers like baby wipe containers, one with a noisemaker inside and the other empty and we shake, shake, shake, no sound. You open it up, nothing is inside. Shake, shake, shake, I hear it. Point to my ear because there is a noisemaker. Very early games with the little children. I'm getting paid to play with these children. Nothing could be a cooler job than to teach a young child and his or her parents in the early learning to listen steps.

Alarm clocks I mentioned and although you hear me sing in a few minutes, I don't sing well but I sing at almost every meeting. I have a limited repertoire, always interested in representing my thumb repertoire but singing is what we do with little kids is what they do -- it is what they do with hand motions and nursery rhyme and repetition is great and read, read, read.

I have a collection of books with the props that go with the books and I'm pleased to report I obtained a purple cat on Tuesday when sky came for her last lesson. You'll learn about Sky. They a moment. There are other games, Candy Land, one spot or two pots and we can have multiple matched objects, toy pairs, and the child is on one side of a barrier such as a binder and we're on the other side, just a loose-leaf binder and I have the same size and first I ask them to find the owl and I need the animal that goes moo and I find my cow, they find their cow, we lift the binder and we have the same cow. And then it is their turn. They have to go [oink] and I have to find my pig and lift the binder to find the same toy.

Other things as kids get older in the preschool including wh questions, descriptive words, matrix such as orange car, orange boat, orange caterpillar, buying songs and books.

Older kids we need to make sure we think about Presidents

and states and feelings and a variety of games we might have an opportunity to play.

So classics, I teach memory, concentration memory, I'm not very good at it. We talk about lots of activities and I'll just kind of jump around. Double books are matched books. Cat and the Hat. And I might pause and the child fills in the word or they are reading along as we're reading along the same book. Books, books, books, every day. Every lesson should include books. Lots of things you can use as reinforcers. I'm amazed. M & M's have been an interest or choice. And make sure it is okay with the family. No food allergies. But avoid raisins. They take too long to chew and then it takes too long and they cannot talk if they're chewing.

A good lesson might include manipulatives. I wouldn't say that for a very young child but certainly reinforce it. And good therapists can teach a lot.

All right. Keep in mind the most important environment for these families are in the home. When we're making toast, tieing their shoelace, bath time, we really can be teaching them.

At the same time we need to make sure that we're using standardized measures that actually help us measure growth we want to vary our field, our size of the field, how many

objects are out and move towards having no objects out. Have fun. In addition, I'm sorry, there are resources out there such as different curriculum around another interesting one is an IEP writer by a person in Australia whereby you have host objectives that can be incorporated into this.

Data collection should actuality listening and speech sound repertoire and developing language and one of the ways I actual that we're on course is what is the wear time of the implant? The auditory hierarchy, development of sounds, and language development. Are we on course on a flat audio, production measures and I'm looking for 1 year's growth. Communication is the key and beware of an organization in Northeast Ohio that is trying to help promote and improve communication between implant centers and the school and the center.

Let me tell you about Skye. That is background. She came for her first lesson at three months. She was fitted with hearing aids and an FM and we did know her complete audiogram at day six thanks to this. She was implanted on her birthday, first simultaneous bilateral cochlear implants. She continues to come for intervention. There will be a videotape you're going to see in just 30 seconds and essentially now that she is passed her second birthday, I'm pleased to report she's sometimes producing 5-6 word utterance link and this little girl taught me the word narvel (sp)

which is apparently something with fish. She thinks that Don has funny pig sounds. We're going to move. That is 13 months last hallow wean and I'm going to switch over to a videotape of baby Skye. Enjoy.

[video]

>> When Skye was diagnosed as being deaf shortly after she was born, the decision to go with the bilateral implants was pretty simple. You have two ears. Wouldn't you want to hear on both sides? Isn't that important?

>> It was a little scary. My first thought was I wanted one ear left open for possible new technology but we also know you just cannot wait and we wanted to give her the very best that we could give her and right now, the very best you can give a child that is profoundly deaf is bilateral implants.

>> What we didn't want to do is take the child through surgery twice. We felt that we wanted to get everything taken care of all at once if at all possible

>> Our surgeon, Dr. Weber, told us the biggest concern was the anesthesia and how long she would be asleep for the surgery. But as it turned out there was no problem with that.

>> She received her implants on her first birthday. It was her birthday present. That is what her parents wanted to give her for her birthday. And it was probably one of the most heartfelt day that I've had.

>> We knew that language and the time frame of getting language into a young child is early on. You cannot wait for a technology. There is always going to be something better in

six months.
>> She was discovered as being profoundly deaf at six days old and so here we are almost a year later having the surgery and it was just a relief to have it finally happening.
>> Surgery was about two-and-a-half to three hours. And we were brought back.
>> They had the bandage on their head and they're crying and they don't understand what is going on. But that passes fairly quickly.
>> Within a couple of ours she was drinking and had a little to eat and was ready to go home and came home around 3:00 in the afternoon. Within two weeks of Skye's surgery the swelling had gone down.
>> We were counting down the days so we could go in and get her switched on
>> Each day we were closer to that moment where we could really get started in our life and her life of hearing.
>> Ready. Down. Ready. Down.
>> The parent's responsibility with an implanted child really comes down to filling a child with as much language as possible. Some of it has to do with just talking. A lot of it has to do with specific sounds and baking therapy into every aspect of your day.
>> Having a hearing-impaired child every minute counts. So that is why our family does it as a group project. All of us are involved and everybody takes their own part.
>> Okay. That's good walking.

>> Every morning Jenny's father comes over. He's playing with her. Reading to her. Just has a great time. Let's try the duck again from up on the top. Can you put him up there? That's right. Look how fast he goes. Quack-quack.
>> He takes care of her a couple of hours while I go to the story or to the gym and get something done which is wonderful for me because I have some time away and Skye gets somebody else to play with
>> Skye.
>> I hear a voice
>> Hi, there. I need to go to the store. Will you come and say goodbye to me? Have papa pick you up
>> We'll go to the window. Here she goes
>> Okay. Out the door.
>> Bye, Skye. See you later
>> Goodbye, Mom. Let's see if we can see her. Here, Skye. There is Mom. Bye-bye. Bye-bye. That is your monkey. Do you want to tickle his tummy? Oh, yes. See how he smiles. We're still waving at Mom and she's already around the corner.
>> Uh-oh
>> Uh-oh.
>> Let's look for squirrels and birds.
>> They spend the morning talking. That is what my Dad does. He just feeds in the language.
>> Can you hear how different the sound is? Listen to this one. [Knocking]

>> Excellent. We're going to make some noise. Some music.
[Playing piano]
>> Let's see if you can make as loud of a sound down here. Good. Black key. Okay. Go ahead.
>> Pretty in blue, yes you are.
>> The therapy you go to is to keep you on track, pushing your child ahead and, so, Dr. Goldberg keeps track of Skye's language and progression. Skye is great!
>> Yes, you are.
[Singing]
The itsy-bitsy spider went up the waterspout ...
[End singing]
>> Before the implant she was profoundly deaf and in four and a half months post cochlear implantation she's able to hear her name first time it is called just through listening. When they start going itsy-bitsy spider but only through listening she starts moving her fingers: Yeah.
>> There are certainly goals and objectives that I have in mind but I think the real essence of what I do here is I serve as a coach.
>> Baa-aa, I said it, baa-aa. I think we need a new animal.
>> Baa-aa.
>> Good girl, nice sound.
>> I do my best job if I'm helping a family really know what to do with their child. I give them guidelines of the road map they're going down knowing about typical development, more emphasis.

>> Okay

>> Acoustic, mmm, meow, and she'll get the idea. No question.

>> Okay.

>> The play has worked well for Skye and I think she thinks I'm a big playmate, but hopefully what I have really done is give back to parents their natural role as a child's first and most important teacher. In some way my patients are the parents.

[Video end]

>> Don: Okay, hopefully I'm on. Just a couple of very quick last slides I want to point out. I hope everyone is familiar and aware of the Alexander Graham Bell Association for the Deaf and Hard of Hearing in Washington and some of the great materials and work that they do. I would encourage folks to keep abreast of many of the HOPE developments under Donna Sorkin's leadership at Cochlear Americas. There is wonderful HOPE Notes including a whole new series of six new ones such as when a child is speaking in a language other than English at the home and children with abilities and speech training. And I would recommend getting for free from Cochlear a DVD called Start Listening: A Guide to Pediatric Rehabilitation, and it comes with the companion booklet, Getting Started: Practical Tips for Parents. Absolutely some of the best 20 minutes of videotape I have ever seen.

There are things for salel from Cochlear Americas and other

manufacturers and the handouts include a list of resources, too. And if I had to buy stuff and go to different websites, these would be tops on them. A wonderful package program by Karen Rocci and Rock Around the Clock and My Baby and Me, and the St. Gabriel's Curriculum, and I'm going to get to questions if there is any time. But I do want to just give the mic back to Donna for a moment and I can stick around for a little bit. I actually have a patient, one of my patients comes at 4:15, but I can hang on for a little bit but I'm going to moot and give the mic to Judy Harrison and/or Donna Sorkin.

>> Donna: Thank you so much, Don, for a fabulous seminar. You want to click on the left side where you see the chat if you have any questions. Go ahead and type in your questions while I'm talking for a minute. I did want to mention that the video of Skye is part of a larger video produced by Cochlear Americas on bilateral cochlear implants and that will be available very, very soon. And just to remind everyone that we do run these courses about twice a month and these are the upcoming ones. I have them listed up there for you. There are right now over 40 archived recorded courses that are available with a certificate of participation and CEUs from the American Academy of audiologists so I encourage you to go back and pick up some of the ones that perhaps you have not seen. We do have a lot on our website and I listed the Cochlear website there and also you need to take a look at the HOPE area of the Cochlear website and to get there you do a back slash HOPE and that will take you to other resources.

Send me your inquiries and comments on HOPE. Don has been very generous in sharing his e-mail with everyone. And then again if you can just download the files on the left side in the file share, if you do that right now, you can say save to my computer. You can have both the PowerPoint and some additional handouts from Don and feedback form which will then generate a certificate of participation for us. We would appreciate hearing from you on that. And now I'm just going to turn the floor back to our fabulous speaker to answer any questions that you may have gotten. I don't see any up there, Don, but maybe you have some that I don't see.

>> Don: Thank you, Donna just real quick, I know Jane Seaton wrote about a question on a side, NTS and Jane if you just tell me where the NTS was because I'm not sure what that is. I don't know that acronym. I need a little orientation. A great question comes at what age should you test the Ling Sound at a dance? I definitely -- at a distance. I start before dropping rings before they turn one and I keep at it and I want them to drop the rings and saying them back as soon as possible. As conges they're going to say them back I would definitely [audio] go the distance. I only measure at distance and record that data on a monthly basis. I do Ling every session and for your information I bought a 3-foot table, whatever the word is, I think it is FOS is that a circumference maybe, but it is 3 feet across and I bought it for doing Ling. Someone has recommended that I come in on where is Waldo. I love it but I'm not good day good at it. Many kids,

including Skye, love I Spy. Thank you, Natalie. And midline when I was talking about being midline in the test booth, you don't want the child looking forward. If the child is looking towards the right or left of the speaker when the sound comes through the speaker you don't know if it is because the child heard the sound and kind of localized to one side or they were just looking at the speaker to start w you get the kid looking forward so a head turn movement is more obvious. Get the resources you mentioned, the DVD, the one from Nancy that I love so much is through Cochlear Americas. I think I wrote the title of that DVD. The middle segment is the one that I love so much. The other is what so expect at a hookup and I think an ALD component was the third piece of it. The bilateral documentary I don't have the information because it was filmed in January and it is to be released. But stay tuned going to Cochlear America's website. I'm not seeing a whole lot of questions so maybe you've all fallen asleep. Hopefully not but please e-mail to my home e-mail or work e-mail.
1 year's growth in 1 year how do we close the gap. Keep working, get good technology and good audiology and monitor carefully and make referrals if things are not moving along because there may be complications such as oral motor issues, cognitive delays, potentially auditory neuropathy and kids are on a different trajectory. But the real key is to show growth. If you're not seeing consistent growth perhaps you have other disabilities. Infant slide last after alarm clock.
Jane, I'm going to look back and then send you an e-mail

because I have to look at the slide and I can't get to it right now. Sorry, Jane. what is the maximum distance a child should be able to respond to a sound? Quite frankly I don't have a big enough office to really show you what kids can do with implants but I have kids responding to S and sh when I go 12 feet out in my office out the outer hall into the waiting room, the listening distance with a cochlear implant is quite phenomenal with the high frequency sounds. You may need to move back pretty far. But activities for the early detection, I play baby games. I play everything pointing out, detection and presence and absence of sound to make the connection that sound has meaning. With that, that might be what I see and send me e-mail and thank you so much very much for your ascension and I want to thank both AG Bell and Cochlear Americas for their wonderful efforts in sharing information about the great potential of deaf children who have cochlear implants and other sensory technology. Thank you for your time, and I guess I should go to work. Thank you all.

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