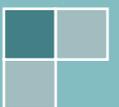


2014

Service Coordination Practice Guide for Children Aged 0 to 3

Hearing Loss

This document provides balanced but condensed information on topics such as hearing loss, communication options, resources, service coordinator responsibilities, and family support, to assist a service coordinator in helping a family whose child with hearing loss is enrolled in Early On®.



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Why Have We Written This Guide?

This guide was developed to answer questions for early intervention personnel who work with young children with all levels of hearing loss. These guidelines provide information about hearing loss and communication options, as well as service coordination activities for a child with hearing loss. The information in this guide is meant to be helpful. Only the Part C service coordination requirements under the Individuals with Disabilities Education Act (IDEA) are mandated. All other information should be considered in terms of how it can be used in daily practice to assist families with children with hearing loss.

For over a decade, efforts have been underway by parents and professionals to improve identification of hearing loss in children. Due to universal newborn hearing screening, infants are being identified with hearing loss at much younger ages. By 2010, efforts in the state of Michigan improved the newborn screening rate to 97% of newborns. Work is now continuing on improving the numbers of screened infants who have an evaluation and diagnosis, if appropriate, by three months of age.

As more children are being identified with a hearing loss, more video and audio technologies, and communication options are available than ever before. While parents are still discovering all of the wonderful things about their infant, they may also have some decisions to make about communication options for their child, which can, at times, seem overwhelming.

The acquisition of language, whether it is spoken, signed, or communicated in other ways, should be acknowledged as a critical aspect of a child's development. Communication is crucial to a child's intellectual, social, emotional, and personal development. Therefore, a communication mode should be chosen based upon what works best for a particular child and family, not what is best for a particular professional or agency. Parents have the right to change their mind about communication. A child, as he or she gets older, may change his or her mind about how he or she would like to communicate.

To assist a service coordinator in helping a family whose child is enrolled in *Early On*, this document provides balanced but condensed information on topics such as hearing loss, communication options, resources, service coordinator responsibilities, and family support. For example, it is not anticipated that a service coordinator will be the person presenting communication options to a family and asking them to choose; however, a service coordinator needs to have enough information about the options to know the appropriate resource connection for the family. A service coordinator with an expanding knowledge base regarding hearing loss may be able to be much more effective in how he/she is able to support a family.

Note: The committee would like to acknowledge that use of certain terms (e.g., hard of hearing, hearing loss, etc.) might not be universally accepted by all readers. We have attempted to use the terms in as positive and appropriate a manner as possible.

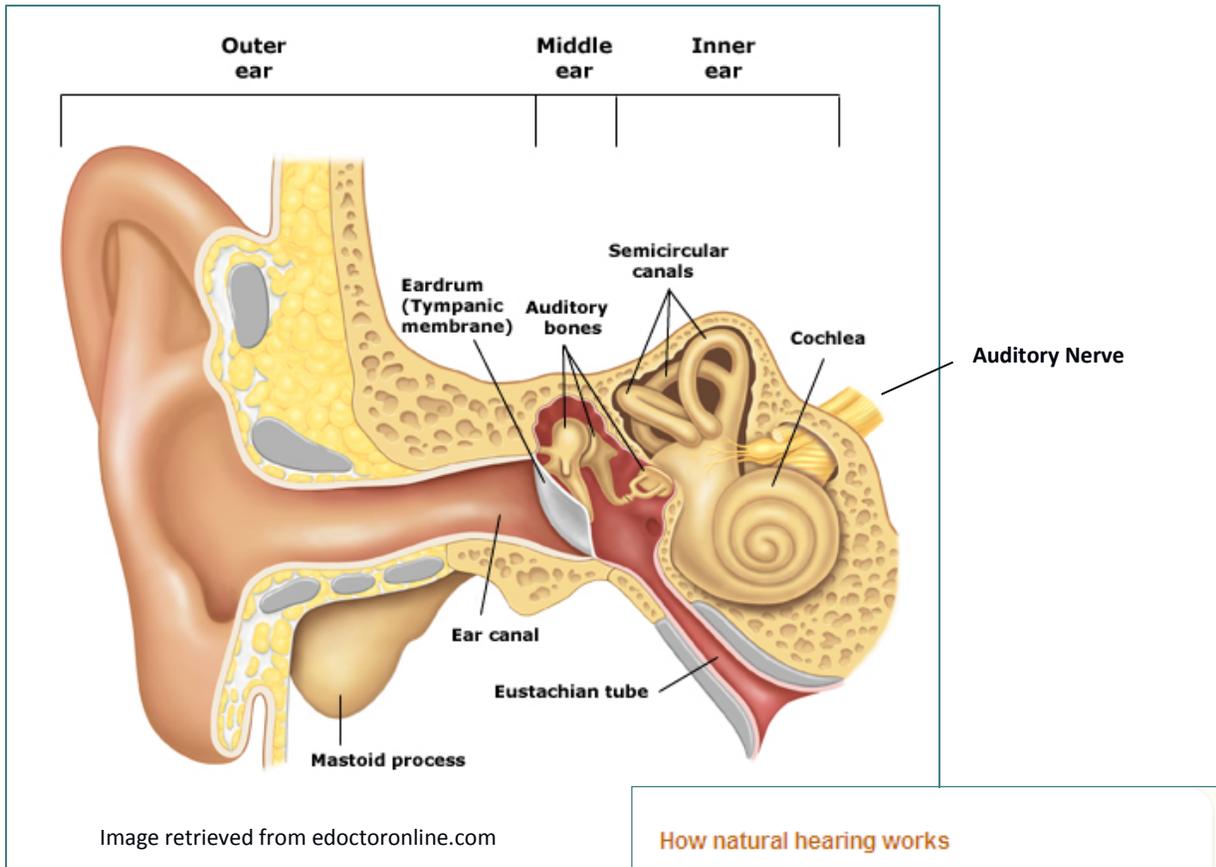
Chapter 1: Hearing Loss

What is Hearing Loss?

Hearing loss can be present at birth (congenital) or can occur later. Hearing loss is a sudden, gradual, or fluctuating decrease in the ability to identify, distinguish, or comprehend sound. Depending on the cause, it can range from mild to profound and can be reversible, temporary, or permanent.

How we hear:

The ear is composed of three primary components: the outer, middle, and inner ear. Issues with any portion of the ear can result in hearing loss. Here is how an ear processes sound:



How natural hearing works

- 1. Ear canal:** Sound moves through the ear canal and strikes the eardrum.
- 2. Eardrum and bones:** Sound waves cause the eardrum to vibrate, sending the bones in the middle ear into motion.
- 3. Inner ear:** This motion causes the fluid inside the inner ear (cochlea) to move the hair cells.
- 4. Hearing nerve:** Hair cells change the movement into electric impulses, which are sent to the hearing nerve in the brain; you hear sound.

Text retrieved from Cochlear™.com

Why is Hearing Important?

Having a hearing loss could influence a child's development in several ways. Without hearing, a child may not develop speech and language along the same timeline as his or her peers. A child with hearing loss may not respond socially, which may lead to social or emotional delays. Early recognition of hearing loss can make a big difference in how a child develops. Once hearing loss is identified, parents can do several things to help their child. They can make sure their child learns how to communicate using interventions and/or technologies that work best for the child and family. Parents can make sure that their child is included in all of the activities at home or child care, and is fully included with his or her siblings and friends. Getting assistance from the right professionals as early as possible will help to ensure their child's development is on track.

At What Age Should Hearing Be Tested?

In the United States, two to three of every 1,000 children are born deaf or have some degree of hearing loss. Hearing is tested on newborns while they are still at the birth hospital, unless parents opt out. The Michigan Early Hearing Detection and Intervention (EHDI) Program is a part of the Michigan Department of Community Health and works with hospitals and clinics to identify newborns and infants who have a hearing loss. While the hospitals perform the hearing screens on the newborns, the EHDI program works with community providers and develops information for families.

The goals for the EHDI Program¹ are "**1-3-6**" and include the following:

"1" - All infants are screened for hearing loss no later than **1 month** of age, preferably before hospital discharge.

"3" - All infants who do not pass the screening will have a diagnostic audiologic evaluation no later than **3 months** of age.

"6" - All infants identified with a hearing loss receive appropriate early intervention services no later than **6 months** of age.

If the child does not pass the initial hearing screening or if hearing loss is suspected, the child's hearing should be tested by an audiologist who has experience working with infants no later than three months of age. If a hearing loss is identified, it is important for the infant to begin to receive early intervention services no later than six months of age. Additionally, all infants with a risk factor for hearing loss (see "Risk Factors for Hearing Loss") should be referred for a diagnostic test by an audiologist at least once by

¹Michigan Early Hearing Detection and Intervention Program, Michigan Department of Community Health. (2001-2013). Early Hearing Detection and Intervention (EHDI) Program. Retrieved March 19, 2013, from http://www.michigan.gov/mdch/0,4612,7-132-2942_4911_21429-55522--,00.html.

the age of 24 to 30 months, as there could be a delayed onset of the hearing loss that would be missed at the newborn hearing screen.

Risk Factors for Hearing Loss

Risk factors for hearing loss, as documented in the Joint Committee on Infant Hearing (JCIH) Year 2007 Position Statement² are listed below. Statements marked with an asterisk (*) are of greater concern for delayed-onset hearing loss. Infants with these conditions should be assessed for hearing loss at least once by the time they are 24 to 30 months of age.

1. Caregiver concern* regarding hearing, speech, language or developmental delay.
2. Family history* of permanent childhood hearing loss.
3. Neonatal intensive care of more than five days or any of the following, regardless of length of stay: extracorporeal membrane oxygenation (ECMO)*, assisted ventilation, exposure to ototoxic medications (gentamicin and tobramycin) or loop diuretics (furosemide/Lasix), and hyperbilirubinemia that requires exchange transfusion.
4. In utero infections such as cytomegalovirus (CMV)*, herpes, rubella, syphilis and toxoplasmosis.
5. Craniofacial anomalies, including those that involve the pinna, ear canal, ear tags, ear pits and temporal bone anomalies.
6. Physical findings, such as white forelock, that are associated with a syndrome known to include a sensorineural or permanent conductive hearing loss.
7. Syndromes associated with hearing loss or progressive or late-onset hearing loss*, such as neurofibromatosis, osteopetrosis, and Usher syndrome; other frequently identified syndromes include Waardenburg, Alport, Pendred, Jervell and Lange-Nielson.
8. Neurodegenerative disorders*, such as Hunter syndrome; or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome.
9. Culture-positive postnatal infections associated with sensorineural hearing loss*, including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis.
10. Head trauma, especially basal skull/temporal bone fracture,* that requires hospitalization.
11. Chemotherapy.*

²Joint Committee on Infant Hearing Detection and Intervention Programs. (2007). Year 2007 Position Statement: Principles and Guidelines for Early Hearing. *Pediatrics*, 120(4). An on-line version can be found at <http://pediatrics.aappublications.org/content/120/4/898.full?ijkey=oj9BAleq210IA&keytype=ref&siteid=aapjournals>.

The JCIH has released a supplement to the 2007 position statement focusing on principles and guidelines for early intervention. The link is provided for those who wish to read the article and consider the information provided: <http://pediatrics.aappublications.org/content/131/4/e1324.full>.

How is Hearing Screened?

Two hearing tests³ are used to screen the hearing of newborns. No behavioral response is necessary and the child only needs to remain quiet.

- **Otoacoustic Emissions (OAE)** - During this test, a small, soft, probe is placed in each ear, one at a time. A soft sound is sent into the ear. A response likened to an “echo” is measured. If there is no echo, the infant should be referred for a diagnostic test.
- **Auditory Brainstem Response (ABR)** – Measures brainstem activity in response to sound. During this test, the child wears earphones and electrodes are placed on the head and ears. Sounds are sent through the earphones while the electrical activity in the child's brain is measured, which will indicate if the child is or is not hearing the sounds at a normal level.

When to Refer for a Hearing Test

Although most children who are referred to *Early On* will have had their newborn hearing screen, Part C of the Individuals with Disabilities Education Act (IDEA) requires that *Early On* include a statement of the child's current hearing status in the Individualized Family Service Plan (IFSP). If a child is not referred to *Early On* as a newborn, an updated hearing status may be needed. In Michigan, an *Early On* program may use the results from the OAE screener (formally known as AuDX), a report from the child's physician, or a subjective questionnaire to determine the child's hearing status. If the OAE indicates a “refer” result, the child should be screened again immediately to make sure the result is consistent. If the second result is “refer,” the family should be referred to their health care provider to determine if the child has an ear infection or other middle ear issue. Once that issue is resolved, the child should have one final screen with the OAE to ensure that “refer” is not still indicated. If a “refer” is still indicated, a discussion should be held with the family about a referral to an audiologist for an evaluation or to their health care provider for additional follow up. It should be noted that the *Performing Preventive Services Handbook*⁴ states that only 50% of children with hearing loss are identified by the comprehensive use of risk assessment questionnaires. A service coordinator using such a questionnaire should be aware, therefore, that if not identified at enrollment, there is the possibility that unidentified

³ Sound Support at U-M, University of Michigan Health System. (2011). Patients and visitors, patient education. Retrieved October 24, 2012, from <http://www.med.umich.edu/childhearinginfo/pv/index.htm#edu>.

⁴ Tanski, S., Garfunkel, L. C., Duncan, P. M., & Weitzman, M. (Eds). (2010). *Performing Preventive Services*. American Academy of Pediatrics.

hearing loss could still affect the child’s overall development. The resource section of this document includes information on pediatric audiology diagnostic sites in Michigan.

Degrees and Types of Hearing Loss

The hearing test by the audiologist will help determine the degree and severity of hearing loss, and the type of hearing loss. Table 1 provides the degree of hearing loss based on the decibel range. Table 2 summarizes types of hearing loss, definitions, and possible causes. For more extensive information, please follow the links to the *American Speech-Language-Hearing Association (ASHA)* website. Information about degree of hearing loss and the impact it can have on language development can be found in Appendix A. A description of the different types of test procedures that can be used to test hearing can be found at: <http://www.med.umich.edu/childhearinginfo/pv/index.htm>.

Additionally, the decibel levels of common sounds such as a dog barking, a dishwasher, or a lawn mower are not always known. Two charts of the decibel levels of common environmental sounds have been included in Appendix B to help clarify which sounds a child with hearing loss may or may not be able to hear.

Table 1: Degree of Hearing Loss 1

Degree of Hearing Loss	Hearing Loss Range (dB HL)
Normal	-10 dB to 15 dB
Slight	16 dB to 25 dB
Mild	26 dB to 40 dB
Moderate	41 dB to 55 dB
Moderately Severe	56 dB to 70 dB
Severe	71 dB to 90 dB
Profound	91+ dB

<http://www.asha.org/public/hearing/Degree-of-Hearing-Loss>

Table 2: Type of Hearing Loss

Type of Hearing Loss	Definition	Possible Causes
Conductive	Occurs when sound is not sent easily through the outer ear canal to the eardrum and the ossicles (tiny bones) of the middle ear.	Fluid in the middle ear; infection; too much earwax; foreign body in the ear canal; malformation of the outer ear, ear canal, or middle ear.
Sensorineural	Occurs when there is damage to the inner ear (cochlea) or to the nerve pathways from the inner ear to the brain. Most times, it cannot be medically or surgically corrected. This is the most common type of permanent hearing loss.	Drugs that are toxic to hearing; hearing loss that runs in families; aging; head trauma; exposure to loud noise.
Mixed	Occurs when a conductive hearing loss happens in combination with a sensorineural hearing loss.	See above

<http://www.asha.org/uploadedFiles/AIS-Hearing-Loss-Types-Degree-Configuration.pdf>

Communication Options

There is a tremendous amount of information available about what communication options are “appropriate” for a child who has a hearing loss. While it is clear that it is a personal choice for the parents of the child, every option has proponents and opponents whose information may make the choice confusing for families. Every option has a spectrum of success, which depends upon many factors, not the least of which is the parents’ commitment to their choice. The excerpt below, taken from the *Beginnings* website,⁵ provides parents with a message about why a communication option is chosen and how parents have the power to pursue success for their child and themselves.

“Language and speech are two different things. While **speech** consists of individual sounds that are combined to make words and sentences, **language** is the meaningful organization of thoughts for communication. Spoken language is normally learned by hearing it. When hearing is impaired, special means must be devised for each child to learn that language. Since every hearing loss is different and every child learns differently, there is no single approach to communicating the meaning of language that is best for all children. The one need that all deaf and hard of hearing children have in common is the need for effective communication of meaningful information, including information that says, “I love you.”

Advocates of all communication approaches may tell you that their method is in some way natural. All communication is natural for some people under certain circumstances and there are many ways to accomplish it. All the approaches work toward developing communication, and they all stress things like receptive language (understanding) and expressive language development. Most work on speech development and all work on reading skills. All have been successful with children with varying degrees of hearing loss. Many families have chosen to use aspects of different programs, combining what works for their child. The only thing that makes one approach better than another is when that approach happens to work better for a particular child. The teachers are trained educators and they usually understand the necessity of developing the total child. In any case, it is the degree of a parent's involvement with the program that seems to make the greatest difference.

Remember that the choice of educational approach must involve consideration of the child's needs, the family situation, and the programs available in the area. Once you have chosen an approach, it is important to learn it and give it a fair chance to succeed. However, if you find that an approach is not working for your child, you should not feel locked-in to it. Another approach may work better. You have the right and the responsibility to re-evaluate your child's progress and request changes when they are appropriate.”

⁵ Beginnings. (2011-2012). *Communication Decisions*. Retrieved Nov. 2, 2012, from: <http://www.ncbegin.org>

There are three primary philosophies about teaching communication skills to children with hearing loss:

- **Visual** – in which the primary mode of communication is a visual language system,
- **Listening and Spoken Language** – in which the primary mode of communication is through auditory/oral means emphasized with technology such as hearing aids,
- **Combined** – in which the primary mode of communication utilizes both visual and auditory methods to enhance communication and may include technology.

Parents need to receive comprehensive information about each philosophy before making a decision about which is best for their child and family. A few things parents should consider include:

- Do we know and understand the available options?
- What kind of appointments/follow up will be necessary to be successful with this option?
- What is the time commitment for this methodology?
- Are there resources available in our area for this methodology? If not, where can we go to learn our preferred methodology?
- Will other family members be willing to learn the methodology and be able to communicate with our child?
- What are the advantages/disadvantages for each option?
- Would we like to meet someone who utilizes this option with his or her child?
- Would we like to meet an adult who is deaf or has hearing loss? (Please see the resource section for information on this topic.)
- How do we envision our family using this option with our child in the future?
- What option will allow our child to have the most access to language?

Visual Philosophy

Sign Language (ASL)

American Sign Language (ASL) is a visual language. The shape, placement, and movement of the hands, as well as facial expressions and body movements, all play important parts in conveying information. Like any spoken language, ASL is a language distinct from English with its own unique rules of grammar and syntax. A family who chooses this option needs to become fluent in the language, if they are not already, and may want to be involved in the Deaf community.

Sign Systems⁶

English Sign Systems

English Sign Systems are “sign systems developed for educational purposes that use manual signs in English word order; sometimes with added affixes that are not present in ASL. Some of the signs are

⁶ National Association of State Directors of Special Education, Inc. (2006). Meeting the Needs of Students Who Are Deaf or Hard of Hearing, Educational Service Guidelines. <http://www.nasdse.org/publications-t577/meeting-the-needs-of-students-who-are-deaf-or-hard.aspx>

borrowed from ASL, and others have been invented to represent elements of English visually. Signing Exact English and Seeing Essential English are two examples of invented systems.”

Manually Coded English (MCE)

MCE is a term applied to a variety of systems that use signs, fingerspelling, or gestures separately or in combination to represent English manually.

Pidgin Sign English (PSE)

PSE is a variety of sign language that combines some features of ASL and English. It is sometimes called Contact Signing.

Listening and Spoken Language

Auditory-Verbal (A-V)/ Auditory-Oral (A-O)

Historically, families who have chosen a spoken language outcome for their child generally participated in either auditory-verbal or auditory-oral methodologies. Both methods are similar in that children achieving communication using these methods are taught to listen and talk with the support of hearing technology as well as techniques that maximize a child’s ability to use his or her residual hearing. Today, there is less separation between the two options. In both cases, hearing technology supports the child’s learning and certified Listening and Spoken Language Therapists support parents to be the child’s most important teachers of language.

Combined Philosophy

Cued Speech

This approach utilizes visual pathways to develop spoken language and assist with literacy. Listening and lip reading are supplemented with eight hand shapes used in four positions around the face to provide additional cues about speech sounds that look alike (e.g., p and b). “Cueing provides for the eyes the same linguistic building blocks that spoken language creates for the ears.”⁷ Parents/caregivers are trained in how to cue while talking to their child.

Total Communication

This approach is based on the idea of using all means of communication necessary to facilitate language and learning including, but not limited to, fingerspelling, listening, sign language, and spoken language. Technology options such as hearing aids or cochlear implants may or may not be utilized.

Once the family has selected a communication option, a service coordinator can help them through the process in several ways. The assistance families need will vary depending on the communication option

⁷ Oakland Schools and Oakland County Birth to Three Deaf and Hard of Hearing Stakeholders’ Committee. (2008). *Preferred Practice Guidelines for the Assessment of Children Birth to Three who are Deaf or Hard of Hearing*.

they have chosen that provides their child access to language. Parents are never locked into any particular option. Often children will make their preference known when they are able.

Supporting Parent Choice

It is important to understand, as a service coordinator, that the ultimate goal of any communication philosophy is to allow a child access to language. How a child may communicate is a personal choice of the parents which may change as the needs and abilities of the child and family change. If a child is deaf, parents may choose for their child to be a part of the Deaf community. The child may or may not utilize technology options and will communicate using sign language. Alternately, parents may choose to utilize a cochlear implant for their child if appropriate and help their child to speak orally. Both are equally valid options that should be respected by professionals and the family's community, as should any other choices parents may make. The role of a service coordinator is to support the family's choice and assist parents to help their child communicate.

Hearing Technology Options

The choice of technology depends on the type and severity of the hearing loss and the needs of the child. Options include those listed below.

Hearing Aids

If the child has a hearing loss, and the parents decide to pursue the use of an aid, the audiologist may recommend a hearing aid. A hearing aid is a small electronic device the child wears behind the ear that makes some sounds louder. The hearing aid, which can be analog or digital, can be used for different degrees of hearing loss. The audiologist adjusts the correct volume and frequency on the hearing aid based on the child's hearing loss and makes sure that it fits securely. If the hearing aid is digital, there are wider programming options than for an analog hearing aid. If a child has hearing loss in both ears, then generally two hearing aids will be recommended. Additional information about hearing aids can be found at <http://www.nidcd.nih.gov/health/hearing/hearingaid.asp>.⁸

Bone Conduction Hearing Aid

Conventional hearing aids take sounds from outside the ear and then amplify this sound and play it back to the inner ear. Bone conduction hearing aids collect sounds from the outside world and transmit the signal to an oscillator. As this oscillator vibrates against the skull, the inner ear is able to pick up the vibrations and interpret them as sound. Bone conduction hearing aids are designed for people who are unable to use the traditional forms of hearing aids due to atresia or a restricted ear canal. A headband holds the bone conduction hearing aid in place. For children older than five, a **bone-anchored hearing aid** may be used; it is similar to the bone conduction aid but it is surgically implanted as opposed to being worn with a headband.

⁸ National Institute on Deafness and Other Communication Disorders (NIDCD). (2012). *Hearing aids*. Retrieved March 19, 2013, from <http://www.nidcd.nih.gov/health/hearing/hearingaid.asp>.

Frequency Modulated (FM) System

FM or other assistive listening systems are commonly used both at school and at home with children with hearing loss. FM systems use radio signals and allow a child to be able to hear more easily in noisy situations or over distance. A home FM system may allow a young child to hear more of the casual conversations taking place around him/her, replicating a child's natural ability to develop speech and language skills by "overhearing" the language that is part of the natural environment and daily routine with his/her family.⁹

Considerations for Selecting a Hearing Aid

The hearing aid should be selected according to the individual needs of the child. ASHA¹⁰ provides many recommendations regarding selection of a hearing aid for a child, but a parent should work closely with an audiologist who has experience in pediatrics if possible.

http://www.asha.org/public/hearing/treatment/child_aids.htm

Cochlear Implants

The cochlear implant consists of an external portion that sits behind the ear and a second portion that is surgically implanted into the cochlea or inner ear. The implant converts sounds to electrical signals and carries them past the nonworking part of the inner ear to the brain via the auditory nerve. Candidacy for a cochlear implant must be evaluated by an experienced team. Generally, children with severe to profound hearing losses may qualify as well as some children with less profound losses if they have poor speech recognition skills when using appropriate hearing aids. Parents should talk with an audiologist who specializes in cochlear implants to learn more about this technology and decide if the child should participate in an evaluation to determine if he/she is a candidate for a cochlear implant. Additional information about cochlear implants can be found at:

<http://www.nidcd.nih.gov/health/hearing/coch.asp>.¹¹

Unilateral Hearing Loss

Unilateral hearing loss, meaning hearing loss that affects one ear only, is not always thought to be a significant problem because children have full hearing in their other ear. However, some children may experience a delay in language, have difficulty localizing sound, have difficulty understanding speech in noisy situations, or have difficulty hearing sound from another room. Parents should work with their audiologist to learn ways to help their children adjust to having a unilateral loss.

⁹ My Baby's Hearing. (2012). *Hearing aid choices – FM systems*. Retrieved March 19, 2013, from <http://www.babyhearing.org/HearingAmplification/AidChoices/FMSystem.asp>.

¹⁰ American Speech-Language-Hearing Association. (ASHA). (1997-2013). *Children and hearing aids*. Retrieved March 19, 2013, from http://www.asha.org/public/hearing/treatment/child_aids.htm.

¹¹ National Institute on Deafness and other Communication Disorders. (2011). *Cochlear Implants*. Retrieved March 19, 2013, from <http://www.nidcd.nih.gov/health/hearing/coch.asp>.

Children Who Have Dual Sensory Issues

A child with dual sensory issues has both a vision and hearing loss that may range from mild to profound. Often, children who have dual sensory issues have an additional diagnosis, which is the focus of their health care and educational team. Children with Down syndrome, for example, often have vision and hearing loss. Any hearing and vision loss should be given careful consideration regarding how it may impact that child's overall health and education. Central Michigan University has been funded (2013-2018) by a grant from the United States Department of Education, Office of Special Education and Rehabilitative Services (OSERS) to provide education, services, and support throughout the state of Michigan to those who are closely involved with individuals aged birth to 26 with a dual sensory diagnosis. The DeafBlind Central website is a very useful tool for service coordinators who are working with a child with a dual sensory diagnosis and their families (website and contact information is provided in the resource section of this guide).

Chapter 2: Service Coordination

Service Coordinator Identification

Each child eligible under Part C will be provided with a service coordinator who is responsible for coordinating all services across agencies and serving as the single point of contact in helping parents to obtain the services and assistance they need. Service coordination is an active, ongoing process that involves:

- Assisting parents of eligible children in gaining access to the early intervention services and other services identified in the Individualized Family Service Plan (IFSP).
- Coordinating the provision of early intervention services and other services (such as medical services for other than diagnostic and evaluation purposes) that the child needs or is being provided.
- Facilitating the timely delivery of available services.
- Continuously seeking the appropriate services and situations necessary to benefit the development of each child being served for the duration of the child's eligibility.

Service Coordination for a child who is deaf or has a hearing loss includes the activities listed above and should include the following:¹²

- Explanation of and assurance that families understand their rights under Part C.
- Facilitation of IFSP meetings.
- Informational resources including unbiased information about communication options.
- Emotional support including linking to other families with children who are deaf or hard of hearing.
- Coordination of supports and services, including collaboration with physicians, audiologists, school personnel, and other community resources.
- Assistance with obtaining sensory devices including hearing aids and/or cochlear implants, and/or assistive listening technology including help with the process and identification of funding sources.
- Assistance with transition options including the process for transitioning to Part B Early Childhood Special Education (if the child is eligible) and/or community preschool programs.

Identification of a service coordinator who has experience working with children who are deaf or hard of hearing is preferred. However, not every part of the state has access to that level of expertise. If possible, consultation or collaboration with a teacher consultant is encouraged. The Michigan Department of Education-Low Incidence Outreach (MDE-LIO) has teacher consultants who can also provide assistance.

¹² Infant and Toddler Connection of Virginia. (2008). *Early Intervention for Infants and Toddlers with Hearing Loss and Their Families*. Retrieved March 19, 2013, from <http://www.infantva.org/documents/pr-hearingfactsheetreference.pdf>.

Early On Referrals

Referrals to *Early On* for a child with hearing concerns or a diagnosed hearing loss may come from a number of sources, including:

- Audiologists
- Early Hearing Detection and Intervention Program (EHDI)
- Ear, Nose and Throat Physician (Otolaryngologist)
- Parents
- Pediatrician/Physician
- Child Care Centers

The service coordinator will need to ensure that there is consistent communication with the professionals who may already be working with the family. The service coordinator is the primary link for a family with all other services and fulfills an important role.

Procedural Safeguards

Procedural safeguards, also known as Family Rights, are legal safeguards that a family is entitled to under Part C of IDEA. *Early On* has developed materials that are provided to families to educate them about their rights. It is the role of each service coordinator to follow all appropriate procedural safeguards for the entire time a child is enrolled in Part C. Listed below are a few of the procedural safeguards.

- A child's evaluation for eligibility and initial IFSP development must be completed within 45 days of referral.
- Families should be given Prior Written Notice of actions that require a decision-making process. Examples are evaluation, eligibility determination, IFSP development, program requesting/refusing an action/change, family requesting/refusing an action/change, 90-day transition meeting, and exit from Part C. Although it is important to document the activities in the progress notes, Prior Written Notice is separate from documentation and must include a review of the parents' rights.
- Right to consent – a parent must provide informed written consent before a program can start or stop any activity.
- Right to confidentiality.
- Right to participate in their child's program.
- Right to disagree.

Evaluation

The purpose of an evaluation is not only to determine eligibility for early intervention services but to also identify a child's strengths and needs as well as a family's concerns, priorities and resources.

- Eligibility is a fairly straightforward process. A child with a diagnosed Bilateral or Unilateral hearing loss (sensorineural, mixed, or permanent conductive) of ≥ 25 dB at 2+ frequencies between 500 - 4000 Hz is eligible under Established Condition – Hearing Deficiency.

- Identifying the child’s current strengths and needs is part of a continuum of events that begin with referral and continue throughout the time a child is enrolled in early intervention, including evaluation using an appropriate developmental assessment tool. Additional language assessments, including those specifically for children who are deaf/hard of hearing, may assist with identification of the child’s strengths and needs. Assessment of the child’s present developmental levels is an integral part of early intervention services and should be conducted throughout the length of the child’s enrollment.
- A voluntary family interview needs to be conducted in order to determine a family’s concerns, priorities, and resources. Family participation in the evaluation process is very important. The family understands their child better than anyone else and should be considered participants – not observers. The information from the family should be used to identify outcomes that will make the IFSP functional, meaningful, and unique to that family.

It is important for the service coordinator and team to understand where the family is in the process of obtaining a diagnosis. A family whose child has already received a diagnosis of hearing loss will have different needs initially than a family whose child has a possible hearing loss. In addition, a service coordinator will need to consider if any adaptations to the evaluation need to occur in order to ensure the child’s developmental levels are determined as appropriately as possible.

General considerations for a professional when assessing a child with a suspected/diagnosed hearing loss:

- Conduct the evaluation in a quiet setting with limited distractions.
- Ask the parents to describe how the child responds to various people, environments, and sounds.
- Determine if the child is responding to facial expressions.
- Note if more visual cues are needed when interacting with the child.
- Determine if the family understands their child’s hearing loss and its effects on their child’s development.
- Discuss with parents the need to be aware of facial expressions seen by their child with a hearing loss. Children are very aware of parental facial expressions and may not always understand what they mean (i.e., if you are frowning in concentration, but you are not unhappy).

Child has not received a diagnosis of hearing loss prior to referral to *Early On*:

- Was the child referred due to a concern for a hearing loss or a failed hearing screen?
- Are there signs that the family/referral source has seen that indicate a hearing loss may be a concern?
- Are there risk factors that would indicate the child may have a hearing loss?
- Has the child been referred for a hearing evaluation? A child cannot be determined ineligible for *Early On* if hearing is a concern, and an evaluation has not been completed. The service coordinator will need to ensure a hearing screening is completed prior to determination of eligibility. Depending on the results of the screening, the child may need a referral for further evaluation.

Child has received a diagnosis of hearing loss prior to referral to *Early On*:

- If hearing aids were chosen, and the family has received them, the child should wear them for the assessment.
 - Does the family have any concerns about the hearing aids? (Appendix C lists general information about hearing aids. If a family has difficulty with hearing aids and has many questions, the service coordinator may consider suggesting an IFSP outcome to help the family with their questions and concerns.)
 - Has a communication option been discussed with the family, and if so, has one been chosen? Possible IFSP outcomes can be generated regarding helping a family make a choice, and the steps that would need to happen to make that choice successful.
 - What is the length of time the child was unable to hear?
- If hearing aids were not chosen:
 - Have the parents decided upon a communication philosophy?
 - Ask the parents to describe how they have been communicating with their child; what is working?
 - Discuss with the parents what they would like to see happen for their child.
 - Do not try to dissuade the parents from any choice they have made; just respect and support it.

As a child with suspected hearing loss is evaluated, it is important to realize the impact hearing loss has on the child's overall development. Additionally, the age of the child and the age at which his or her hearing loss was identified will affect the assessment of the child's skills. Children identified at an older age typically demonstrate more significant delays in multiple areas of development, particularly if the hearing loss is severe to profound.

- Communication – Children with hearing loss may have a delay in communication. A thorough speech and language evaluation will determine the child's communication strengths and needs.
- Physical – A child with a hearing loss may appear to have balance issues or poor motor development. If a hearing loss is suspected, the child's motor development should be evaluated to ensure there are no delays or difficulties.
- Cognitive – A child with a hearing loss may have age appropriate cognitive ability that is difficult to assess due to the nature of many developmental assessment tools. Particular attention should be paid to observation and parent interview as an addition to any assessment tool that identifies the child's cognitive level.
- Adaptive – As with other domains, self-help skills may be delayed. Many times children may not be able to make their needs and wants understood or may not have had opportunities to develop independent skills.
- Social/Emotional – A child may have significant behavior issues due to frustration at not being able to communicate. In addition, the child may not have been able to feel fully included with peers at child care or with siblings.

Who to Include on the IFSP Team

Under Part C law, the Initial and Annual IFSP team must consist of:

- a. The parent or parents of the child;
- b. Other family members as requested by the parent, if feasible to do so;
- c. An advocate or person outside the family, if the parent requests that the person participate;
- d. The service coordinator;
- e. A person or persons directly involved in conducting the evaluations and assessments; and
- f. As appropriate, persons who will be providing early intervention services to the child and family.

The periodic review of the IFSP, which must happen at a minimum of every six months, must consist of a-d from above. If conditions warrant, provisions must be made for the participation of e-f. However, listed below are participants who may fulfill one or more of the above listed roles on the IFSP team or are recommended for the successful development of the IFSP for a child with a hearing loss.

- Audiologist – Provides information on the hearing loss, gives information on amplification, and discusses communication options with the family.
- Otolaryngologist (ENT) – Provides medical care and may contribute to the IFSP, but may not attend IFSP meetings. Provides medical information to support determination of eligibility.
- Speech Language Pathologist (SLP) – Children with any degree of hearing loss should be evaluated by a Speech-Language Pathologist.
- Teacher Consultant for Hearing Impaired (HI) – If a child is eligible for special education services, this person may also be the service coordinator or may act as a consultant for the assigned coordinator. The Teacher Consultant for HI can discuss communication options with the family and can provide the *Early On* service coordinator with resources for the family.
- Peer (Parent) – May be able to provide support to the family based upon experience.

As always, the service coordinator should communicate with all members of the team to ensure that everyone is kept up to date about what is happening with the child and family. An *Authorization to Share* form should be signed by the parents to allow the sharing of information between the service coordinator and each team member.

Developing the IFSP

In addition to setting functional outcomes and goals for the child, the family's concerns and priorities will be addressed on the IFSP. Parents may want to include on the IFSP outcomes such as:

- Where to find assistance in making an informed decision about the communication model they choose for their child.
- Learning how they can help their child to be more exposed to a person who is a native user of ASL.
- Where to find information on day-to-day tasks such as how to help their child keep the hearing aids on.

IFSP outcomes will depend on whether the family has made a choice about communication options. Appendix D lists communication options and considerations that are involved in each choice.

It is not possible to include in this document the range of outcomes that can and should be developed for a child with hearing loss. It is important to remember, as a team, that the outcomes should address the family's priorities, concerns, and resources; should be functional in nature; should encourage family participation; and should consider the child's developmental level. The IFSP will be more meaningful to the family if the outcomes follow those guidelines.

Linking to Services

In addition to services provided under IDEA, a service coordinator should connect a child and family with "other" needed but not required services. These include but are not limited to:

- Michigan Mandatory Special Education - Depending on the diagnosis or delay, a child may need to be referred to Michigan Mandatory Special Education. Michigan Mandatory Special Education eligibility states that "hearing impairment" is a generic term, which includes both students who are deaf and those who are hard of hearing and refers to students with any type or degree of hearing loss that interferes with development or adversely affects educational performance. A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team, which shall include an audiologist and an otolaryngologist or otologist.
- Audiologist - If one is not already part of the team, an educational or clinical audiologist will assist with diagnosis, amplification, family education, and monitoring the child's level of hearing.
- Otolaryngologist (ENT) - Once a hearing loss is confirmed, a referral to an ENT is needed. The medical diagnosis is provided by the Otolaryngologist based on the audiologist's information and his/her medical examination and is needed for eligibility. The ENT provides clearance for hearing technologies, if they are the option that is chosen, and for possible otologic treatment for the hearing loss.
- Ophthalmologist - An evaluation by an ophthalmologist can determine visual acuity and rule out concomitant or late-onset disorders such as Usher syndrome.
- Children's Special Health Care Services (CSHCS) - A program within Michigan Department of Community Health that will cover diagnostic evaluations to determine eligibility for the program if the family does not have other insurance. CSHCS covers hearing aids and related accessories as well as cochlear implants for those children who qualify. In some instances, CSHCS may also cover speech therapy if determined to be medically necessary. CSHCS does not cover interpretive services, as these are not considered a medical necessity. There is a sliding fee scale for a yearly payment agreement amount; families who meet eligibility for Medicaid are required to apply for MI Child/Healthy Kids coverage in order to continue their CSHCS coverage beyond 90 days.
- Genetics - This evaluation can provide families with information on etiology of hearing loss, prognosis for progression, information on an associated disorder (e.g., renal, vision, cardiac), and likelihood of recurrence in future offspring. This information may influence parental decision making regarding intervention options for their child.
- Sound Support - Part of the University of Michigan Health System, Sound Support provides services to families and professionals across the state and can help the early intervention team

think creatively about how to locate and deliver the services that are needed for a child who may not have access to them in his or her county.

- Guide by Your Side (GBYS) - Coordinated by the Early Hearing Detection and Intervention Program (EHDI) in the Michigan Department of Community Health, the GBYS is a free program for families with infants and young children who are deaf or hard of hearing. GBYS gives families who recently learned of their child's hearing loss an opportunity to meet with another parent of a child who is deaf or hard of hearing.
- Michigan Department of Education-Low Incidence Outreach (MDE-LIO) - MDE-LIO can provide technical assistance and resources to families and professionals statewide to support children who are deaf/hard of hearing.

Chapter 3: Family Support

Service coordinators in early intervention are in a unique position. Many times, they form a close bond with the family and provide a high level of support as they serve the role of the person who keeps everyone working together and communicating. Below are some thoughts a service coordinator should keep in mind when working with a family whose child has been diagnosed with a hearing loss.

Coping Strategies

By the time a family is enrolled in early intervention, the parents or caregivers may be on their way to acceptance of the fact that their child has a hearing loss and be developing coping strategies. Most children with hearing loss are born to parents who can hear. Only about 10% of children with hearing loss are born to parents who are deaf. So this is a new and unfamiliar world for many parents. Strategies that help parents who may feel uncertain about what to do and who find themselves in uncertain or unexpected roles include:

- Finding out all they can about hearing loss and what it means for their child's future development and how it will influence family dynamics.
 - Families may feel isolated because other family members and friends do not understand what the parents of a child with hearing loss are experiencing.
 - Families may need to alter their communication style and learn a new language.
 - A family's network of friends may change as interests and priorities change.
 - Families may feel overwhelmed with so much to learn and so many decisions to make.
 - Siblings may be affected. They may develop more affection and empathy or they may feel stress and jealousy.
- Connecting with other parents and being able to talk with families who understand what parents are going through.
- Finding support if a family needs assurance that they are effective and capable parents to a child with a hearing loss. Many parents do not feel ready to care for a newborn initially, but they gradually become more and more confident in their skills. If the child also has a hearing loss, that confidence might take longer to develop. It is important for parents to know that they and their child will grow and learn together.

Helping to Keep a Family Engaged

Children have had successful outcomes with each of the different methods of communication. Parental involvement is key and success happens when a family actively participates in intervention to the best of their ability. Family members may move in and out of stages of the grieving cycle, may work their way through the fluid process of choosing a communication option, and may need time to learn to become advocates for a child. A service coordinator can keep a family engaged by providing enough information so that parents can make informed choices and by sharing information as the family is ready for it. Working with a family is a journey, not a race.

Supporting Early Literacy and Development

Early literacy is an important part of child development. Exposure to books, printed language, environmental signs and images, all help to prepare a child to excel in school and beyond. Infants and toddlers who have hearing loss enjoy the same activities as children without hearing loss. They love to be read to, sung to, and engaged in interactive, fun, activities. Some reasons why it is important to read with young children who have hearing loss are the same as for all infants and toddlers:¹³

- Reading encourages babies/toddlers to enjoy books. At first, they will be cloth or plastic and put into babies' mouths, but eventually, they will become less like toys and more like books that will get a child's attention.
- Reading together engages babies/toddlers in communication. Books with texture and easy to turn pages are great fun.
- Reading helps babies learn early about stories and will help them learn how to tell their own later on.

Parents can learn ways to read stories to their children no matter which communication option they have chosen. There are great resources to help parents read with their children at the Boys Town National Research Hospital website: *my baby's hearing*, <http://www.babyhearing.org/LanguageLearning/ReadWithMe/index.asp>. Print-ready tip sheets in PDF format, in Spanish and English, are available for parents.

Addressing Other Issues in Addition to Hearing Loss

There may be other issues to consider in addition to hearing loss such as complicated medical issues, a genetic syndrome that is associated with hearing loss, or vision impairment/blindness. Each of these issues will impact what a family identifies as their priorities and concerns. It will not be up to the service coordinator to prioritize these issues. A service coordinator can provide information, but should respect the family's need to focus on what is most important to them and address other issues when the family is ready.

Family Outcomes

One of the hallmarks of early intervention is that a service coordinator should not "do" for a family, but should "empower" a family to do for themselves. Early intervention marks the beginning of a long journey for many parents. At the end of their time in early intervention as they move into additional early childhood services, a family should be able to report early intervention helped them to:

- Know their rights,
- Effectively communicate their children's needs, and
- Help their children develop and learn.

¹³ my baby's hearing. (2012). *Reasons for Reading with Young Children who are Deaf or Hard of Hearing*. Retrieved May 19, 2013 from <http://www.babyhearing.org/LanguageLearning/index.asp>.

Each state that provides Part C services must determine if families are meeting these national outcomes set by the Office of Special Education Programs (OSEP). The state of Michigan has made some progress on improving achievement of these family outcomes, but more work needs to be done. Knowing that infants and toddlers learn best within the context of their relationships with significant caregivers, it is important that all parents and caregivers understand how important they are to their child's development. All parents need to feel that they can clearly advocate for their child in all circumstances and know that they contribute as much to their child's learning, if not more than, any other team member who is working with that family. It is recommended that each program give as much attention to achieving these family outcomes as is given to achieving child outcomes.

Please consider Appendix E – Early Intervention: The Parent's Perspective. It provides insight into parents' thoughts about their experience in intervention.

When to Exit From Part C

Children who are eligible for Part C due to an established medical condition remain eligible for Part C services until they turn three years of age. Parents, as always, may choose to disenroll from Part C at any time. All toddlers receiving services under Michigan Mandatory Special Education may be considered potentially eligible for preschool special education services under Part B of IDEA when they reach the age of eligibility upon their third birthday.

Differences in Services for Children in Part C and Part B

Michigan, as a birth mandate state, is in a unique position compared to many Part C state programs. Children with a hearing loss may be eligible for Michigan Mandatory Special Education (children aged 0-3 years) as well as Part C. All children under three, who are eligible for Michigan Mandatory Special Education, are required to have an IFSP as opposed to an Individualized Education Program (IEP). Since they are dually eligible, all Part C regulations and procedural safeguards need to be followed.

Services for children in Part C are provided in the natural environment, encourage parent participation, and focus on functional outcomes. Part B services, in contrast, are provided in terms of what the child will need in order to be successful in school and are more educationally or academically based. A service coordinator can help a parent understand what the differences are between Part C and Part B prior to initiation of Part B services. Depending upon the intermediate school district (ISD), a child may already have begun to receive services in a school setting, and will not have a significant transition. Nevertheless, all services, from speech therapy to intervention, will continue to focus on the child's strengths and needs.

Transition

Transition from Part C is required for all children whether they are exiting to home, a private preschool, or they are progressing to Part B services under IDEA. A transition conference is required for all children potentially eligible for Part B, and encouraged for children who are not potentially eligible. A transition

plan is required for all children who are exiting from Part C. Transition includes a transition conference and a transition plan.

- A transition conference to discuss any services the child may receive under Part B is required for all children who are potentially eligible for Part B services. Part B services in the state of Michigan include children and youth aged three to 21 years (21 years to 26 years are not considered Part B services). If the child is NOT potentially eligible, reasonable efforts must be made to convene a conference among the lead agency, the family, and other appropriate service providers (not Part B) to discuss other appropriate services the child may receive.
- A transition plan is required for all toddlers enrolled in Part C. The transition plan:
 - Reviews the child's program options for the period from the child's third birthday through the remainder of the school year.
 - Ensures the family of a toddler with a disability who is served under Part C is included in the development of the plan.
 - Is established in the IFSP, not fewer than 90 days and at the discretion of all parties, not more than nine months, before the child's third birthday.
 - Includes the steps to exit from *Early On*, and the steps and services to be taken to support the smooth transition of the child to preschool programs or related services under Part B of IDEA (to the extent that those services are appropriate, and the child is eligible) or to other services that may be available (if appropriate, particularly for those toddlers exiting *Early On* and not eligible for special education).
- A smooth transition can be supported for toddlers and their families by:
 - Discussing the child's needs, discussing possible options for future placement for services, fostering collaboration with the Part C providers, and providing training related to specific family needs.
 - Identifying procedures to prepare the child for changes in service delivery, including steps to help the child adjust to, and function in, a new setting.
 - Confirming that the child find information about the child has been transmitted to the lead agency or other relevant agency, following notification procedures and procedural safeguards, with parental consent.
 - Identifying transition services and other activities that the IFSP team determines are necessary to support the transition of the child.

What a Parent Needs to Know for the IEP

The IEP process can be more daunting to a parent than the IFSP process. Although a service coordinator is not in the position to be an advocate for a child at an IEP meeting, it is within the realm of service coordination to help a parent understand the IEP process. The service coordinator can help prepare the parents by providing knowledge about the IEP, help them to understand what they can expect, and help them to understand their rights under Part B.

Resources to Assist Parents

A service coordinator should be able to help a family locate resources in the community that will help them with the IEP process. Every state, as specified in IDEA, has a Parent Training and Information Center (PTI) that assists families with understanding both the IFSP and IEP process. In Michigan, the current PTI is the Michigan Alliance for Families. Their contact information is listed in the Resource Section.

Children with hearing loss are being identified earlier than ever, which greatly enhances the opportunity for each child to develop his/her full potential. Children with even very mild loss can be identified and provided with necessary adaptations to create success within their families, schools, and ultimately, their communities.

Resources

Resources		
Websites	BEGINNINGS for Parents of Children Who Are Deaf or Hard of Hearing	BEGINNINGS provides an impartial approach to meeting the diverse needs of these families and for the professionals who serve them. Services are also available to deaf parents who have hearing children. www.ncbegin.org
	Laurent Clerc National Deaf Education Center	Information on deaf education, primarily ASL, for children birth to 21 years. http://www.gallaudet.edu/clerc_center.html
	My Baby's Hearing	Part of Boys Town National Research Hospital. Website provides information and education for families about hearing loss and options for treatment and intervention. www.babyhearing.org
	National Association of the Deaf	National organization for, of, and by deaf persons. www.nad.org
	Pediatric Diagnostic Audiologic Evaluation Sites	http://www.michigan.gov/mdch/0,4612,7-132-2942_4911_21429-59378--,00.html
	DeafBlind Central	State of Michigan resource for children who have both a hearing and vision loss. https://www.cmich.edu/colleges/chsbs/Centers/DBCentral/Pages/default.aspx
Family Support	Guide By Your Side™	The Guide By Your Side™ program is an exciting service that provides an opportunity for a family who has just learned of their child's hearing loss to meet with another parent of a deaf or hard of hearing child. The program serves families of children zero to six years of age. www.michigan.gov/ehdi
	National Hands and Voices	An organization dedicated to non-biased support to families whose children are deaf and hard of hearing. http://www.handsandvoices.org/
	Michigan Deaf Association	Statewide association for, of, and by deaf persons. www.mideaf.org
	Alexander Graham Bell Association for the Deaf and Hard of Hearing	Helps families, health care providers, and education professionals understand childhood hearing loss and the importance of early diagnosis and intervention. www.agbell.org
	Michigan Alliance For Families (MAF)	MAF provides information, support, and education for families who have children (birth through 26 years of age) who receive (or may be eligible to receive) special education services. 1-800-552-4821 http://www.michiganallianceforfamilies.org/
	Sound Support	Sound Support is a program within the University of Michigan Health System. Staff provide information to parents whose children are newly diagnosed with hearing loss. Staff also assist educators who are working with children whose goals include spoken language. http://www.med.umich.edu/childhearinginfo/index.htm
Books/Literature	"Choices in Deafness: A Parent's Guide to Communication Options" (3 rd Edition) by Sue Schwartz	"The more you know about your child's hearing loss, the better you will be able to contribute to his growth..." This book is a reference tool for additional information on each of the communication options.
	"Opening Doors: Technology and Communication Options for Children with Hearing Loss"	This family friendly brochure is a great place to help a family begin the process of making an informed choice regarding their child's communication. It is available on-line at: http://www2.ed.gov/about/offices/list/osers/products/opening_doors/index.html .

ASL Resources	Signing Savvy	Sign language video dictionary http://www.signingsavvy.com/
	National Institute on Deafness and Other Communication Disorders	General information about ASL http://www.nidcd.nih.gov/health/hearing/pages/asl.aspx
Insurance/funding	Private Insurance	Some private insurance will cover hearing aids or cochlear implants.
	Medicaid	Medicaid will cover hearing aids, cochlear implants, and therapy for eligible children.
	United Healthcare Children's Foundation	Grant opportunities for families who need funding for service or equipment. www.uhccf.org .
Hearing Aid Loaner Program	Lions Club	Community service organization that can provide refurbished or new hearing aids to families who meet the eligibility requirements. www.lionsclub.org or http://www.lhcmi.org
	Loaner Aids	Some audiologists or others working with children who are deaf or hard of hearing may have aids they can loan to a family.
	Starkey Hearing Foundation	Hear Now is a national non-profit organization committed to assisting permanent United States residents who are deaf or hard of hearing and have limited financial resources. www.Sotheworldmayhear.org
	Quota Club	Children's Hearing Aids Program. Income and other program guidelines apply. www.quota.org
	Michigan Chapter Alexander Graham Bell Association	P.O. Box 250137 Franklin, MI 48025 (313) 331-2378 or email reeve.mark@att.net
	Oticon National Loaner Bank	National hearing aid loaner program for children aged zero to three. http://www.pro.oticonusa.com/pediatrics/clinical-support/oticon-resources/loaner-bank.aspx
Apps	Sign Language (iPhone/iPad/Android)	"Signed Stories"  "Danny the Dragon Meets Jimmy"  "Zoey Goes to the Dog Park" (iBook)  Marlee Signs (free with additional lessons to purchase) 
	Auditory Verbal/Listening (iPhone/iPad/Android)	Sound Matching Apps such as Noah's Ark Animal Sound Matching "What's That Sound?"  "Bitsboard" 
	Other Apps	Search iTunes and Google Play for additional apps that parents might find helpful: Amplifier Apps (e.g., EARs) Vocabulary Tracker Apps Advocacy Apps Hearing Aid Apps (e.g., Starkey Pediatrics or Hearing Aid Tic Tac Toe) Cochlear Implant Apps (e.g., Med-El) For excellent information about apps please visit: http://tinachildress.wordpress.com/

Appendices

Appendix A: The Relationship of Degree of Hearing Loss to Child Development

Relationship of Degree of Hearing Loss to Child Development ¹⁴

UNILATERAL Hearing Loss	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Difficulty hearing or understanding speech in noisy or reverberant environments, especially when the better ear is toward the noise. • Difficulty in hearing or understanding speech if it is soft or distant. • Difficulty determining where sounds are coming from (localization) and who is the speaker in family or group situations. 	<ul style="list-style-type: none"> • Language development may be delayed. • Child may not understand questions or requests. • Child may appear to not be paying attention. • Child may have related delays in social-emotional growth, cognition, adaptive and physical development, and early literacy.
BILATERAL Hearing Loss: 16-25 dB HL	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Difficulty hearing faint or soft speech. • Child likely to exhibit signs of hearing difficulty in noisy environments or with increased distance from speaker. • Comparable to listening with fingers in ears. • Child may miss words, word endings, and certain consonants. • Unaided, child may miss about 10% of speech. 	<ul style="list-style-type: none"> • Speech and language development may be slightly delayed. • Child likely to miss subtle conversation cues that could cause the child to appear inattentive or inappropriate in his response to others. • Child will likely respond to speakers with “huh?” or confused look, especially in the presence of background noise or with increased distance. • Child will have related developmental impact in social/emotional growth, cognition, early literacy.
BILATERAL Hearing Loss: 26-40 dB HL	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Difficulty hearing soft or distant speech. • Cannot hear a whispered conversation in a quiet environment a few inches from the ear. • Unaided, child may miss up to 30% of speech, particularly in noisy environments. 	<ul style="list-style-type: none"> • Speech and language development likely to be delayed. • Child will develop some speech communication with low to medium intelligibility as heard by unfamiliar and familiar listeners. • Speech and language development likely to be marked by the absence of unstressed speech sound (i.e., articles and other unstressed words, tense markers, unvoiced consonants). • Child will have related developmental impact in social/emotional growth, cognition, early literacy.

Note: Numerical values, measured in decibels (dB HL), are based on the average of the hearing loss at three frequencies (500 Hz, 1000 Hz, and 2000 Hz) in the better ear without amplification. Access to hearing technologies and/or visual language may lessen potential impact, but without early intervention, the probability of delay remains.

¹⁴ IDEA Infant & Toddler Coordinators Association, National Center for Hearing Assessment and Management. (2011). *Part C Eligibility Considerations for Infants and Toddlers Who Are Deaf or Hard of Hearing*.

http://www.ideainfanttoddler.org/pdf/Part_C_Eligibility_Considerations_for_Children_with_Hearing_Loss.pdf

BILATERAL Hearing Loss: 41-55 dB HL	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Difficulty hearing or understanding speech spoken at the loudness level of normal conversation unless very close to the speaker (0-3 feet). • Unaided, child may miss 50-75% to 80-100% of speech information (if hearing thresholds are at 55 dB). 	<ul style="list-style-type: none"> • Speech and language development will be delayed. • Child will develop some speech communication but with poor intelligibility as heard by unfamiliar and familiar listeners. Language development will be compromised in all major areas (content, form, use). • Likely to have delayed syntax, limited vocabulary, errors in speech production, and atonal voice quality. • Child will have related developmental impact on social/emotional growth, cognition, early literacy.
BILATERAL Hearing Loss: 56-70 dB HL	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Cannot hear normal conversations in a quiet atmosphere at very close range (1 to 2 feet). • Unaided, conversation must be very loud in order for the child to recognize that someone is speaking. Child may miss up to 100% of speech. 	<ul style="list-style-type: none"> • Speech and language development will be delayed. • Child may develop some speech communication but with poor intelligibility as heard by unfamiliar and familiar listeners. • Language development will be compromised in all major areas (content, form, use). • Child will have related developmental impact in social/emotional growth, cognition, early literacy.
BILATERAL Hearing Loss: 71-90 dB HL	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Cannot hear speech. Can only hear loud noises at close range (i.e., lawn mower). • Child may hear someone “yelling” near their ear. • Unaided, child will miss up to 100% of speech. 	<ul style="list-style-type: none"> • Speech and language development will be delayed. • Child may or may not develop speech communication but with no intelligibility as heard by unfamiliar to familiar listeners. • Language development will be compromised in all major areas (content, form, use). • Child will have related developmental impact in social/emotional growth, cognition, early literacy.
BILATERAL Hearing Loss: 91+ dB HL	
Impact on Hearing	Potential Impact on Speech & Language Development
<ul style="list-style-type: none"> • Cannot hear speech. May only hear or feel very loud noises (i.e., airplane at close distance, chain saw). • Aware of vibrations 	<ul style="list-style-type: none"> • Speech and language development will be delayed. • Child will develop minimal to no speech communication. • Language development will be compromised in all major areas (content, form, use). • Child will have related developmental impact on social/emotional growth, cognition, early literacy.

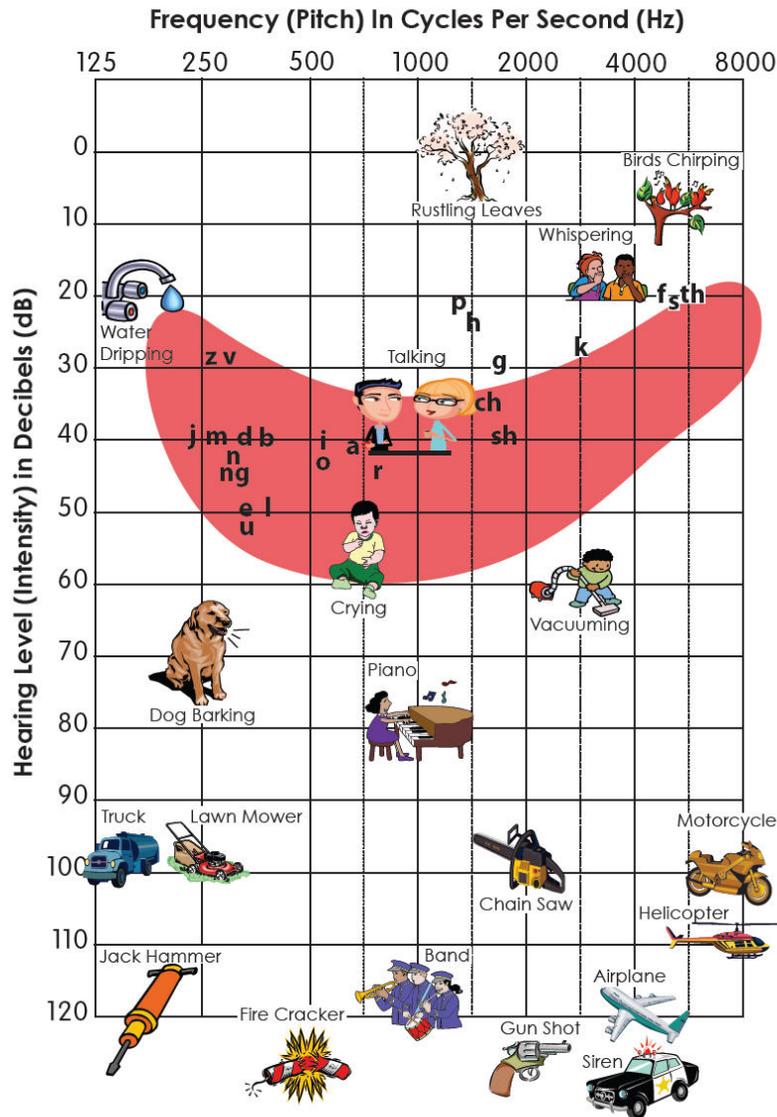
Appendix B: Decibel Levels of Common Environmental Sounds

Home	Work	Recreation
50 - 60 electric toothbrush	40 quiet office, library	40 quiet residential area
50 - 75 washing machine	50 large office	70 freeway traffic
50 - 75 air conditioner	65 - 95 power lawn mower	85 heavy traffic, noisy restaurant
50 - 80 electric shaver	80 manual machine, tools	90 truck, shouted conversation
55 coffee percolator	85 handsaw	95 - 110 motorcycle
55 - 70 dishwasher	90 tractor	100 snowmobile
60 sewing machine	90 - 115 subway	100 school dance, boom box
60 - 85 vacuum cleaner	95 electric drill	110 busy video arcade
60 - 95 hair dryer	100 factory machinery	110 symphony concert
65 - 80 alarm clock	100 woodworking class	110 car horn
70 TV audio	105 snow blower	110 -120 rock concert
70 - 80 coffee grinder	110 power saw	112 personal cassette player on high
70 - 95 garbage disposal	110 leaf blower	117 football game (stadium)
75 - 85 flush toilet	120 chain saw, hammer on nail	120 band concert
80 pop-up toaster	120 pneumatic drills, heavy machine	125 auto stereo (factory installed)
80 doorbell	120 jet plane (at ramp)	130 stock car races
80 ringing telephone	120 ambulance siren	143 bicycle horn
80 whistling kettle	125 chain saw	150 firecracker
80 - 90 food mixer or processor	130 jackhammer, power drill	156 cap gun
80 - 90 blender	130 air raid	157 balloon pop
80 - 95 garbage disposal	130 percussion section at symphony	162 fireworks (at 3 feet)
110 baby crying	140 airplane taking off	166 handgun
110 squeaky toy held close to the ear	150 jet engine taking off	170 shotgun
135 noisy squeeze toys		
<p>** The National Institute for Occupational Safety and Health report that exposure to noise levels above 85 dB will harm hearing over time. Exposure to noise levels above 140 dB can cause damage to hearing after just one exposure. http://www.chcheating.org/noise-center-home/facts-noise/common-environmental-noise-levels</p>		

Audiogram of Familiar Sounds

(Frequency Spectrum of Sounds)

An audiogram is used to graph responses to sounds and speech during certain hearing tests. The area outlined on the audiogram showing most of the speech sounds looks like a banana shape (below). This range is often referred to as the "speech banana." Using the Frequency Spectrum of Sounds parents can recognize where their child's hearing levels are in comparison to the speech banana. The examples on the Spectrum can also help identify types of environmental sounds their child is likely to hear.



The speech sounds on this chart are only approximations. Speech sounds become loud or soft (intensity) depending on the distance between the speaker and listener. The low or high sound of a voice (pitch) will change depending on whether a man, woman or child is speaking.

Adapted from: American Academy of Audiology, www.audiology.org and Northern, J. & Downs, M. (2002). Audiogram of familiar sounds; and Ling, D. & Ling, A (1978). Aural Habilitation.

Appendix C: Hearing Aid Daily Checklist

DAILY HEARING AID CARE CHECKLIST

Source: Beginnings-For Parents of Children who are Deaf or Hard of Hearing, Inc.

- Check the battery with a battery tester.
- Check the volume setting.
- Check the ear mold for clogging, cracks, or rough spots.
- Check the tubing for clogging, cracks, or rough spots.
- Check case for damage.
- Check microphone for clogging.
- Check dials and switches for ease of movement or breakage.
- Use a hearing aid stethoscope to check the quality of sound. Are the sounds /a/= "ah," /u/= "oo," /i/= "ee," /f/, /s/ = "sss," and /sh/ clear?
- Check for feedback (squealing). Connections may not be tight, the tubing may be cracked, or the ear mold may not be fitting properly.
- Look at the tubing: there should not be moisture droplets. If there are, use a hearing aid blower or twirl up a tissue very thin and use it as a wick after shaking as much of the moisture down as you can. Then use another "wick" from the other end of the tubing if necessary. Moisture can be the cause of cracking sounds in the aid.

What is Included with Hearing Aids?

Source: Beginnings-For Parents of Children who are Deaf or Hard of Hearing, Inc

The cost of purchasing hearing aids is high and seems to be escalating. When hearing aids are purchased, most audiologists charge a "bundled" price. This means you are essentially buying everything that is needed to get the best use of the hearing aids, including:

- Hearing aid accessories.
- Limited supply of batteries.
- Fitting services.
- Follow-up visits.
- Verification measures.
- Adjustments.
- Repairs under the manufacturer's warranty.
- In-office repairs.
- Periodic checkups.

Appendix D: Communication Options

Communication Approaches Chart - reproduced with permission from www.ncbegin.org. The chart is meant to be used for information purposes only and may not reflect the opinion of staff who contributed to this document. Additional resources defining communication options are available on the internet.

	American Sign Language (ASL) / English as a Second Language (Visual Approach)	Auditory Verbal (AV) (Auditory Approach)	Cued Speech (CS) (Combined Visual & Auditory Approaches)	Auditory Oral (A-O) (Combined Visual & Auditory Approaches)	Simultaneous Communication (SimComm or Total Communication)
Definitions	<p>A bilingual approach which includes the development of both ASL and English. ASL is a natural, visual/manual language totally accessible to children who are deaf, that has its own grammar and linguistic principles.</p> <p>The acquisition of English is addressed through the use of teaching strategies for English as a Second Language.</p>	<p>An approach emphasizing spoken language development through listening.</p> <p>Child develops spoken language through one-on-one therapy and use of residual hearing with optimal amplification.</p> <p>Strives to make the most of a child's ability to learn through listening; therefore the child does not rely on visual cues.</p>	<p>An auditory-visual communication approach combining a system of hand cues with the natural mouth movements of speech, specifying each sound (phoneme) of spoken language clearly.</p> <p>A hand shape (consonant groups) at a location (vowel groups) cues a syllable. This integration provides clear access to all the phonemes (sounds) as parents coo, babble and talk.</p>	<p>An approach that teaches a child to use his/her remaining hearing through amplification and the use of speechreading/natural gestures/visual cues to aid the child's understanding of language.</p> <p>The use of any form of sign language communication is not encouraged.</p>	<p>An educational philosophy that uses spoken language and sign language simultaneously.</p> <p>Uses an English-based sign language system which can include speech, speechreading, fingerspelling, natural gestures and the use of residual hearing.</p>
Primary Goals	<p>To acquire an age-appropriate internal language as a basis for learning a second language and opportunities for academic achievement.</p> <p>To develop a positive self-image and cultural identity providing access to the Deaf community.</p> <p>To provide basis for learning when written and, when possible, spoken English as a second language.</p>	<p>To develop spoken language through listening by following the stages and sequence of typical development.</p> <p>To develop the skills necessary for successful mainstreaming in school and integration into the hearing community.</p> <p>To promote a positive self-image through natural family and social interactions using spoken language.</p>	<p>To provide clear communication in the spoken language of the home.</p> <p>To develop the phonemic language base to achieve full literacy in conversation, reading and writing.</p> <p>To support speech reading, speech and auditory skill development.</p>	<p>To develop spoken language through listening and visual cues.</p> <p>To develop spoken language and communication skills as necessary for school success and integration into the hearing community.</p>	<p>To provide a bridge to the development of spoken language in the very young child.</p> <p>To provide communication between the child and his/her family, teachers and peers using sign language.</p> <p>To support integration into both the hearing and Deaf communities.</p>
Language Development (Receptive)	<p>The child develops early language concepts as well as higher order cognitive skills by utilizing the visual nature of ASL.</p>	<p>The child develops understanding of spoken language through early and consistent intervention that emphasizes learning through listening in a developmentally appropriate sequence.</p> <p>Optimal listening opportunities require the use of appropriate hearing technology.</p>	<p>The child absorbs language through early, consistent, clear communication using Cued Speech, speechreading and hearing.</p> <p>Cueing boosts auditory awareness, discrimination and understanding.</p>	<p>The child develops internal language through early, consistent listening experiences and developmentally appropriate therapy, which includes speechreading and the use of hearing technology.</p>	<p>The child develops language through speechreading, listening and exposure to a combination of speech and sign-based systems in English order.</p>
Expressive Language	<p>ASL fluency and written English.</p> <p>Ability to code switch from ASL to English (signed, spoken or written as needed).</p>	<p>Spoken and written English.</p>	<p>Cued, spoken and written English or other languages (60+ cued languages).</p>	<p>Spoken and written English.</p>	<p>Spoken English using sign language in English word order and written English.</p>

Hearing (Audition)	<p>Encourages individual decision about amplification.</p> <p>Amplification may provide access to spoken language and allow the child more opportunity to become bilingual.</p>	<p>Early, consistent and appropriate use of hearing technology (hearing aids, cochlear implant(s), FM system) is critical to this approach.</p> <p>Requires ongoing therapy management.</p>	<p>Early, consistent and appropriate use of hearing technology (hearing aids, cochlear implant(s), FM system) is important with this approach.</p> <p>Requires ongoing auditory management.</p>	<p>Early, consistent and appropriate use of hearing technology (hearing aids, cochlear implant(s), FM system) is important with this approach.</p> <p>Requires ongoing auditory management.</p>	<p>Consistent and appropriate use of hearing technology (hearing aids, cochlear implant(s), FM system) is strongly encouraged.</p>
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Family/ Primary Caregiver Responsibilities & Guidance	<p>Parents are committed to learning and using ASL consistently.</p> <p>Families emphasize literacy in the home.</p> <p>Families provide opportunities for interaction with the Deaf community to help ensure a future independent and fulfilled Deaf citizen.</p> <p>ASL is learned through classes, media, websites, and interaction with members of the Deaf community.</p>	<p>Parents are expected to actively participate as partners in sessions with therapist(s) in order to learn strategies and techniques that promote the auditory learning of goals.</p> <p>Families need to carry over the goals established in therapy into the child's daily routines and play activities.</p> <p>Parents learn to create an optimal "listening" learning environment.</p> <p>Parents must also provide a language-rich environment, to make learning through listening a meaningful part of all experiences.</p>	<p>Parents are expected to learn to speak-and-cue at all times in order for children to absorb the phonemes critical to language and reading readiness.</p> <p>Families need to provide consistent use of cues and speech during daily routines and play activities.</p> <p>The system is taught in less than 20 hours through multi-media, classes, and Family Cue Camps. Consistent daily use and practice leads to conversational ease within a year.</p>	<p>Families are expected to provide appropriate carry-over of goals, strategies and techniques from the child's classroom setting and/or individual therapy sessions into daily routines and play activities.</p> <p>Parents need to work with the child's teacher(s) and/or therapist(s) to learn strategies and techniques for developing listening, speechreading and speaking skills in an oral learning environment.</p>	<p>Families are expected to learn and consistently use the chosen English-based sign language system.</p> <p>Parents need to work with the child's teacher(s) and/or therapist(s) to learn strategies that promote language expansion.</p>
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Appendix E: Early Intervention: The Parent's Perspective

A Parents Wish List for Early Interventionists

We wish for Choices:

- Unbiased information about communication options.
- Provide us with the information we need to make well-informed decisions.
- Respect the choices that families make. Let us, the parents, make the final decision.

We wish for Information:

- When we ask for your professional opinion, don't be afraid to give it. But please don't deliver your opinion in "absolutes."
- Give us books, pamphlets; phone numbers, support groups, anything that will be helpful to us in understanding our child's hearing loss and where to find help.
- If we ask a question, and you don't have the answer, help us find the resource where we can find the answer.
- As children and parents grow, their choices and need for information grows.

Parent/Professional Partnership

A Checklist for Attitudes

- Do I believe that families bring unique expertise to our relationship?
- Do I believe in the importance of family participation in decision making for early intervention?
- Do I believe that family members' perspectives and opinions are as important as professionals?

Parent/Professional Partnership

- Parents should drive the process.
- Early Intervention ultimately comes down to "relationship"
- Trust is established through a basic premise of respect toward the parents, their values, and culture.

Choices in Communication

It's about COMMUNICATION, not methodology...

"What good does it do to teach a child to speak, if you give him nothing to say?"

Or

"Deafness is not about hearing, but about communication"

- Choosing a method is a process that is flexible, ongoing, and changeable.
- Early Identification of Deafness allows families a window of time to explore communication options.
- The communication mode you choose is less significant in itself than how well it suits a particular child

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