

GUIDELINES FOR EARLY INTERVENTION

The goals of newborn hearing screening are to provide a hearing screen to all newborns before one month of age, to ensure that all newborns who do not pass the birth admission hearing screen obtain a diagnostic outcome before three months of age, and for all infants identified with hearing loss to obtain intervention services before six months of age (See Attachment C for eligibility). The Joint Committee on Infant Hearing defines the targeted hearing loss for universal newborn hearing screening programs as permanent bilateral or unilateral, sensory or conductive hearing loss, averaging 30-40 dB or more in the frequency region important for speech recognition (approximately 500-4000 Hz). Identifying a baby with hearing loss as early as possible, can allow early intervention strategies to optimize the critical language learning years of a young child. The goal of early intervention is to provide every child with a hearing loss the opportunity to develop an effective communication system. Thus, a primary focus of early intervention is on providing parent(s)/caregiver(s) with the information and skills needed to communicate naturally with their child, as they are engaged in everyday activities.

Research on brain development indicates that the critical time for learning language is from birth to three years of age. Without early identification of hearing loss and subsequent intervention, children are at risk of missing the opportunity for communication and socialization development during early life experiences. The wealth of learning that takes place as the young child develops language is the basis for later literacy and educational development. Likewise, the communication skills, academic achievement, social skills and level of self-esteem acquired by the child will be important factors in determining life options and success as an adult.

I. EARLY INTERVENTION PROCESS

A. Early On ® Michigan

Upon confirmation of hearing loss, a referral to *Early On* ® Michigan, at 1-800-EARLY ON (1-800-327-5966), must take place within 2 working days. An interim Service Coordinator will facilitate the assessment and individualized program planning for the family (See Attachment A: *Early On* ® Michigan Referral Process to Intervention). When the parent(s)/caregiver(s) sign the initial consent for educational evaluation, they will receive a booklet describing their legal rights (Procedural Safeguards). The state and federal governments have established timelines from referral to assessment to service provision. It is strongly recommended that Service Coordinators, working with families, have knowledge of local early intervention programs/services for young children with hearing loss, as well as available resources and service agencies. This information can be found in the *Services For Children Who Are Deaf or Hard of Hearing; A Guide to Resources for Families and Providers* (DCH-0376), which can be obtained, free of charge, by calling the MDCH/EHDI Program at (517) 335-9560.

B. Individualized Family Service Plan (IFSP)

The Service Coordinator will assist the family in developing an Individualized Family Service Plan (IFSP). This document will list the services to be provided

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to the child and the family, based on the child's and family's abilities and needs. The IFSP needs to address the communication needs of the child and his/her family so effective communication can begin immediately. To ensure full participation in the IFSP, parent(s)/caregiver(s) should be informed of communication choices and the importance of their role in making that choice. This information sharing should continue as the interventionists and parent(s)/caregiver(s) work as a team, while monitoring the child's communication development.

II. PRINCIPLES OF EFFECTIVE EARLY INTERVENTION

Infants with confirmed hearing loss should receive intervention as soon as possible or within 45 days of identification of the hearing loss. Professionals in both health care and education, who possess expertise in hearing loss and its effects on early development, should provide this service. Early intervention programs should be family-centered and interdisciplinary. Family-centered care involves the following:

1. Recognizing that the family is the constant in a child's life while the service systems and personnel within those systems fluctuate.
2. Facilitating parent/caregiver-professional collaboration at all levels of health care and in educational intervention.
3. Honoring the racial, ethnic, cultural, and socioeconomic diversity of families.
4. Recognizing family strengths and individuality and respecting different methods of coping.
5. Sharing with parent(s)/caregiver(s), on a continuing basis and in a supportive manner, complete and unbiased information on the various modes of communication used with children who are hearing impaired and the common beliefs about each.
6. Encouraging and facilitating family-to-family support and networking.
7. Understanding and incorporating the development needs of infants, children and their families into early intervention services.
8. Implementing comprehensive policies and programs that provide emotional and financial support to meet the needs of families.
9. Assurance that the design of early intervention services is flexible, accessible, and responsive to family needs.

Professionals should provide parent(s)/caregiver(s) with spoken, written, and/or signed information, as needed, to enable them to make informed choices related to communication options, educational programs, and other services (e.g. Family Support Network). At the diagnostic audiologic evaluation, the audiologist should provide the family with a copy of the *Services For Children Who Are Deaf or Hard of Hearing; A Guide to Resources for Families and Providers* (DCH-0376), which can be obtained, free of charge, by calling the MDCH/EHDI Program at (517) 335-9560. The Medical Home and the Service Coordinator should ensure that the family has received a copy of the resource guide. The resource guide is a starting point for parent(s)/caregiver(s) to obtain information about services. The Service Coordinator should ensure that the family has

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access to other information on general child development as well as the unique needs related to hearing loss and language development. This can be facilitated by the family 1) working with professionals, 2) interacting with other parent(s)/caregiver(s) of children with hearing impairment, 3) interacting with adults who are deaf or hard of hearing, and 4) working with organizations or agencies serving as resources on hearing impairment and deafness. In supplying information to families, professionals must recognize and respect the family's natural transitions through the grieving process at the time of initial identification of hearing loss and at different intervention decision-making stages (Cherow, Dickman, & Epstein, 1999; Luterman, 1985; Luterman & Kurtzer-White, 1999).

A. Audiologic Intervention

For parent(s)/caregiver(s) who decide to provide their child with amplification, early intervention services can provide a vital opportunity for stimulation of the child's auditory system. This can be accomplished through the use of hearing aids, FM systems, cochlear implants or other assistive technology. Information regarding these options will be made available to parent(s)/caregiver(s) by the diagnostic audiologist who will provide them with a copy of the *Services For Children Who Are Deaf or Hard of Hearing; A Guide to Resources for Families and Providers* (DCH-0376), which can be obtained, free of charge, by calling the MDCH/EHDI Program at (517) 335-9560. Input from the interventionists and the parent(s)/caregiver(s) will assist the audiologist in assessing the child's hearing status, the child's benefit from the current amplification system and the need for adjustments. The following best practices are recommended:

1. Amplification
 - a. Binaural hearing aids are recommended for children with bilateral hearing loss. Use of amplification should be initiated within one month of confirmation of hearing loss, or as soon as possible.
 - b. Audiologic management should include real-ear measures and electroacoustic analysis and/or reprogramming of the child's hearing aids.
 - c. Aided and unaided responses across the speech frequencies should be obtained, as early as possible, but no later than twelve months following confirmation of a hearing loss. Behavioral response for ear-specific information (both aided and unaided) should be obtained as early as possible, but no later than 2 years after confirmation of hearing loss. This may mean frequent initial visits to the audiologist.
 - d. New earmolds should be obtained as frequently as necessary, dependent on the growth of the child.
 - e. For audiologic results indicating auditory neuropathy (ABR fail, OAE pass), the appropriateness of hearing aid use may be hard to determine (Hood, 2000).
 - f. Amplification Management and Maintenance

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Families should be counseled regarding the need for audiologic follow-up to monitor the function, use, and appropriateness of amplification. Families should be counseled regarding the need to perform daily listening checks and the need for audiological re-evaluation of a child's amplification. Periodic audiological re-evaluation should include a recheck within 1-2 weeks after the initial fitting, and at 3 month intervals for children age 0-3 years; every 6 months for age 4-6 years; and every 6-12 months for school age children. The frequency of follow-up may need to be increased if fluctuation/progression of the hearing loss is noted and/or if progress is questioned. Ongoing communication between the clinical audiologist and the members of the early intervention team is critical.

2. Audiologic Monitoring

All children with identified hearing loss (i.e., hearing levels $>$ or $=$ to 25 dB HL, unilateral or bilateral, permanent or fluctuating) should receive periodic audiologic monitoring as per the suggested schedule listed below. An immediate audiologic evaluation should be scheduled when there is concern related to change in hearing or hearing aid function.

- a. Bilateral sensorineural hearing loss and permanent conductive hearing loss:
 - 1) Age 0-3: Every 3 months, after hearing loss is confirmed.
 - 2) Age 4-6: Every 6 months, if intervention progress is satisfactory.
 - 3) Age 6 years or older: Every 6-12 months if progress is satisfactory.
- b. Transient conductive hearing loss (e.g., otitis media with effusion), unilateral or bilateral:

Should be monitored after medical treatment (completion of antibiotic treatment, PE tubes, etc.), and/or at least on a 3-4 month basis until resolved and normal hearing is confirmed.
- c. Unilateral hearing loss (sensorineural or permanent conductive):

Infants with unilateral hearing loss should be monitored every 3 months during the first year, then on a 6-months basis after the first year, to rule out changes in the normal hearing ear.

B. Educational Intervention

The mounting evidence for the crucial nature of early experiences in brain development provides the impetus to ensure learning opportunities for infants and young children with hearing loss. Intensive early intervention can positively alter the cognitive and developmental outcomes. Early intervention services should be designed to meet the individualized needs of families and infants, including addressing acquisition of communicative competence, social skills, emotional well-being, and positive self-esteem (Karchmer & Allen, 1999). Effective intervention should also provide ongoing assessment through frequent evaluation

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of a child's progress by the parent(s)/caregiver(s) and interventionists to ensure that a child is progressing at an expected rate. The six frequently cited principles of effective early intervention follow (Meadow-Orleans, Mertens, Sass-Lehrer, & Scott-Olson, 1997; Moeller & Condon, 1994; Ramey & Ramey, 1992, 1998; Stredler-Brown, 1998; Tomblin, Spencer, Flock, Tyler, & Gantz, 1999).

1. **Developmental Timing**
This refers to the age at which services begin and the duration of enrollment. Programs that enroll infants at younger ages and continue longer are found to produce the greatest benefits.
2. **Program Intensity**
The amount of intervention is measured by multiple factors, such as the number of home visits/contacts per week for the infant and family's participation in intervention. Greater developmental progress occurs when the infant and family are actively and regularly involved in intervention.
3. **Direct Learning**
This principle encompasses the idea that center-based and home-based learning experiences are more effective when there is direct (provided by trained professionals) as well as indirect intervention.
4. **Program Breadth and Flexibility**
This notes that successful intervention programs offer a broad spectrum of services and are flexible and multifaceted to meet the unique needs of the infant and family, including infants with additional disabilities beyond their hearing loss.
5. **Infant and Family Individual Differences**
The rate of progress and benefits from the program will differ. Not everyone progresses at the same rate nor benefits from the programs to the same extent.
6. **Environmental Support and Family Involvement**
The benefits of early intervention continue over time depending on the effectiveness of existing supports such as family involvement and environmental supports such as home, school, peers and Medical Home.

C. Communication Skills Intervention Components

The unique features of an early intervention program for children who are deaf or hard of hearing should include the following components. The family, supported by the IFSP team will determine which specific components would be part of each child's intervention plan.

1. **Language Skills Development**
The development of communication skills, particularly language skills, is fundamental to a child's academic, social, cognitive, and linguistic development, as well as mental and physical well-being and will determine, to a great degree, whether that child can become a productive, fulfilled, and capable adult. A child's communication begins developing from birth through natural interactions and conversations between the child and his/her caregivers. Effective interaction between the caregiver

and the young deaf or hard of hearing child is extremely important if language is to develop. Children express communicative intent through a variety of gestures, facial expressions, and vocalizations. The growth in both oral and/or sign language development should be consistent with the developmental expectations for the child's age and cognitive abilities. Language development should include acquisition of phonologic (for spoken language), visual/spatial/motor (for signed language), morphologic, semantic, syntactic, and pragmatic skills. Communication can be facilitated through:

- a. Teaching parent(s)/caregiver(s) to respond to these expressed messages appropriately. This will help the child develop an effective communication system. Topics covered should include prelinguistic (selective attention and turn taking) development.
- b. Providing parent(s)/caregiver(s) with information specific to language development and with family-involved activities that facilitate language. As parent(s)/caregiver(s) learn about how communication develops, how to foster and stimulate effective caregiver-child interactions, and how to monitor and evaluate their child's communication they will reach a decision regarding communication methodology that is appropriate for their child and the entire family.

2. Auditory Skills Development

Young children who are deaf or hard of hearing need the opportunity to learn to use their amplified residual hearing or a cochlear implant to gain meaning from the world of sound. The auditory program should educate parent(s)/caregiver(s) and children on the development of the hierarchy of listening skills:

- a. Detection: The process of determining whether sound is present or absent.
- b. Discrimination: The process of perceiving the differences between sounds, especially speech sounds.
- c. Identification: The process of learning the labels or names for what has been heard.
- d. Comprehension: The process of understanding the meaning of acoustic messages.

3. Hearing Aid Program

Parent(s)/Caregiver(s) need to learn how the hearing aids work, how to care for them, and how to operate them. Parent(s)/Caregiver(s) also need information on related topics, such as understanding the degree and nature of their child's hearing loss, the importance of well functioning hearing aids for spoken language development, and how speech is perceived. They also need information on assistive technology, including but not limited to: FM listening devices, tactile aids, t-coils, captioning, alerting devices, and cochlear implants. In supplying information to families, it is

important for professionals to prioritize information presentation in light of the vast array of new information families receive after the initial identification of hearing loss in their child.

4. Parent(s)/Caregiver(s) Support

Parent(s)/Caregiver(s) are the best models for their children. A very important role of the early interventionist is to offer parent(s)/caregiver(s) guidance and resources to enable them to develop the skills needed to provide their child with an effective communication system.

Interventionists are encouraged to be aware of the uniqueness of each family's dynamics and the impact that a child with a hearing loss has on the dynamics. As stated earlier, parent(s)/caregiver(s) should be given unbiased information on each communication option (American Sign Language, Auditory/Oral, Auditory/Verbal, Cued Speech, and Manually Coded English). After parent(s)/caregiver(s) decide on a communication approach, they should be encouraged to learn as much as they can about that approach and use it regularly in communication at home. The communication approach selected should be reevaluated if the child is not developing communication at the expected rate.

a. Ongoing information

Parent(s)/Caregiver(s) should be provided with ongoing information and experiences, as needed, in the following areas:

- 1) Communication choices, in an unbiased manner
- 2) Opportunities to meet older children or adults, with varying degrees of hearing loss, who communicate using spoken language
- 3) Opportunities to meet older children or adults who communicate through the use of sign language
- 4) How to access educational services
- 5) How to access public or private services for audiological management, hearing aids and other assistive devices, speech therapy, and/or sign language tutoring/classes
- 6) Agencies that may provide financial assistance
- 7) Special education laws and parents'/caregivers' rights
- 8) Community support systems and programs (e.g., counseling services, social services, and infant mental health services)

These resources can be found in the Handbook, *Services For Children Who Are Deaf or Hard of Hearing: A Guide to Resources for Families and Providers*, which can be obtained, free of charge, by calling the MDCH/EHDI Program at (517) 335-9560.

D. Medical Intervention Coordination

Ongoing medical intervention is an important part of the overall early intervention plan for young children with hearing loss. It is important for the family to have a Medical Home for the medical management of the child and monitoring of

ongoing developmental milestones. The Medical Home should be involved in collaborating efforts related to family service coordination. The Medical Home can provide referrals related to specialty care (e.g., ophthalmology, speech pathology, audiology, etc.), can monitor the child for the presence of middle ear effusion so that hearing is not further compromised, and can counsel the family regarding the benefits of genetic evaluation (i.e., which may provide information on etiology of hearing and other related medical conditions). The Medical Home also plays an important role in reinforcing the importance of early intervention services and monitoring ongoing developmental progress.

E. Standards For Early Intervention Service Providers

1. Trained Personnel

It is critical to the success of early intervention programs to have trained personnel providing the intervention. Since newborn hearing screening can help to identify children with hearing impairment at a very young age, it provides an opportunity to prevent the severe language delay that occurs with later identification. In order to optimize the opportunity for communication development during these early months, the intervention services providers must have the knowledge and experience to: 1) respond to parents'/caregivers' questions, 2) provide them with information on hearing impairment and its effects, and 3) model the ways in which they can provide language stimulation during daily activities with their baby.

2. Knowledge and Skills of Service Providers

Standards for early intervention service providers for young children who are deaf/hard of hearing and their families have been reported in the "Early Intervention Protocol" document published by the State of Colorado. This list provides a comprehensive guide for knowledge and skills of staff, but can also be used as an inclusive guide to the breadth of information which should be shared, over time, with the family of the newly identified child with hearing loss, as needed (See Attachment B: "Standards for Early Intervention Service Providers.....").

III. QUALITY INDICATORS FOR EARLY INTERVENTION PROGRAMS

Quality Indicators are quantifiable goals or targets by which an early intervention program can be monitored and evaluated. Indicators are used to evaluate progress and to point to needed next steps in achieving and maintaining a quality early intervention program (O'Donnell & Galinsky, 1998). All infants should be served as described below.

1. Infants with hearing loss should be enrolled in a family-centered early intervention program within 45 days of confirmation of hearing loss.
2. Families should receive intervention from professional personnel who are knowledgeable about the communication needs of infants with hearing loss.
3. Infants with hearing loss and no medical contraindication should begin use of amplification when appropriate and agreed on by family within 1 month of confirmation of hearing loss.

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4. Infants with amplification should receive ongoing audiologic monitoring at intervals not to exceed 3 months.
5. The goal for all infants enrolled in early intervention programs is to achieve language milestones in the family's chosen communication mode similar to that for hearing peers of a comparable developmental age. Language growth should be monitored at periodic intervals (i.e. 6-month intervals) to assess progress.
6. Families should participate and express satisfaction with the intervention program.

IV. MONITORING SYSTEM FOR MICHIGAN

The monitoring system for reporting a child's entry into, and progress in, early intervention is an important part of the Michigan Early Hearing Detection and Intervention System. The *Early On*® Michigan reporting system, already in place, should assist in notifying the MDCH/EHDI Program (FAX: (517) 335-8036) of a child's enrollment into early intervention services as needed, with consent of the parent(s)/caregiver(s).