SERVICE GUIDELINES:

FOR YOUNG CHILDREN WHO ARE DEAF OR HARD OF HEARING

(Includes Deaf-Blind Guidelines)

Guidelines for Child and Family Connections Staff

Illinois Early Intervention

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TABLE OF CONTENTS

PREFACE

Children who are deaf or hard of hearing must have early intervention services available to them from the earliest age possible. These children and their families would benefit from an understanding of their deaf culture and the unique needs a hearing loss presents.

The purpose of this document is to help address what constitutes appropriate early identification and intervention for youngsters who are deaf or hard of hearing. It is intended for use by Child and Family Connections staff as they find children in need of early intervention services and develop, with the family, an Individualized Family Services Plan (IFSP) appropriate for the family.

Each year, about 500 children are born in Illinois with congenital hearing loss. The prevalence of significant hearing loss is 3/1000 (Karl White, PhD, National Center for Hearing Assessment and Management, Utah State University). Hearing loss directly affects a child's language, communication development and ultimate academic achievement. Due to the unique nature of hearing loss, children who are deaf or hard of hearing have specialized needs related mainly to receptive and expressive communication. Special attention must be given to these needs to ensure that these children will reach their full potential. The ages of birth through three are critical for children who have hearing loss because this is the age when children are acquiring language and developing communication skills. Children need access to communication and language beginning at birth. Without early intervention, delays may occur which may never be remediated.

Recent studies have shown that infants with hearing loss can have normal language skills at three years of age if they are identified, provided with appropriate amplification, and receive appropriate early intervention services from providers trained in service delivery for children who are deaf or hard of hearing before six months of age (Christy Yoshinaga-Itano, Marion Downs Center on Deafness, Colorado). If they are not identified until twelve months of age, the language skills develop much slower. For example, a forty month old child with hearing loss identified at twelve months of age may only have the language skills of a twenty-six month old (a fourteen month delay). Early identification is critical. When there is identification and appropriate intervention before six months of age, there is a tremendous savings to the educational system and an improved quality of life for the children and their families.

The Illinois Hearing Screening for Newborns Act mandates that all hospitals performing deliveries conduct hearing screening of all newborn infants prior to discharge. This law went into effect December 31, 2002. Hospitals are further required to report information about each child with a failed hearing screening result to the Illinois Department of Public Health. IDPH generates letters to parents/guardians and the child's physician regarding the need for further hearing testing. This testing should be performed by a licensed audiologist and take place as soon as possible after the baby does not pass the newborn hearing screening. IDPH will track these infants to assure follow-up testing has taken place and that hearing loss has either been ruled out or confirmed. Upon confirmation of a hearing loss, IDPH makes referrals directly to DSCC and Early Intervention . In cases where assistance, financial or otherwise, is required for an infant to receive a diagnostic evaluation, IDPH calls on the resources of local health departments, DSCC, and Hearing and Vision Connections.

Families who need assistance paying for diagnostic audiological testing for newborns should be referred directly to a DSCC audiologist approved to do newborn hearing testing. Call the local DSCC Regional Office to find out who the DSCC audiologists are that are approved to do newborn diagnostic hearing testing.

EARLY IDENTIFICATION

HEARING SCREENING

It is critical that young children who are deaf or hard of hearing be identified as soon as possible so that appropriate support, including Early Intervention services can begin.

All children referred to the Child and Family Connections (CFC) for eligibility determination must receive a screening of both hearing and vision.

Essentially, all Illinois children have had newborn hearing screening at birth. In cases where screening was not passed, as part of Universal Newborn Hearing Screening, children may also have had an audiological evaluation prior to referral to the CFC.

For children who have not had Universal Newborn Hearing Screening and have been referred to a Child And Family Connection agency for an evaluation, it is suggested that the parents of these children be presented with the option to have an audiological examination as a part of the Early Intervention evaluation process. It is also suggested that evidence of an objective age appropriate hearing screening (OAE or AABR), be current within six months prior to the Early Intervention referral.

It is important to coordinate EI audiological evaluation activities with other state agencies who serve the same population. For example, the Division of Specialized Care for Children (DSCC) provides diagnostic audiological services for children suspected of having hearing loss or who have failed a hearing screening, at no cost to the family. The type of screening performed is determined, in part, by the developmental age of the child.

For children who have evidence of a failed hearing screening whether upon CFC referral or at any time during the provision of EI services, an audiological evaluation must be offered to the family as a part of the Early Intervention evaluation process. A referral should be made to DSCC for a diagnostic evaluation.

AUDITORY-SPEECH-LANGUAGE DEVELOPMENTAL MILESTONES

Not all children who are deaf or hard of hearing were born with a hearing loss. Some of the children acquired their hearing loss sometime after birth. Some children have fluctuating hearing losses most commonly due to ear infections. Their hearing may be normal at the time of the screening but may decrease at the time of an ear infection. Other children may have progressive sensorineural hearing losses. They are born with normal hearing but sometime thereafter, their hearing acuity begins to diminish. Still other children lose hearing as the result of illness or medication. Hearing screening only gives an indication of a child's hearing acuity at the time of the screening. A normal hearing screening does not mean the child's hearing will always stay normal. It is important, therefore, to be familiar with developmental milestones pertinent to normal speech and hearing.

Some children may have a unilateral hearing loss, meaning they have a hearing loss in only one ear. These children may be at risk for delay in speech, language and communication. Children with a unilateral hearing loss may be eligible for Early Intervention services. Knowing the auditory, speech and language milestones of children without disabilities will be helpful in the identification and evaluation process.

See Appendix : Auditory-Speech-Language Developmental Milestones Chart

DIAGNOSTIC AUDIOLOGICAL EVALUATION

If the child has evidence of failed hearing screening, an audiological evaluation must be offered as a part of the Early Intervention evaluation process. The Illinois Newborn Screening Program will notify the CFC of all infants who have a confirmed hearing loss. Upon this notification or the identification of a child with a confirmed hearing loss, the service coordinator should complete and submit to IDPH a Child and Family Connections, Consent for Release of Information, Children with Identified Hearing Loss form, which can be found in the Appendix. This diagnostic audiological evaluation should be within one month of hospital discharge. The Service Coordinator should determine whether or not the failed hearing screening is a result of Universal Newborn Hearing Screening or not. They will complete a form to send to IDPH at the time of initial enrollment in the Early Intervention program.

NEWBORN HEARING DIAGNOSTIC EVALUATION

The procedure for hearing loss diagnostics from DSCC is different for newborns who fail the Universal Newborn Hearing Screening in the hospital than for infants and toddlers who have suspected hearing loss later in life. For newborns who failed the hospital newborn hearing screening, a referral is made directly to a DSCC approved audiologist who has the equipment and expertise to do newborn hearing diagnostics. A list of these audiologists can be obtained by contacting a local DSCC office. A DSCC application is not required first. The audiologist tests the child, then bills DSCC retroactively.

DSCC DIAGNOSTIC EVALUATION FOR OLDER CHILDREN

For children suspected of having a hearing loss later in life, or when unrelated to newborn hearing screening done at birth, refer to DSCC for an application. DSCC will arrange the audiological evaluation. The family does not have to be financially eligible, but the evaluation does have to be arranged by DSCC. If a hearing loss is confirmed, DSCC will determine financial eligibility and follow up with payment for hearing aids, make necessary referrals, and provide care coordination. To accelerate the DSCC application process, applications can be faxed out rather than mailed. Service Coordinators can also download the DSCC application from www.uic.edu/hsc/dscc as another way to accelerate the process. Parents should be assisted in completing and returning the application immediately. Speedy return of the application will help to ensure that the application process is completed in a timely manner. Otherwise, it may be difficult to keep the 45 day time line for IFSP development with a completed diagnostic evaluation available.

EVALUATION AND ELIGIBILITY

Once the reports from the audiological screening and diagnostic audiological evaluation(s) have been received, eligibility can be determined for Early Intervention services that might be needed as the result of a hearing loss. A child may be able to receive both EI and DSCC services related to the hearing loss.

It is recognized that hearing loss, is a condition which has a high probability of developmental delay without Early Intervention services. Although unilateral hearing loss is not included in the CFC's Procedure Manuals list of eligible diagnoses, studies tell us that children with a unilateral hearing loss can experience a delay in communication and language, experience progression to bilateral hearing loss, or be identified later as having had a bilateral loss all along.

Children are eligible for Early Intervention services if they are experiencing a developmental delay (30% or greater) in one of more of the following areas of childhood development: cognitive; physical, including vision and hearing; language, speech and communication; social-emotional; or adaptive self-help skills. The eligible level of delay must have been either measured by Department-approved diagnostic instruments and standard procedures; or confirmed through informed clinical judgment of the multidisciplinary team if the child is unable to be appropriately and accurately tested by the standardized measures available. Activities used to determine clinical judgment include observation and parent report.

OR

The child has a physical or mental condition which typically results in developmental delay. EI eligible diagnoses (with ICD 9 code) as follows: sensorineural hearing impairment, bilateral <40 dBL (389.10) If a child has a medical condition not approved by the Department as being an eligible condition, eligibility can be determined by using a medical diagnosis confirmed by a qualified family physician, pediatrician or pediatric sub-specialist as a medical condition with a relatively well-known expectancy for developmental outcomes within varying ranges of developmental disabilities.

OR

The child is identified at risk of substantial developmental delay, according to informed clinical judgment which means the multidisciplinary team confirms that development of a Department determined eligible level of delay (30% or greater) is probable if Early Intervention services are not provided because the child is experiencing a defined set of risk conditions.

ASSESSMENT

When the CFC Service Coordinator becomes aware of a child that may have a hearing loss, they must offer the parents options for evaluation and assessment to determine current levels of functioning and eligibility for services. When possible, Developmental Therapists/Hearing (DT/H) should be contacted for both evaluations and for providing ongoing service. Service Coordinators will have information about Developmental Therapist/Hearing (DT/H) providers under Aural Rehabilitation. Other EI providers representing a variety of disciplines have also

received training specific to working with infants and toddlers who are deaf or hard of hearing. Hearing and Vision Connections (call 217-479-4319) can provide information about qualified EI providers who can evaluate, assess and/or serve children who are deaf or hard of hearing.

The means by which tests are administered to a child who is deaf or hard of hearing are extremely important. If the results are to be useful, the child's performance on the tests should be representative of observed behavior. Use of a play based assessment by team members with specific expertise in hearing loss and its impact on development, such as DT/H's, is one of the most effective methods. Consideration must be given to the child's primary communication system, age, hearing loss and use of amplification.

Although Early Intervention can not pay for all needed services and devices, it is important to assess the child's total needs as they relate to hearing. Assessments, in addition to hearing testing, need to include assessment of cognition, communication, language, social emotional status, motor skills, vision, the use of hearing aids, cochlear implants, and assistive listening devices. These issues should be discussed with the parents. Examples of assistive listening devices include sound field systems. Children may also need exposure to assistive technology that utilizes print in addition to sound for transmitting messages, and lighting systems for personal home safety.

Examples of light systems include smoke and fire detectors with lights, phone lights, and doorbell lights. Service Coordinators will need to become familiar with what Early Intervention can and can not pay for related to hearing services and devices and alternative funding sources.

IFSP DEVELOPMENT

Upon conclusion of the assessment, an appropriate IFSP must be developed to meet the unique needs of a child who is deaf or hard of hearing. A DT/H provider should be included on the team developing this plan. If a DT/H is not available in the family's area, Hearing and Vision Connections may be contacted and included in the IFSP development. It is critical for Service Coordinators to clarify that a DT/H is a professional who is certified and has a degree in Deaf Education. A Developmental Therapist does not have these same credentials. DT/H's are able to present information on amplification options, communication options, and language development for children who are deaf or hard of hearing. Language Mentors / Deaf Mentors under Family Support are also options for families interested in receiving support services from a Deaf adult (see definition of Deaf Mentors and section on Deaf Mentors below).

The most common services required for a child who is deaf or hard of hearing are assistive technology, audiology, aural rehabilitation, counseling and home visits, disability-specific special instruction, speech pathology and family support, including deaf mentoring. Children who have multiple impairments may need additional Early Intervention services.

If the results of the diagnostic audiological evaluation are not available by the time the IFSP team convenes by 45 days, document within the IFSP that the hearing loss diagnostic process is underway. Reconvene the IFSP team when the evaluation is available to determine appropriate services and interventions.

Children who have an IFSP, who have hearing loss as a primary or secondary diagnosis, must be reported to Illinois Department of Public Health. The service coordinator should complete and submit to IDPH a Child and Family Connections, Consent for Release of Information, Children with Identified Hearing Loss form, which can be found in the Appendix. The purpose of this form is to let IDPH know if the child has an IFSP.

DEAF MENTORS

A support service in Illinois Early Intervention is Deaf Mentors, or Language Mentors for the Deaf. Deaf Mentors are deaf or hard of hearing adults who are trained and enrolled as providers in Early Intervention. These adults are available to go into the homes of children who are deaf or hard of hearing on a regular basis to share their language, culture and personal experience. Deaf Mentors are able to provide communication modeling, personal experiences, and connections to the Deaf Community.

Deaf Mentors are recruited, selected and trained by Hearing and Vision Connections. To link a family with a Deaf Mentor in their geographic area who shares their chosen mode of communication, contact Hearing and Vision Connections at (217) 479-4319.

TRANSITION

As with all children in Early Intervention, transition activities begin no later than six months prior to the child's third birthday. Service Coordinator's should ensure that the appropriate Local Education Agency is notified and involved in transition planning and activities. You may want to be aware that many School Districts have an Educational Supervisor for Programs for Children Who Are Deaf or Hard or Hearing. These Supervisors are a part of school districts throughout the state, and can assist in coordinating appropriate services for school age children.

FAMILY SUPPORT

Children who are deaf or hard of hearing present unique challenges to their families. The vast majority of children who are deaf or hard of hearing are born into families with hearing parents. No two families require the same kinds of support. Neither do the child's needs remain the same over time. Each age presents new challenges.

Family support is as important as the child's intervention needs. Parents consistently report that their need for support was most significant during the time their child was first identified. Ongoing parent-to-parent dialogue is a highly desirable and effective support.

Early Intervention dollars can not pay for all of the services that a child with a hearing loss may need, but it is important to consider and explore all needs and resources with the parents. The following services are available from DT/H and/or Deaf Mentors:

- Providing information about hearing aids.
- Providing information about cochlear implants and other amplification options.
- Providing information about educational options.
- Providing information about communication philosophies/options.
- Providing opportunities for parents to meet with other parents of children who are deaf or hard of hearing.
- Providing opportunities for parents to meet older children and adults who are deaf or hard of hearing.
- Providing information about parents' rights and responsibilities.
- Educating parents about assisting their children in developing new skills and becoming independent as appropriate for his or her developmental level.
- Providing opportunities for parents and extended family to learn a communication system.
- Providing resources for counseling and family support.
- Providing opportunities for socialization with other families of children who are deaf or hard of hearing.
- Modeling of communication techniques that are effective with children who are deaf or hard of hearing.
- Providing language mentors for the deaf to share their language (i.e. American Sign Language), culture, and knowledge about deafness.
- Providing information about deafness and communication.
- Provision of kits on loan free to families 1) Communi-Kit with information about all communication modes and hearing loss and 2) Sign Language Kits. These are available from Hearing and Vision Connections.

Another support for families of children who are deaf is the Institute for Parents of Preschool Children Who Are Deaf or Hard Of Hearing. It is a one-week-long educational program for parents of children under the age of five who are deaf. The Institute is held in June on the campus of the Illinois School for the Deaf. The Institute is an opportunity for parents to learn about deafness and to learn about their child's individual strengths and needs. It may be a first opportunity for some parents to meet other parents who have children who are deaf and to share common concerns and feelings. Experts in deafness come from all over the state to participate in the Institute. For further information, contact:

Illinois School for the Deaf
125 Webster
Jacksonville, IL 62650
phone: (217) 479-4255 (voice or TTY)
or
Division of Specialized Care for Children
call the Regional Office serving your area
1 (800) 322-3722.

For a list of DSCC Regional offices, visit the website at http://www.uic.edu/hsc/dscc/

DEAF-BLIND SERVICE GUIDELINES

Some children with a hearing loss also have a vision loss. When a child has both a vision and hearing loss to a certain degree, they are considered deaf-blind. The definition of deaf-blindness used by the Illinois State Board of Education is: a visual impairment of 20/70 or worse, best corrected in the better eye; a cortical visual impairment; or the child exhibits a significant discrepancy between the use of his/her vision and his/her cognitive ability. This

must be combined with a hearing loss of 26dB or greater, best aided in the better ear; a cortical hearing impairment; auditory processing deficit; or the child exhibits a significant discrepancy between the use of his/her hearing and his/her cognitive ability.

A child with both a vision and hearing loss faces a unique view of the world. For a child who can see and hear, the world extends as far as his/her eyes and ears can reach. A child who is deaf-blind has a world that is initially much narrower. When a child is profoundly deaf and totally blind, his/her experience of the world extends only as far as the fingertips can reach.

As indicated in the definition of deaf-blindness above, many children considered deaf-blind have enough vision to be able to move about in their environment and recognize people, see sign language at close distances and even perhaps read large print. Other children have enough hearing to recognize familiar sounds, understand some speech and/or develop speech themselves.

Below is a list of many of the possible (but not limited to) etiologies of deaf-blindness: Alport syndrome, AIDS, Asphyxia, CHARGE syndrome, CMV, Down syndrome, Duane syndrome, Encephalitis, Fetal Alcohol syndrome, Head injury/trauma, Herpes, Hydrocephaly, KID syndrome, Leber's syndrome, Marshall syndrome, Maternal drug abuse, Meningitis, Microcephaly, Norrie's Disease, Pierre-Robin syndrome, Rubella, Stickler syndrome, Stroke, Syphilis, Toxoplasmosis, Trisomy 13, and Usher syndrome.

It is strongly suggested that the hearing checklist and vision checklist included in the vision and hearing guidelines be utilized whenever one of the above etiologies are known about a child or if there are any concerns regarding a child's vision and hearing.

If it is suspected that a child may have both a hearing and vision loss, or it has been determined that he/she does have a hearing and vision loss, a deaf-blind specialist should be included in the assessment and ongoing support of services for children who are deaf-blind in addition to the DTV and DTH. A deaf-blind specialist from Project Reach – Illinois Deaf-Blind Program can be contacted at: phone (630) 790-2474, TTY (800) 771-1232, or email: prc@project-reach.org.

DEFINITIONS

ACOUSTICS: The qualities of a room, hall, auditorium, etc., that determine how well sounds can be heard.

AIDED AUDITORY THRESHOLD: The softest intensity that an individual wearing amplification (e.g., hearing aid) can hear a sound.

AMERICAN SIGN LANGUAGE/ ASL: One of the 5000+ natural languages that exist in the world. It is primarily known by members of the Deaf community in the United States. ASL is a complex, abstract language like all spoken languages. It is produced in a visual-spatial mode and has its own phonology, syntax, and morphology. ASL uses hand shapes, positions, movements, facial expressions and body movements to convey meaning. ASL has a rich history of literature and culture. ASL is a manual language that is distinct from spoken English (not based on English grammar/syntax). English, or Spanish, etc., is taught as a second language.

AMERICAN WITH DISABILITIES ACT (ADA): Signed into law on July 26, 1990, the ADA prohibits discrimination on the basis of disability in employment, programs and services provided by state and local governments, goods and services provided by private companies, and in commercial facilities.

AMPLIFICATION: The process of increasing the power of a signal (sound). In audiological reports, this term may refer to hearing aids, cochlear implants, and assistive listening devices.

ASSISTIVE LISTENING DEVICE: Specially designed electronic equipment for use by individuals who are deaf or hard of hearing. It amplifies speech and other sounds using a microphone, transmitter and receiver and channels sound more directly to the person.

AUDIOGRAM: A graph on which the person's ability to hear is recorded. It shows the lowest intensity (loudness) at which the person responds to different frequencies (pitches).

AUDIOLOGIST: A person holding a masters or doctorate degree in audiology and who is licensed by the state of Illinois to provide audiological services.

AUDIOLOGY SERVICES: Services may include identification of children with auditory impairment, using at risk criteria and appropriate audiological screening techniques; determination of the range, nature and degree of hearing loss and communication functions by use of audiological evaluation procedures; referral for medical and other services necessary for the habilitation or rehabilitation of children with hearing loss; provision of

auditory training, aural rehabilitation, speech reading and listening device orientation and training, and other services; provision of services for prevention of hearing loss; and determination of the child's need for individual amplification, including selecting, fitting, and dispensing appropriate listening and vibrotactile devices, and evaluating the effectiveness of those devices.

AUDIOMETER: A calibrated electronic instrument for measuring hearing sensitivity.

AUDITORY AWARENESS: Detecting when a sound is present as demonstrated by a change in behavior that occurs in response to the sound.

AUDITORY BRAIN STEM RESPONSE/ ABR: Electrophysiological measurement of the brainstem's response to acoustic stimulation of the ear. This test is both a screening and diagnostic tool. This test is often used with children because it can provide information about hearing levels in each ear without requiring a behavioral response. The test is performed while the child is sleeping (natural or sedated sleep depending on the age of the child). Other acronyms for this test are BAER, BEAR, and BSER.
This test involves placing measuring electrodes on the child's head and recording brain wave activity when sounds are presented. The loudness level of the stimulus is varied in order to determine the softest level at which the auditory nerve and brainstem are responding to sound. With diagnostic ABR, threshold is obtained in each ear. Since ABR is sensitive to auditory and neurological status, the absence of a response by ABR does not necessarily indicate an absence of usable hearing. Amplification and further behavioral audiological evaluations are necessary to determine how much usable hearing a child has.

AUTOMATED AUDITORY BRAINSTEM RESPONSE/ AABR: An objective electrophysiological measurement of the brainstem's response to acoustic stimulation of the ear, obtained with equipment which automatically provides a pass/refer outcome. This test is a screening tool provided in some hospitals in Illinois. The equipment has software which analyzes the infant's response and compares it to normative data.

AUDITORY-AURAL: Method that teaches a child to make maximum use of his/her remaining hearing through amplification (hearing aids, cochlear implant, FM system). This method also stresses the use of speech reading to aid the child's communication. Use of any form of manual communication (sign language) is not encouraged although natural gestures may be supported.

AUDITORY DESCRIMINATION: Ability to perceive differences in unlike sounds which may affect a person's ability to understand speech and environmental sounds.

AUDITORY NEUROPATHY: A term presently used to describe a condition, found in some individuals, in which the patient exhibits auditory characteristics consistent with normal peripheral function but abnormal neural function. The combined use of otoacoustic emissions (OAEs) with ABR is essential to make this diagnosis. Note: Hyperbilirubinemia is a high risk factor for auditory neuropathy.

AUDITORY SKILL DEVELOPMENT (auditory training): The use of special techniques and equipment to assist children who are deaf or hard of hearing with the identification and understanding of sound.

AUDITORY VERBAL PHILOSOPHY: Emphasizes the earliest use of the most appropriate type of high-tech amplification to facilitate the acquisition and use of spoken language. This philosophy uses methods which focus on developing the ability to listen and communicate with spoken language. This philosophy teaches a child to develop listening skills through one-on-one therapy that focuses attention on use of remaining hearing (with the aid of amplification). Since this method strives to make the most of a child's listening abilities, no manual communication is used and the child is discouraged from relying on visual cues.

AURAL (RE) HABILITATION: Specialized services for children who are deaf or hard of hearing which helps them develop language and communication skills including speech reading, listening and speaking.

BABBLING: Using consonant-vowel syllable repetitions in self-initiated vocal play, e.g., "ma-ma-ma".

BEHAVIORAL GAIN: The difference between aided and unaided thresholds as determined by audiological tests.

BEHAVIORAL OBSERVATION AUDIOMETRY: This testing is performed in a sound treated booth. An infant's detection or awareness of speech and warble tones or narrow band noise is obtained in the soundfield and/or under earphones. Behavioral responses such as quieting, cessation of sucking, eye blink, eye widening and startling, are observed.

BILATERAL HEARING LOSS: A hearing loss in both ears.

BONE CONDUCTION HEARING AID: A hearing aid in which the amplified signal directly stimulates the inner ear via a bone vibrator placed on the mastoid bone behind the ear. This type of hearing aid is typically used for individuals with atresia or chronic ear drainage.

CHILD AND FAMILY CONNECTION CFC: The Early Intervention Program is a statewide program for all the evaluation and assessment of infants and toddlers under three years of age and the provision of services for those who have a disability, a 30% delay in development in any area, or who are at risk of developmental delays. Children and families access Early Intervention services through one of the CFC offices. CFC responsibilities include child find activities, intake of families, coordination of evaluation and eligibility determinations for children, oversight of the development of individualized service plans, and ongoing service coordination, including transition to services after three years of age. Offices may be located by using the web site for the Department Of Human Services ; www.dhs.state.il.us/ei.

COCHLEAR IMPLANT: An auditory prosthesis that uses electrical current to directly stimulate the auditory system which the brain interprets as sound. It does not restore normal hearing. It is intended for the auditory and speech habilitation or rehabilitation of individuals who are deaf. The implant consists of a surgically placed internal receiver and an externally worn microphone, signal processor, and transmitter.

COOING: sounds an infant produces as he/she exhales that are usually vowel-like and can sound like gurgling.

CONDITIONED PLAY AUDIOMETRY: This test can be performed by a trained tester or an audiologist. Responses to speech or tones are obtained in each ear under ear phones. The

child responds by performing an action, such as placing a block in a bucket or raising a finger or hand when he or she hears the tone.

CONDUCTIVE HEARING LOSS: An interference with the transfer of sound through the external and/or middle ear on its way to the inner ear. This loss may be caused by middle ear fluid, ear infection, structural malformation, foreign objects, etc. A conductive hearing loss may be corrected and/or improved with medical and/or surgical treatment. Some conductive hearing loss may be permanent.

CONGENITAL HEARING LOSS: Hearing loss that is present from birth. It may or may not be inherited.

CUED SPEECH: A visual communication system of eight handshapes (cues) that represent different sounds of speech. These cues are used while talking to make the spoken language clearer through vision. This system allows the child to distinguish sounds that look the same on the lips.

DEAF: A hearing loss so severe or profound that the individual experiences difficulty in processing speech through hearing, with or without amplification.

DEAF MENTOR (also Language Mentor for the Deaf): Adults who are deaf or hard of hearing are trained by Hearing And Vision Connection before becoming enrolled as providers in the Early Intervention System. Mentors can make regular visits to young children who are deaf and hard of hearing and their families to provide a language model, and share cultural, and their personal knowledge on deafness.

DECIBEL (dB): A measurement of sound intensity (loudness). The larger the number, the louder the sound.

DEVELOPMENTAL THERAPIST / HEARING (DT/H): A credentialed Early Intervention provider with a special education teaching certificate for Deaf and Hard Of Hearing and who bills under Aural Rehabilitation EI service description. A DTH may provide developmental hearing services which are related to an infant's overall development as it is directly affected by the child's hearing loss. Developmental Therapy/Hearing services related to auditory functioning include aural (Re) Habilitation, oral (Re) Habilitation, sign language instruction, independent living skills training, use of assistive technology (such as hearing aids) and additional training necessary to activate communication using the family's chosen communication mode.

DIAGNOSTIC AUDIOLOGICAL EVALUATION: the physiologic and behavioral procedures required to evaluate and diagnose hearing status.

DIVISION OF SPECIALIZED CARE FOR CHILDREN / DSCC: University of Illinois at Chicago, Division of Specialized Care for Children is the Title V program in Illinois designated to assist eligible children with special health care needs, and their families. DSCC provides care coordination, information provision, and referral for any children with eligible medical conditions. DSCC also provides financial assistance for families who are financially eligible. Hearing loss and vision loss are two of the eligible conditions included in the DSCC program. DSCC can help families obtain hearing aids, cochlear implants, ENT (Ear Nose Throat) care, medications, educational services and other community resources which may be beneficial to families. DSCC can be contacted in Springfield at (217) 793-2350 or in Chicago at (312) 996-

6380. Regional Office information can be obtained from their website at http://www.uic.edu/hsc/dscc.

EARLY INTERVENTION PROGRAM – The Early Intervention (EI) Program is a statewide program of evaluation and assessment for infants and toddlers under three years of age and of services for those who have a disability, a 30 percent delay in development in any area, or are at risk of developmental delays. This program is federally funded, in part, through Part C of the federal *Individuals with Disabilities Education Act (IDEA).* Services are provided to assist eligible children to develop basic developmental skills. Parents provide most of the care needed to help their child develop, guided by the therapists who serve their children. Children and families access the EI system through one of 25 Child and Family Connections (CFC) offices, which are funded by the Department of Human Services. To identify the CFC office in your area, call 800/323-4769.

E.N.T.: An abbreviation used to refer to a physician (M.D.) whose practice is limited to disorders of the ears, nose and throat. E.N.T. is often used to refer to physicians practicing otology, otolaryngology or otorhinolaryngology. An ENT addresses the health and structure of the ear.

ENVIRONMENTAL SOUNDS: Sounds that occur in the person's surroundings. Usually does not include speech.

EVOKED OTOACOUSTIC EMISSIONS (OAE): This is a test that measures how well a child's cochlea, or inner ear works. This test is performed by an audiologist or a trained technician. It is used to screen infants at birth at some hospitals in Illinois. A soft rubber ear piece is placed in the baby's outer ear and makes a soft clicking sound. Healthy ears will "echo" the click sound back to a microphone inside the ear piece that is in the baby's ear. This test provides an objective measure of cochlear function. It does not assess neurological status. It is affected by fluid in the middle ear or debris in the ear canal. It is not a test of hearing per se but a test of cochlear function.

EXPRESSIVE LANGUAGE: Communication conveyed by spoken language, written language, sign language, fingerspelling and natural gestures. True expressive language is spontaneous, not imitated.

FEEDBACK: In hearing aids, feedback is "whistling or howling". This is created when the amplified sound from the hearing aid escapes from the ear canal through ear mold vents or slit leaks and is picked up by the microphone of the same hearing aid.

FINGERSPELLING: Spelling words using the manual alphabet.

FREQUENCY: The number of sound vibrations per second, also known as pitch. Most commonly written as Hz (Hertz). For example, the frequency of 1000 sound vibrations per second is written as 1000 Hz. The greater the number, the higher the pitch.

FUNCTIONAL GAIN: The difference (in dB) between aided and unaided responses to sound.

GAIN: The amount that a hearing aid amplifies sound. Gain is expressed in decibels.

HARD OF HEARING: A hearing loss which falls in the mild to moderately severe range and may prevent development of full awareness of environmental sounds and spoken language,

with or without a hearing aid. Normal language acquisition and learning achievement may be limited.

HEARING: Commonly defined as the perception of sound. One of the five senses of the body.

HEARING AGE: The number of months/years a child has worn amplification, and has demonstrated usable hearing in the speech range.

HEARING AID: A wearable instrument which amplifies sound intended to help a person with a hearing loss. Usually consisting of a microphone, amplifier and earphone. and powered by a low voltage battery. Hearing aids can be worn behind the ear, in the ear, and sometimes on the body. Hearing aids do not restore normal hearing, but can improve the wearer's ability to hear.

HEARING AND VISION CONNECTIONS/ HVC: A statewide Early Intervention training, resource, referral and technical assistance program for infants and toddlers who are deaf, hard of hearing, or visually impaired. Phone (217)479-4318 or (217)479-4319 or 1-877-731-8184.
Website http://morgan.k12.il.us/isd/hvc.

HERTZ (HZ); When testing hearing, Hz is used to indicate the frequency of a sound or pitch. The lower the number, the lower the pitch. The higher the number, the higher the pitch. A 250 Hz sound is a very low pitch, and an 8000 Hz sound is a very high pitch.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH/IDPH: State agency charged, through Hearing Screening for Newborns Act, with collecting information about each child with a positive hearing screening result and maintaining a registry of cases of positive hearing screening results, including information needed for the purpose of follow-up services.
Website: www.idph.state.il.us.

INTENSITY: The loudness of a sound, measured in decibels (dB). The larger the number, the louder the sound.

INTERPRETER: A specially trained and certified individual who facilitates communication between two languages. A sign language interpreter is licensed by the state of Illinois and either signs a spoken message to an individual who is deaf or hard of hearing or speaks a signed message. In Early Intervention, bilingual interpreters are enrolled but not credentialed. Procedures are available for enrollment through the Early Intervention system for individuals who are bilingual.

LOCALIZATION: Turning in the direction of or locating the sound source. Children with a unilateral hearing loss may have difficulty localizing sound.

MANUAL COMMUNICATION: Includes any form of manually coded English (MCE), American Sign Language (ASL), or a combination of ASL and MCE.

MILD HEARING LOSS: A hearing loss between 20 dB and 40 dB. Children with a mild loss may have difficulty hearing faint or distant speech. This may be especially so in a noisy situation. May benefit from a hearing aid.

MODERATE HEARING LOSS: Hearing loss between 41 dB and 55 dB. Children with a moderate loss may have difficulty understanding speech in most settings. May require a hearing aid and specialized EI services from an appropriate provider. Children with this degree of hearing loss automatically qualify for Illinois Early Intervention services.

MODERATELY SEVERE HEARING LOSS: Hearing loss between 56 dB and 70 dB. With hearing aids, speech may not be understood even if the sound is loud. Requires a hearing aid to help understand speech and specialized EI services from an appropriate provider. Children with this degree of hearing loss automatically qualify for Illinois Early Intervention services.

MONAURAL: Refers to only one ear.

NORMAL HEARING: Thresholds of hearing at 20 dB or less

ORALISM: A communication method which uses speech, speech reading, and listening with appropriate amplification.

OTITIS MEDIA: Inflammation or infection of the middle ear.

OTOLOGIST: A physician, (M.D.) whose practice is limited to the treatment of disorders of the ear. Also see E.N.T.

OTOLARYNGOLOGIST: A physician, (M.D.) whose practice is limited to the treatment of disorders of the ear and throat. Also see E.N.T.

OTORHINOLARYNGOLOGIST: A physician, (M.D.) whose practice is limited to treatment of disorders of the ears, nose and throat. Also see E.N.T.

PRESSURE EQUALIZING TUBES / PE TUBES: Tiny plastic tubes that are inserted in the eardrum. They are sometimes used to treat chronic otitis media. Also known as ventilation tubes.

PROFOUND HEARING LOSS: A hearing loss of 91dB or greater. Amplification, specialized services by an Early Intervention appropriate provider, and communication systems are often necessary. Children with this degree of hearing loss automatically qualify for Early Intervention.

PURE TONE: A single frequency sound without accompanying overtones or other sounds.

PURE TONE TESTING: Hearing testing done to establish an individual's threshold (lowest level) of hearing at individual frequencies.

REAL EAR TESTING: A test which measures how much amplified sound from a hearing aid is being transmitted at the child's eardrum.

RECEPTIVE LANGUAGE: Communication received through spoken language, written language, sign language, fingerspelling and natural gestures.

RESIDUAL HEARING: The amount of unaided, usable hearing.

SCREENING: The completion of one or more objective, physiologic, electronic tests administered to determine the need for further diagnostic testing by an audiologist and physician. Such screening shall be performed by individuals who have been appropriately trained in the procedure and instrumentation used.

SENSORINEURAL HEARING LOSS: An interference with the transfer of sound located in the inner ear and/or the auditory nerve. This type of hearing loss is permanent. The individual with this type of hearing loss may benefit from amplification.

SEVERE HEARING LOSS: A hearing loss between 71dB and 90dB. May require amplification and specialized Early Intervention services from an appropriate provider. Children with this degree of hearing loss automatically qualify for Early Intervention services.

SIGNED ENGLISH: Sign language and gestures are used to code English lexical items, morphology, syntax, and semantics.

SOUND FIELD SYSTEM: An amplification system the can be used in classrooms, or in places where background noise and distance from the speaker might hinder a child's ability to hear.

SPEECH DISCRIMINATION: Ability to differentiate speech sounds.

SPEECH RANGE: The frequencies between 500 and 2000 Hz. Most of the energy contained in human speech is in this frequency range. The frequencies usually tested are 250, 500, 1000, 2000, 4000, and 8000 Hz.

SPEECHREADING: The process by which a person follows a conversation by watching a speaker's lip movements, understanding the context of the situation, and by predicting what is being said by the topic of the conversation. Also called lipreading.

SPEECH RECOGNITION THRESHOLD / SRT: The lowest level, in decibels, at which a person can detect and understand speech 50% of the time. The speech reception threshold is the softest level at which a person is able to understand two syllable words.

THRESHOLD OF HEARING: The lowest intensity (quietest level) at which a person can hear a sound 50% of the time.

TOTAL COMMUNICATION/ TC: A philosophy which encompasses every mode of communication. Focuses on using the family's preferred modes of communication. It can include oral, auditory, speech reading, sign language, writing and/or gestures. This philosophy quickly became synonymous with the simultaneous method (i.e., the use of signing and speaking in English at the same time) although total communication is much more than signing and speaking at the same time.

TRANSLITERATION: The process of changing one form of an English message, either spoken English or signed English, into the other form i.e. English into sign langauge, etc.

TYMPANOMETRY: This test is used to determine how well the middle ear is functioning, for example, if there is fluid present, by showing how the middle ear system changes with variations of pressure in the external ear canal. This is not a test of hearing sensitivity.

UNIVERSAL NEWBORN HEARING SCREENING / UNHS: Screening of all newborns in the birthing hospital for potential hearing loss. UNHS provides objective measures which identify children who may be at risk for hearing loss. In Illinois, UNHS is a joint effort between the Department of Public Health, Department of Human Services, and Division of Specialized Care for Children.

UNILATERAL HEARING LOSS: A hearing loss occurring in one ear. A child with this hearing loss does not automatically qualify for Illinois Early Intervention services unless they also demonstrate an additional medical diagnosis of developmental delay or are determined eligible through clinical opinion.

VISUAL REINFORCED AUDIOMETRY: Behavioral, head turning responses for speech (speech awareness) and warble tones from 250 to 8000 Hz performed by an audiologist in a sound treated booth or under head phones. There are loud speakers on either side of the child and light and motion activated toys which are used as reinforcement after the child has turned his or her head toward the loud speaker in response to a sound. Responses are obtained for speech ("Hello- look here") and tones. Combines auditory and visual (generally animated, lighted toy) stimulation to eventually elicit a conditioned response to auditory stimulation in the absence of visual stimulation. Visual reinforcement is then provided following response to auditory stimulus.

VOCALIZATION: Sounds which a child produces either spontaneously or through imitation.

AUDITORY-SPEECH-LANGUAGE DEVELOPMENTAL MILSTONES

Chronological Age Of Child	Developmental Milestones
Birth to 3 Months	-Startles to loud, sudden noises within 3 feet -Quiets to familiar, friendly voice -Wakes when someone speaks or makes a noise nearby
3 Months to 6 Months	-Looks to see where sounds are coming from -Is frightened by angry or loud voices -Smiles when spoken to -Likes to play with toys or objects that make noise
6 Months to 9 Months	-Turns and looks at person speaking in a quiet voice -Waves when someone says "bye-bye" without using visual cues -Pauses or stops activity when someone talks about them -Responds to his/her name -Uses different babbling sounds (baba, dada, mama)
9 Months to 12 Months	-Can point or look at familiar objects or people when asked -Follows simple directions
12 Months to 18 Months	-Points to body parts when asked (e.g., hair, nose, mouth) -Will bring an object when asked -Responds to many household sounds consistently - Hears and identifies sounds - Uses 10 to 20 words
18 Months to 24 Months	-Responds to simple "yes-no" questions -Enjoys being read to and will point to pictures when asked -Begins to put two words together (e.g., my shoe, go bye bye, more juice) -Tells about his/her experience using true words and jargon
24 Months to 30 Months	-Identifies object according to size (big/little) -Follows two-part directions (Get your cup and give to Mom) -Knows a few rhymes; enjoys music -Uses 100 – 200 words -Uses simple sentences (e.g., go bye-bye, cookie all gone)
30 Months to 36 Months	-Understands uses of objects (show me the one that goes on your foot) -Understands the concept of one and is able to hand you one object on request -Responds to sounds out of sight -Uses sentences containing 4 to 5 words

CHILD AND FAMILY CONNECTIONS
CONSENT FOR RELEASE OF INFORMATION
CHILDREN WITH IDENTIFIED HEARING LOSS

NOTE: This form is only completed for children with an identified hearing loss and is completed at the time of initial enrollment in the Early Intervention program.

I/We _____ give my/our informed consent for:
Parent/Legal Guardian Name (s)

_____
Facility Name/Child & Family Connections

_____
Street Address/Post Office Box

_____ _____ _____
City/Town State Zip Code

to inform the Illinois Department of Public Health, Vision & Hearing Screening Program by transmission of this form that an Individualized Family Service Plan was completed on _____ for my child:
Date

_____ ___/___/___ _____
Child's Legal Name (First & Last) Date of Birth Other name child known as

_____ _____
Street Address/Post Office Box Hospital child born in

_____ _____ _____
City/Town State Zip Code

The Illinois Department of Public Health will use this information to confirm that my child has enrolled in the State of Illinois' Early Intervention program. The Illinois Department of Public Health will not further disclose this information without my prior written consent and will use it only for the preparation of management or statistical reports. This information is needed to evaluate the State of Illinois' Universal Newborn Hearing Screening Program.

This consent is valid for 90 days following the date of my signature on this form. I understand that my consent is voluntary and that I may withdraw this consent by written request to the CFC above at any time, except to the extent that it has already been acted upon. I understand that my refusal to consent to the disclosure of this information will have no effect on the delivery of Early Intervention services to my child; however will inhibit effective evaluation of the State's Newborn Hearing Screening Program.

I HAVE READ AND UNDERSTAND THE CONDITIONS OF THIS FORM.

_____ _____
Signature (Parent/Legal Guardian) Date

_____ _____
Witness Date

Notice to Receiving Agency/Person:

Under the provisions of the Illinois Mental Health and Developmental Disabilities Confidentiality Act, the Family Educational Rights and Privacy Act, 20 USC 1232g, and the Health Insurance Portability and Accountability Act of 1996, information collected hereunder may not be redisclosed unless the person who consented to this disclosure specifically consents to such redisclosure or the redisclosure is allowed by law.

Send Information to:

Administrator
IDPH - Vision and Hearing Screening Program
500 East Monroe, 1st Floor
Springfield, Illinois 62701
Phone: 217/782-4733
Fax: 217/557-5324

Appendix C: Acknowledgments:

This document was developed through revision of original document titled: Service Guidelines: For Young Children Who Are Deaf Or Hard Of Hearing

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