Indiana State Department of Health
Early Hearing Detection and Intervention Program

Hospital/Birthing Facility Policy Manual

for

Universal Newborn Hearing Screening (UNHS)

Indiana Early Hearing Detection and Intervention (EHDI) Program
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INDIANA UNHS/EHDI (Early Hearing Detection and Intervention)

Why UNHS (Universal Newborn Hearing Screening)

Hearing loss is one of the most common conditions present at birth, and can have long-lasting effects on a child's ability to develop speech and language if left undetected. Prior to universal newborn hearing screening (UNHS), the average age of identification of a child with hearing loss was 30 months. With UNHS, the age of identification has decreased to less than 6 months of age. Research has shown that earlier identification of hearing loss significantly improves speech and language outcomes for these children. Through the dedication and hard work of our birthing facilities and hospitals, we can continue to ensure that babies are identified with hearing loss at as early an age as possible.

Mission

It is the mission of the Indiana EHDI Program to:

- Screen all newborns with state-mandated physiologic screening prior to discharge;
- Monitor infants through the EHDI process;
- Provide surveillance on the incidence and prevalence of hearing loss in the state of Indiana;
- Promote public awareness and education about hearing loss.

Goals

- Screen all infants prior to discharge, preferably before ***one*** month of age;
- Complete an audiology diagnostic assessment on infants who do not pass before ***three*** months of age;
- Enroll all infants identified with permanent hearing loss in early intervention before ***six*** months of age;
- Ensure that every infant with a hearing loss has a Medical Home. According to the American Academy of Pediatrics (AAP), a medical home is an approach to providing comprehensive primary care that facilitates partnership between patients, physicians, and families. A medical home should include:
- **Patient- and family-centered partnership:** a trusting, collaborative, working partnership with families, respecting their diversity, and recognizing that they are the constant in a child's life.
- **Community-based system:** designed to promote the healthy development and well-being of children and their families.
- **Transitions:** of high-quality, developmentally appropriate, health care services that continue uninterrupted as the child moves from adolescence to adulthood.
- **Value:** appropriate financing to support and sustain medical homes that promote system-wide quality care with optimal health outcomes, family satisfaction, and cost efficiency.

Legal Mandate

- Indiana Code 16-41-17-2 states that "…every infant shall be given a physiologic hearing screening examination at the earliest feasible time for the detection of hearing loss."
- Under Public Law 91-1999, screening for hearing loss began on July 1, 2000.
- Birthing facilities and hospitals are required to report screening results and referral information to the Indiana State Department of Health (ISDH) each month.

What is the Indiana EHDI Program's Role? ("1-3-6")

The Indiana EHDI Program is responsible for providing resources to hospitals, birthing centers, audiologists, and primary care providers (PCPs) to assist in ensuring all infants born in Indiana receive a hearing screening by 1 month of age, are identified by 3 months of age, and are enrolled in early intervention by 6 months of age. We also manage all of the hearing screening and follow-up data, as well as provide family support. How do we do this?

- Our program is funded through several sources. The program Director is a state paid position. The rest of program is fully funded from two federal grants: one from the Centers for Disease Control and Prevention (CDC), and one from the Health Resources and Services Administration (HRSA).
- Our staff includes a full time audiology Director, Follow Up coordinator, seven regional audiology consultants, two parent consultants and an administrative assistant. In addition, we support the Guide by Your Side program through Indiana Hands and Voices. The Guide by Your Side program provides ongoing parent support after diagnosis for one year at no charge to the family.
- When a baby does not pass newborn hearing screening, the hospital enters that information within five days to the EHDI "EARS" database collection system and consequently, Indiana EHDI staff receives an alert.
- Letters are sent to parents and PCPs regarding the infant's hearing results and reminds them of the need for further audiology diagnostic testing.
- Parents of infants who did not pass receive a phone call from an Indiana EHDI Parent Consultant to answer questions and offer support in the process.
- Infants who did not pass the newborn hearing screening and do not have a documented diagnosis are followed by the program until one year of age to ensure a diagnosis is achieved.
- We communicate with audiologists, families and PCPs regarding the diagnostic status of infants.
- When an infant is identified as deaf or hard of hearing, a tool kit is sent to the parents and the PCP.
- Parents of infants identified as deaf or hard of hearing are contacted by the Guide By Your Side program. This program offers local parent-to-parent support to help guide the family into early intervention that reflects their choices and desires for their child for one year after diagnosis.

Note: References will be made throughout this document to several documents in the appendix. In addition, documents or more information may be obtained from your EHDI Regional Consultant, or the state EHDI office (see www.hearing.in.gov for forms and contact information).

HOSPITAL AND BIRTHING FACILITY RESPONSIBILITIES

Birthing facilities have the responsibility to make certain all staff providing the newborn hearing screening are trained and competent to provide services. All screeners should have an annual review.

Each birthing facility is assigned to a regional audiology consultant from EHDI. The regional audiologist's role is to monitor and support hospitals in their newborn hearing screening program management. Please see Appendix A for a list of regional audiology consultants.

Hearing Screening Equipment

- Two different screening methods are acceptable. Otoacoustic Emissions (OAEs) measure the sound waves generated in the inner ear (cochlea). Automated Auditory Brainstem Response (AABR) measures the response of the entire auditory system through the brainstem. Both tests are accurate and reliable when performed correctly. Each hospital selects a method based on resources, available personnel, cost, and the number of babies born.
- The Joint Committee on Infant Hearing (JCIH) recommends that all infants in the intensive care nursery (NICU) should be screened using AABR.
- Most AABR equipment protocols present stimuli at 35 dBnHL. Only an audiologist should determine if the presentation level should be changed.
- The hospital is responsible for ensuring that all audiological calibration needs are met for the screening equipment used. Certain equipment will require annual audiological calibration in order to function. **Calibration is not the same as biomedical engineering checks in hospital facilities.**

Screener Responsibilities and Screening Procedures

- Identify infants needing to be screened based on established hospital protocol. Factors to consider include time of birth, estimated discharge date/time, need for second screen prior to discharge, and infant's activity level (**for optimal results, it is recommended to screen babies at 12 -24 hours of age**).
- Identify staff who will complete hearing screenings and provide ongoing training on best practices for hearing screening procedures. See our website for the current Best Practice Guidelines (www.hearing.in.gov).
- Inform parents of the hearing screening and answer any questions.
- Identify if any risk factors for hearing loss are present (See Appendix B).
- Perform the hearing screening according to established protocols and procedures. Rescreen prior to discharge any infant who does not pass the initial screen in one or both ears. BOTH EARS MUST BE RESCREENED, EVEN IF ONLY ONE EAR PASSED THE INITIAL SCREENING. ***The screening should only be completed twice***. For the test to be considered a "pass", both ears must pass on the same screening attempt. ***Do not screen more than two times.***
- Provide parents with the hearing screening results verbally and on the back of the "The Who, What, and Why of Newborn Hearing Screening", (See Appendix C). The "Who,

What and Why of Newborn Hearing Screening can be ordered at no charge from EHDI. Please see Appendix D for the order form or www.hearing.in.gov.

- Provide results of all hearing screening results to staff member who is responsible for reporting hearing screening results to Indiana State Department of Health/ Early Hearing Detection and Intervention Program through our database collection system "EARS". This staff member is commonly referred to in EHDI as "the MSR" or *Monthly Summary Reporter*. The MSR is responsible for reporting any exceptions into EARS and for completing a monthly MSR report by the 15th of the next month. Any infant who does not pass the hearing screening must be reported to EHDI **within five days of the screening.**
- For any baby who does not pass the second screening, distribute the brochure, "What if My Baby Needs More Hearing Testing?" (brochure can be ordered from EHDI at no charge – see Appendix D for the order form.). Report any special cases to the on-site supervisor. If questions or problems persist, contact the EHDI Program directly at 317.233.1264.
- Document hearing screening results and any relevant risk factors for progressive or delayed onset hearing loss in the hospital's medical record, hearing screening log, and/or anywhere else indicated in the hospital's protocol. (See Appendix D for risk factors).
- Complete hearing screening results section on heelstick card.
- Follow established infection control procedures.
- Use appropriate baby-handling skills.
- Recognize problems with screening equipment. Troubleshoot and report unresolved problems to the on-site supervisor immediately (see Appendix E for "Effective Screening Tips").
- Recognize potential problems with the infant that may interfere with the screening.
- Monitor inventory of disposable supplies and report needs to program supervisor.

Tips for Maximizing Screening Results

Test while the baby is quiet, relaxed (preferably sleeping), well fed and comfortable. Swaddling the infant often helps. The baby should not be held by an adult during the screening.

If a second screen is necessary, wait a few hours. This can significantly reduce the referral rates. Always re-screen both ears.

Screening will be faster and more effective if you minimize noise and distraction before screening. Testing area should be quiet (avoid talking, ringing phones, running water, etc.).

Documentation into EARS by MSR/ REPORTING SCREENING

RESULTS TO EHDI/Indiana State Department of Health

Information from the EHDI Alert Response System (EARS) allows EHDI/ISDH to provide follow-up for all infants who did not pass the newborn hearing screening or "refers" for follow-up testing or who were not screened for any reason. The method of reporting this information to EHDI/ISDH is via the web-based application EARS.

- Hospitals should assign one employee as the point of contact for reporting newborn hearing screening results to EHDI via EARS. This contact is commonly referred to as the "MSR". The employee needs to complete an online training and be registered with the EHDI department and enrolled in the EARS system in order to send newborn hearing screening results to EHDI/ISDH. Information regarding how to obtain EARS access can be found at www.hearing.in.gov.
- Hospitals should assign one employee as a back-up MSR, in case the lead employee leaves the position, goes on extended leave, or is unable to complete the reporting for any other reason.
- Results of all newborn hearing screenings, attempts, and/or refusals must be documented in the hospital chart.
- The only legal reason to decline a hearing screening is by signing a religious waiver. A copy should be kept in the hospital chart and a copy faxed to EHDI for documentation. (EHDI fax number is 317-925-2888).
- The hearing screening results section of the heelstick card should be completed and sent to IU Lab.
- Reporting (see next section for specific procedures based on test results).
  - When using the EARS system, *daily* entry of screening results is encouraged because it facilitates timely follow-up and makes data entry less cumbersome at the end of the month (a parent consultant with the EHDI program contacts parents of infants who do not pass newborn hearing screening after the infant's information is entered into the system).
  - "Exceptions" are babies who did not pass, passed with risk factors or babies not screened. Exceptions are *required* to be entered into EARS **within 5 days of screening** (if infant is in well-baby nursery) or as close to discharge as possible (if infant is in NICU or is not screened).
  - If a baby does not pass the hearing screening and is referred for further diagnostic audiology testing, the MSR must enter into the comment section of EARS, the follow-up date and location of the diagnostic audiological evaluation. ***If a baby does not pass the hearing screening, the results must be reported in EARS within five days of the screening.***
  - If a baby has been adopted or placed in foster care, this should be noted clearly in the comment section of EARS, and the adoptive or foster parent's name and contact information should be documented.
  - Please provide the following information into the comment section of EARS in order to improve our follow up contact with families (primary language of home if not English, poor medical prognosis, if family is moving out of state).
  - *If the infant is in the NICU, be sure the final screening is completed just prior to discharge.*

- *Do not report (in EARS) hearing screening results for infants in the NICU until discharge is imminent. This is to ensure the infant is screened <u>after</u> any treatments that may adversely affect hearing, as well as to prevent EHDI/ISDH from contacting families of these infants (phone calls and letters) while the infant is still an inpatient.*
- A Monthly Summary Report (MSR) must be completed by the 15th of the next month (example: the MSR for infants born in February should be completed by March 15th). Hearing screening results are reported into the monthly summary report of the month the baby is born. In order to complete a Monthly Summary Report, data such as the total number of live births that month for that facility is required.
- Delays in reporting hearing screening results into EARS can result in delays in follow-up for infants and negatively impact the goal of "1-3-6" (the baby should be screened by ONE month, diagnosed by THREE months and intervention started by SIX months). This can have a significantly adverse effect on the baby's access to services and language development for these infants. Research has shown that early intervention greatly reduces the impact that hearing loss can have on an infant's development. ***An efficient hospital hearing screening program is the first line of defense against these adverse effects for infants identified as deaf or hard of hearing!***

Procedures for Specific Hearing Screening Results

If infant PASSES *the hearing* screening and has *NO RISK FACTORS for delayed onset or progressive hearing loss:*

- Inform parents of the results verbally and in writing through the "*Who, What, and Why of Newborn Hearing Screening"* form and provide a copy of the hearing and language milestones. (see Appendix C).
- Complete the newborn hearing section of the heelstick card.
- Document results of screening in the baby's chart, including date, result, and name of screener.
- Provide results to PCP.
- Do not report babies who pass hearing screening into EARS.

If infant *PASSES* the hearing screening, but *HAS RISK FACTORS for delayed onset or progressive hearing loss* (see Appendix F for details)

- Risk factors for delayed onset/progressive hearing loss that need to be reported in EARS and include:
    - Family history of permanent ***childhood*** hearing loss
    - Exposure to in-utero infection
    - Hyperbilirubinemia that required an exchange transfusion
    - Cranio-facial anomalies
- Inform parents and PCP of screening results on "Who, What and Why of Newborn Hearing Screening" and provide a copy of the hearing and language milestones.
- Diagnostic audiological testing should occur when the baby is 9 – 12 months of age or sooner if there are parental concerns.
- Explain to parents that a referral to EHDI and the PCP will be made for continued monitoring for late-onset or progressive hearing loss due to the presence of one or more risk factors.
- Inform PCP **if a risk factor other than the 4 mentioned above are present** so that the physician can monitor and refer for testing at 9-12 months of age. These may be documented on the discharge summary that goes to the child's PCP. These other risk factors are included in the "Who, What and Why of Newborn Hearing Screening" form and include:
    - > 5 days in special care/NICU
    - Genetic syndrome associated with hearing loss
    - Bacterial meningitis
    - Parent/caregiver concern
    - Received potentially ototoxic medication (e.g., gentamicin)
- Document the results of the screening in the chart, including date, result, name of screener, and referrals made.
- Enter the hearing screening results onto the heelstick card.
- Report these infants on the MSR through EARS as an exception (as code 12) and identify which of the four risk factors are present.

If infant *DOES NOT PASS* screening in either ear ("refers"):

- If the infant does not pass the initial screening, a second screening ON BOTH EARS must be completed prior to discharge**. Only complete the hearing screening two times.**
- If the infant passes the second screening, proceed as outlined in the section titled, "If Infant Passes Screening and Has No Risk Factors"
- To be considered a "pass," the infant must pass the screening **in both ears on the same test**.
- Give parents the completed hearing screening results (on the back of the "*Who, What, and Why"* form).
- Give parents a copy of the brochure, "What if Your Baby Needs More Hearing Tests?"
- Emphasize that a referral does not necessarily mean the infant has permanent hearing loss, but that further evaluation is needed.
- Explain to parents that their baby will be scheduled for an appointment for diagnostic audiology follow-up at a local audiology center (see Appendix G for a list of diagnostic audiology facilities in Indiana equipped to provide comprehensive audiology testing on infants).
- Schedule the follow-up appointment at the audiology facility prior to the baby's discharge from the hospital and provide the appointment date to the family verbally and in writing on the Hearing Screening Results (on the back of "*Who, What, and Why"* brochure).
- Document screening results and time and location for audiology diagnostic follow-up in infant's hospital chart, PCP and give it to the family.
- Enter this infant and screening results into the MSR in EARS as an exception (code 13) (within no more than 5 days) to alert ISDH/ EHDI staff of need for follow-up.
- Enter the appointment date, time and location of follow up diagnostic audiology testing in the comments section of EARS.
- Include in MSR comments section any information that will help ISDH when calling families
    - Location and date of follow-up testing
    - Primary language of the home if not English
    - Poor medical prognosis
    - Adoption or foster care (please identify adoptive or foster mother's information)
- Complete newborn hearing screening portion of the heelstick card.
- EHDI will contact the family and letters will be sent to the family and primary physician regarding the need for diagnostic follow up testing.

If infant *DOES NOT PASS* screening, and *HAS RISK FACTORS for delayed onset/progressive hearing loss:*

- Follow same procedures as listed in previous section (If Infant Does Not Pass Screening).
- Be sure and note in the infant's chart and discharge summary any known risk factors.
- If the infant has one of the 4 risk factors for delayed onset/progressive hearing loss monitored by ISDH, note that risk factor on the infant's EARS entry.

SPECIAL SITUATIONS

Transferred Babies

The birthing hospital transfers an infant to another facility without completing a hearing screening

A. Enter the baby into EARS as an exception with a code 2 for transfer out, choose the facility where the baby was transferred to and note in comments the facility where the baby was transferred to.
B. The receiving hospital enters the baby into EARS that same month as an exception with a code 10 for transfer in. They screen the baby and enter results into their MSR report.
C. For quality assurance measures, the birthing hospital must also enter the screening results into their report (even if screening was not done in their facility). Sometimes the birthing hospital has to contact the transfer facility to obtain the screening date and results and enter that information into their MSR report. (contact EHDI if specific hospital contact information is needed).
D. If the baby stays at the referral hospital for the next month, the birthing hospital (and current hospital) should enter code 4 (NICU) until the hearing screening data is entered. ***BIRTHING HOSPITAL SHOULD NOT CONTINUE TO ENTER CODE 2 EACH MONTH FOR TRANSFER OUT.***

If parents refuse the hearing screening:

- Explain that the hearing screening is mandated by state law.
- The only acceptable refusal is one based on religious objection.
- Provide family with written material on the importance of screening.
- Provide family with hearing and language developmental milestones so they can monitor the baby's speech and language development (see Appendix H)
- Have parents sign Religious Waiver form (see www.hearing.in.gov) and fax a copy to EHDI. (EHDI fax is 317-925-2888).
- Enter the baby as an exception in EARS (code 6).
- Document refusal of the screening in the chart.
- Inform the PCP of religious refusal.
- Ask the PCP for assistance in educating the family regarding the importance of screening.

If infant is not screened prior to hospital discharge for any reason other than religious refusal:

- Contact family and have them return for the screening as soon as possible; preferably before 1 month of age.
- Have a standard letter ready and mail to the infant's family and the infant's physician stating the importance of the screening and the need for the family to return to the hospital for screening.
- If the family does not return for the screening, despite every possible effort by the

hospital, the baby should be entered into EARS with the appropriate exception (code 5 for Unauthorized Refusal, code 7 for Equipment Failure and code 3 for Hospital Error).

- Have a back-up plan in place for equipment failure, to ensure that infants are screened promptly.

COMMUNICATING RESULTS TO PARENTS

- Follow your hospital's policies regarding who discusses the hearing screening results with the family.
- Parents need to be informed of results verbally and in writing prior to discharge.
- For infants who pass, encourage parents to monitor hearing and language developmental milestones and contact their PCP if concerns arise.
- For infants who do not pass, give parents the brochure "What if Your Baby Needs More Hearing Tests?" and notify them of the follow up testing appointment information and details such as date and time and address/phone of facility.

Keep what you say simple:

- *Avoid using anxiety-provoking words like "failed" and "deaf".*
- *Reassure the family there are several reasons why the baby might not pass and that diagnostic testing will clarify how the infant is hearing. Follow-up should be completed in a timely manner, ideally before 3 months of age.*
- *Early detection of hearing loss is important for language development and minimizing the effects of hearing loss on the child's communication abilities.*
- *Inform parents that the hospital will schedule their baby for follow-up testing prior to the baby's discharge. If this is not possible due to the baby being discharged on an evening or weekend, give the parents the audiology clinic's contact information and send the baby's referral information directly to the audiology clinic.*

If you are concerned that a parent has more questions than you are comfortable addressing, provide them with the name of the Regional Audiology Consultant for your area, *or contact the EHDI Program directly at 317-233-1264*. Also, see Appendix J for Parents' Frequently Asked Questions.

The following are suggested scripts to use when communicating with families (See Appendix K for scripts in Spanish)

Informing Parents of the Hearing Screening

Congratulations on the birth of your baby! You have received information that we provide hearing screening to all babies born in this facility. We are going to screen your baby now.

Passing Result

Congratulations on the birth of your baby. We just completed the hearing screen; the results are a pass in both ears. Here is a brochure that talks about development of speech and language. It is always important to monitor the progress of your baby's development, especially their speech and language because your baby's hearing can change any time. If you are ever worried that your baby can't hear, talk to your baby's doctor right away and ask for a referral to an audiologist that is skilled at testing infants and young children.

Passing result with risk factors present for progressive or delayed onset hearing loss:

Congratulations on the birth of your baby. We just finished screening your baby's hearing. Your baby passed the screening in both ears today, but has a risk factor that could cause a hearing loss to develop over time. Here is a brochure that talks about development of speech and language. It is always important to check the progress of your baby's development, especially their speech and language because your baby's hearing can change any time. It is recommended that your baby be tested again by an audiologist who is skilled at testing infants and young children at about 9-12 months of age. If you are worried before this time that your baby can't hear, talk to your baby's doctor right away and ask for a referral to an audiologist immediately.

Did not Pass Hearing Screening/Refer:

Congratulations on the birth of your baby. We just finished screening your baby's hearing. Your baby did not pass the second hearing screen today. This does not necessarily mean that your baby has a permanent hearing loss, but without additional testing we can't be sure. The screening results will be provided to your baby's doctor and your child will be scheduled with an audiologist to complete follow-up testing. Please be sure you make or keep the appointment for further hearing testing.

Quality Assurance for effective hearing screenings

- Referral rates (number of babies who did not pass hearing screening) should be approximately 1.5 – 4% of the total number of babies screened.
- Ensure infants with risk factors are identified and reported into EARS system at EHDI.
- Strive for appropriate and timely referrals for further diagnostic testing.
- Enter babies as an exception into EARS who do not pass hearing screening within five days of the screening
- Follow hospital policies regarding infection control.
- Ensure timely documentation of results into EARS system at EHDI (Did not pass within five days, complete monthly reports by 15th of the following month)
- Monitor screener competency in administration of screening. The National Center for Hearing Assessment and Management (NCHAM) Newborn Screening Training Curriculum (at www.infanthearing.org) is an excellent resource. (See Appendix L for suggestions on training screening staff).
- Monitor hospital staff's competency in screening procedures and communicating results to parents.

Sensitivity to Deaf Culture

Hospital personnel need to be aware of parents who may have a perspective from a cultural model, meaning they do not view being deaf as a disability. Members of the Deaf community, which may include individuals with family members who are Deaf, may not be concerned about the hearing status of their infant. In these cases, hospital personnel should be respectful of their view. Families with this perspective are fully capable of providing the child with language (i.e., American Sign Language, or ASL), and may not see a need to pursue intervention.

However, state law mandates newborn hearing screening. If the baby does not pass the screening, inform the parents of the result and refer as you would for any other baby for follow-up testing.

What does EHDI/ISDH do after the hospital refers a baby for further testing?

- While in the nursery, a designated hospital representative will assist parents by scheduling an appointment for follow up diagnostic audiology evaluation (see list of audiology providers, Appendix G).
- EHDI parent consultants will call families within ten days after the screening results are entered into EARs to offer support and answer family questions about the screening or follow up diagnostic testing.
- Parents and the baby's PCP will also receive a letter from EHDI/ISDH regarding follow up procedures and appointments.
- Infants who pass, but have risk factors for progressive or delayed onset of hearing loss, will receive letters after birth and again in 7 months regarding the recommendation for follow-up hearing testing at 9-12 months of age.
- **Diagnostic audiological testing should be completed before the infant is 3 months of age.**
- Results of the diagnostic evaluation are reported by the audiologist to EHDI via EARS and to the PCP to the Indiana Birth Defect and Problem Registry.
- Infants identified as deaf or hard of hearing should have referrals to other medical professionals such as the pediatrician, an otolaryngologist (ENT), geneticist, and ophthalmologist and the early intervention program, First Steps.
- When a baby is identified as deaf or hard of hearing, Indiana EHDI refers the baby directly to the early intervention program, First Steps. In addition, a referral will be made to EHDI's Guide by Your Side program, which provides ongoing parent support (from other parents with deaf and hard of hearing children) for one year at no charge to families.

Early Hearing Detection and Intervention Program (EHDI)

Birthing Facility/Hospital Policy Manual for Universal Newborn Hearing Screening (UNHS)

APPENDICES

EARLY HEARING DETECTION AND INTERVENTION PROGRAM (EHDI)
Indiana State Department of Health
WWW.HEARING.IN.GOV

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Indiana State Department of Health
Early Hearing Detection and Intervention Program

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Indiana State Department of Health
Early Hearing Detection and Intervention Program

Risk Factors for Hearing Loss

Infants who pass the newborn hearing screening, but have one of the following risk factors for progressive or delayed onset hearing loss need to be reported to EHDI through EARS, and referred for diagnostic audiology testing at age 9-12 months. These include:

1. **A family history of permanent childhood hearing loss**
   - Family member(s) born with hearing loss in ear one or both ears
   - Family member(s) with a hearing loss (not caused by a medical condition such as ear infections) identified in childhood
   - Does not include family member(s) with known causes of hearing loss like rubella, meningitis, noise exposure, advanced age, etc.
2. **Exposure to in-utero infection (for this pregnancy)**
   - **Toxoplasmosis:** infected during or just before pregnancy, especially 1st trimester
   - **Group B Strep (GBS):** sick infant with positive GBS culture
   - **Syphilis:** infected during pregnancy, infant can be treated prior to delivery
   - **Rubella:** infected primarily during the 1st trimester
   - **Cytomegalovirus (CMV):** can be transmitted through placenta, birth canal, or post-natally through breast milk
   - **Herpes Simplex Virus (HSV):**

     Yes if: Infant is diagnosed with neonatal Herpes
     Active infection during vaginal delivery
     Active infection during cesarean delivery with premature membrane rupture

     No if: Mother had a cesarean delivery with no membrane rupture
     No active infection was present at birth
3. **Hyperbilirubinemia requiring exchange transfusion**
4. **Ear malformations/Craniofacial anomalies**
   - Infants who pass UNHS, but have some form of ear malformation or other craniofacial anomaly should be referred to the PCP as having a risk factor for hearing loss
   - Infants that are born with a congenital ear anomaly that does not allow for UNHS to be completed should be reported as "Did not pass" on the MSR and referred for diagnostic audiology evaluation

There are other risk indicators for hearing loss not mentioned above. These infants do not need to be reported to ISDH on the MSR, but should be referred to the PCP:

- Syndromes commonly associated with hearing loss (Down, Usher, Waardenburg, and Neurofibromatosis Type 2)
- NICU stay with any of the following, regardless of length of stay: ECMO, assisted ventilation, exposure to ototoxic medications such as aminoglycosides (gentamicin and tobramycin) or loop diuretics (furosemide, lasix). If uncertain about the risk, consult the neonatologist.
- Parental concern, bacterial meningitis, chemotherapy, or neurodegenerative disorder

The WHO, WHAT, and WHY of Newborn Hearing Screening

WHO?
Your baby, and every baby born in Indiana, should be screened for hearing loss BEFORE your baby leaves the hospital. If your baby is not born in a hospital, call the nearest hospital to set up a time to have the screening completed before your baby is one month old. If the hospital cannot complete the screening, call the Early Hearing Detection & Intervention (EHDI) Program at 317-233-1264. Individuals who are deaf or hard of hearing may access Relay Indiana to assist you with this call at 711, if needed.

Has your baby's hearing been screened?

WHAT?
A hearing screening checks to see if your baby's hearing is normal or if more testing is needed. The screening is quick, easy, and can be done while your baby sleeps or rests quietly. Two ways to screen hearing are OAE (Otoacoustic Emissions) and ABR (Auditory Brainstem Response). Both of these are safe and do not hurt your baby.

- ❒ The OAE is done by putting a tiny microphone in each of your baby's ears, and checking each ear's response to sounds.
- ❒ The ABR is done by putting three electrodes on your baby's head and checking the brain's response to sounds played in your baby's ears.

WHY?
If not found early, hearing loss can delay the normal growth of your baby's speech and language skills. About every 48 hours, a baby is born in Indiana with hearing loss. Hearing loss cannot be seen. Your baby cannot tell you if he or she cannot hear your voice and other important sounds.

If a hearing loss is present, there is hope and help available. Research shows babies born with hearing loss that is found early have a good chance of learning speech and language like other babies.

Questions?

Call the Early Hearing Detection & Intervention (EHDI) Program at 317-233-1264 or go online to www.hearing.in.gov. We can answer questions about your baby's hearing. Individuals who are deaf or hard of hearing may access Relay Indiana to assist you with a TDD call at 711 if needed.

Your primary care provider or your medical home can help. This is your baby's doctor or other medical provider who helps keep your child healthy and oversees your child's medical needs.

For general questions or concerns about your baby, call the MCH MOMS HELPLINE at 1-844-MCH-MOMS (844-624-6667). Or go online to http://www.MomsHelpLine.isdh.in.gov.

Indiana State
Department of Health
The Early Hearing Detection
& Intervention Program

Hearing Screening Results
The Early Hearing Detection & Intervention Program (EHDI)

Your baby, _____, born _____,
(name) (birthdate)

received a hearing screening on _____ at _____.
(date) (hospital/clinic)

Results of your baby's hearing screening (circle one):

Right Ear:	Pass	Did Not Pass	Pass with Risk Factor
Left Ear:	Pass	Did Not Pass	Pass with Risk Factor

Your baby's risk factor is:_____

❒ **Passed - Your baby likely has normal hearing.**

❒ **Did not pass - Your baby should get additional hearing testing, done by an audiologist, as soon as possible.**

❒ **Passed with risk factors - Your baby should have follow-up hearing testing done by an audiologist when he or she is 9 to 12 months old.**

Risk factors that can lead to hearing loss in childhood

Some babies who pass the newborn hearing screening may have risk factors that can lead to hearing loss during the first few years of life. Some risk factors for hearing loss include:

- A **family history of children with hearing loss**
- Your baby was exposed to **certain infections before birth**
- Your baby needed a **special procedure to treat jaundice**
  (yellow color to skin caused by high bilirubin, a protein normally produced by the body)
- Your baby's **head, face, or ears are shaped differently**
- Your baby has a **neurological** (involves the brain) **condition associated with hearing loss**
- Your baby had **meningitis** (an infection that affects the brain and spinal cord)
- Your baby had **a head injury** that required a hospital stay
- Your baby had certain **ototoxic medications** (medicines that can hurt hearing), such as cancer chemotherapy
- Your baby **stayed in the Neonatal Intensive Care Unit** (NICU) 5 or more days after birth

If you have questions about any of the risk factors listed above, or if you are worried about your child's hearing, talk to your child's doctor or contact the EHDI program at 317-233-1264.

Indiana State
Department of Health
The Early Hearing Detection
& Intervention Program

Las Respuestas de QUIÉN, QUÉ, Y PORQUÉ de la Prueba de Detección de Audición en Recién Nacidos

¿QUIÉN?

Su bebé, y cada uno de los bebés nacidos en Indiana, deben recibir la prueba temprana de pérdida de audición, ANTES que su bebé deje el hospital. Si su niño no nació en un hospital, llame al hospital más cercano para pedir una cita médica, para efectuar la prueba de detección temprana de la audición, antes de que su hijo tenga 1 mes. Si el hospital no puede completar la prueba, contacte al Programa de Detección Auditiva e Intervención Temprana (The Early Hearing Detection & Intervention (EHDI) Program) llamando al teléfono 317-233-1264. Las personas que tienen deficiencia auditiva o que son sordos pueden llamar al 711 que es el teléfono Relay de asistencia y ayuda de operadora en Indiana.

¿SU BEBÉ YA RECIBIÓ LA PRUEBA DE DETECCIÓN AUDITIVA?

¿QUÉ?

Una prueba de detección temprana de la audición sirve para ver y constatar si la audición de su bebé es normal, o si necesita de exámenes y estudios adicionales. La prueba es rápida, fácil, y puede ser efectuada mientras su niño duerme o descansa tranquilamente. Existen dos tipos de prueba de audición: EOA-Emisiones Otoacústicas (OAE en inglés) y PEATC/BERA-Potenciales Evocados Auditivos de Tallo/Tronco Cerebral (ABR en inglés). Ambos exámenes son seguros y no hacen daño o lastiman a su bebé.

- ❒ La prueba de EOA se efectúa colocando un pequeño micrófono en cada uno de los oídos de su bebé, para después ver la respuesta de cada oído a la emisión de los sonidos.
- ❒ El examen de PEATC/BERA se realiza colocando tres electrodos en la cabeza de su bebé para estudiar la reacción del cerebro a los sonidos emitidos en los oídos de su niño.

¿PORQUÉ?

Si no se detecta temprano, la pérdida de audición puede atrasar el desarrollo normal del habla y el lenguaje de su bebé. Aproximadamente cada 48 horas nace un bebé en Indiana con pérdida auditiva. La pérdida de la audición no se ve. Su hijo no puede saber si no está escuchando su voz y otros sonidos importantes.

Si existe una pérdida de audición, existe esperanza y ayuda disponible. Los estudios indican que los niños que nacen con pérdida auditiva, la cual fue detectada temprano, tienen una buena probabilidad de aprender el habla y el lenguaje como los niños normales.

¿Desea hacer preguntas?

Por favor comuníquese con el Programa de Detección Auditiva e Intervención Temprana (The Early Hearing Detection & Intervention (EHDI) Program) llamando al teléfono 317-233-1264 o en la página de Internet www.hearing.in.gov

Nosotros podemos responder a sus preguntas sobre el sentido de la audición de su bebé. Las personas que tienen deficiencia auditiva o que son sordos pueden llamar al 711 que es el teléfono Relay de asistencia TDD y ayuda de operadora en Indiana.

Su médico u hospital pueden ayudarlo. El pediatra de su hijo u otro profesional es el que le ayuda a mantener la salud de su bebé, y supervisa las necesidades médicas del mismo.

Para preguntas o inquietudes acerca de su bebé, llame a la Linea De Ayuda para MADRES de MCH al 1-844-MCH-MOMS (844-624-6667). O visite http://www.MomsHelpLine.isdh.in.gov

Indiana State
Department of Health
The Early Hearing Detection
& Intervention Program

RESULTADOS DE LA PRUEBA DE AUDICIÓN
Examen Auditivo
Programa de Detección Auditiva e Intervención Temprana (EHDI)

Su bebé, _____, Nacido _____,
(Nombre) (Fecha de nacimiento)

Recibió la prueba de audición en el día: _____ En el/la
(Fecha)

_____.
(Hospital/Clínica)

Oído Derecho:	**Superó**	**Referido**	**Pasó con Factor de Riesgo***
Oído Izquierdo:	**Superó**	**Referido**	**Pasó con Factor de Riesgo***

***El factor de riesgo de su bebé es:_____**

❒ **Superó (Aprobó) –Su niño/a posiblemente tiene audición normal.**

❒ **Referido- Su bebé debe recibir lo antes posible, una evaluación audiométrica adicional, efectuada por un audiólogo.**

❒ **Pasó con factor de riesgo- Su niño/a debe recibir exámenes de continuidad, efectuados por un audiólogo cuando él/ella tenga entre 9 a 12 meses de edad.**

***FACTORES DE RIESGO QUE PUEDEN LLEVAR A LA PÉRDIDA DE AUDICIÓN EN LA INFANCIA**

Algunos niños que pasaron o superaron la prueba de detección auditiva temprana de recién nacidos, pueden tener factores de riesgo que podrían conducir a la pérdida de la audición durante los primeros años de vida. Algunos de los factores de riesgo incluyen:

- **Una historia familiar de niños con pérdida auditiva**
- **Su bebé estuvo expuesto a ciertas infecciones antes del nacimiento**
- **Su niño precisó de un procedimiento especial para tratar la Ictericia (cuando la piel se vuelve de color amarillo, causado por una alta concentración de bilirrubina, la cual es una proteína normalmente producida por el cuerpo).**
- **Su niño tiene la cabeza, rostro, u oídos con forma diferente.**
- **Su niño tiene una condición neurológica (que envuelve al cerebro) que está asociada con la pérdida de audición.**
- **Su niño tuvo meningitis (una infección que afecta al cerebro y la espina o columna vertebral).**
- **Su niño tuvo un trauma cerebral que precisó de admisión al hospital.**
- **Su bebé tomó ciertos medicamentos llamados ototóxicos (que pueden herir o debilitar el sentido de la audición) como por ejemplo, quimioterapia para tratamiento del cáncer.**
- **Su niño estuvo en la Unidad Neonatal de Tratamiento Intensivo (UTIN) por cinco o más días después del nacimiento.**

Si usted desea formular preguntas sobre cualquiera de los factores de riesgo mencionados arriba, o está preocupado sobre la capacidad auditiva de su niño, hable con el médico de su bebé o comuníquese con el Programa de Detección Auditiva e Intervención Temprana (EHDI, en inglés) 317-233-1264 .

Indiana State
Department of Health
The Early Hearing Detection
& Intervention Program

REQUEST FOR ADMINISTRATIVE FORMS AND INFORMATION MATERIALS

State Form 53274 (R3 / 7-15)
Early Hearing Detection and Intervention – Universal Newborn Hearing Screening

Date: _____
(month, day, year)

Name of Hospital / Birthing Facility / Clinic _____

Address _____
(Number and Street)

_____
(City, State, and ZIP Code)

Name of Contact Person _____

Telephone Number _____

E-mail Address _____

Please send the requested items listed below to the address indicated above.

Stock Number	**Items**	**Unit of Measure**	**Number of Units**
	EHDI Family Connect Postcard - English	10/Package	
	EHDI Family Connect Postcard – Spanish	10/Package	
ISDH9368	EHDI Referral Brochure – English *"What if My Baby Needs More Testing"* (tri-fold)	100/Package	
ISDH9369	EHDI Referral Brochure – Spanish	100/Package	
ISDH9386	EHDI General Brochure – Spanish	100/Package	
ISDH9387	EHDI General Brochure – English *"Hearing Screening Results"* on front *"Who, What, Why"* on back (single page)	100/Package	

If you need assistance, please call 317-233-1264 or
E-mail or fax your request to:
grmedina@isdh.in.gov

Fax: 317-925-2888

ISDH Office Use

Order received _____ Order filled _____

Request number _____ Signature _____

Indiana State Department of Health
Early Hearing Detection and Intervention Program

Effective Screening Practices

****Do NOT screen repeatedly. Remember, your goal is not for every infant to pass. Infants with hearing loss may eventually and falsely pass with multiple screenings. Screening repeatedly is not cost-effective or time-efficient. Always rescreen both ears, but only screen two times!**

WHEN TO SCREEN

- 12-24 hours after birth
- In the early morning or during the night when there are fewer people wanting access to the infant
- If a second screen is needed, wait at least 4-6 hours after the initial screen, and complete the second screen as close to discharge as possible. Always rescreen both ears even if the initial screening resulted in a "did not pass" for one ear.

SCREENING ENVIRONMENT

- Keep conversation to a minimum
- Post signs to alert staff that a screening is taking place
- Screen away from noisy areas (if completing screening in the room with the family, ask extended family members, children, and visitors to step out of the room or sit quietly during the screening)
- Move away from noisy equipment or other babies

INSPECTION OF THE EAR

- Clear away any obvious debris
- Do not screen an ear if there is no ear, or only a partial ear, or no ear canal. These infants should be referred directly for a diagnostic audiology evaluation, and reported on the MSR as "did not pass". Do screen the other ear.

PREPARING INFANT FOR SCREENING

- Infant should be:
  - Sleeping, quiet or still, well-fed and comfortable
  - May be swaddled or sucking on a pacifier-do not have an adult hold the baby

OAE SCREENING TIPS

- Make sure the tip is the proper size, and is seated correctly on the probe
- The probe should be properly inserted into the ear, and should be stable without being held in place
- Environmental noise can significantly affect the results of OAE screening, so be sure and reduce environmental noise as much as possible

ABR SCREENING TIPS

- To improve impedance:
  - Place the electrode on the scrubbed area
  - Ensure the electrodes are secure and sticking
  - Apply electrode paste to reduce impedances if necessary
- To reduce myogenic noise that delays the screening result:
  - Ensure the infant has been fed, is swaddled and comfortable-do not have an adult hold the baby
  - Use a neck roll, and if the infant is sucking on a pacifier, remove it

Indiana State Department of Health
Early Hearing Detection and Intervention Program

www.hearing.in.gov **317-233-1264**

Indiana Early Hearing Detection and Intervention Program (EHDI)

RISK FACTORS FOR PROGRESSIVE HEARING LOSS

Indiana's UNHS Policy Manual identifies four risk factors for delayed onset hearing loss that require referral to Indiana State Department of Health. **Babies who pass the screening but have one of the following risk factors need to be referred for further hearing testing between 9 and 12 months of age.** Please find a list of pediatric audiology facilities on www.hearing.in.gov

Family History of Congenital Childhood Hearing Loss

- Family members born with hearing loss in one or both ears
- A family member with a hearing loss that was identified in childhood
- Hearing loss not caused by a medical condition like ear infections
- Does not include family members with known causes of hearing loss like rubella, meningitis, loud noise exposure &/or trauma

In-utero Infection (TORCH) for this pregnancy:

- **Toxoplasmosis –** infected during or just before pregnancy, especially 1st trimester
- **Group Beta Strep (GBS) –** sick infant with positive GBS culture
- **Syphilis –** infected during pregnancy, baby can be treated prior to delivery
- **Rubella –** infected primarily during the first trimester
- **Cytomegalovirus (CMV) –** can be transmitted through the placenta, birth canal or postnatally through breast milk
- **Herpes Simplex Virus (HSV) –**

  Yes if: Baby is diagnosed with neonatal herpes**,** Active infection during vaginal delivery
  Active infection during cesarean delivery with a premature membrane

  No if: Mother had a cesarean delivery with no membrane rupture, No active infection was present at birth

Hyperbilirubinemia (Jaundice): At levels exceeding indication for exchange transfusion

Ear Malformations/Cranio-facial Anomalies

- Babies who cannot be screened at the hospital due to no ear, partial ear or no ear canal opening should be immediately referred to an audiologist (Level1) and to their physician (PCP)
- Babies with craniofacial anomalies (including cleft lip and palate) who can be screened and pass should be referred for follow-up at 9-12 months of age
- Babies who have one normal appearing ear should be screened in that ear

Other at-risk factors for hearing loss in infants exist and would routinely be investigated by the infant's primary care physician. These factors include:

- Syndromes that are commonly associated with hearing loss (Down, Usher, Waardenburg and Neurofibromatosis Type 2)
- All infants with or without risk factors requiring neonatal intensive care for greater than 5 days, including any of the following: ECMO,* assisted ventilation, exposure to ototoxic medications (gentamycin and tobramycin) or loop diuretics (furosemide/lasix). In addition, regardless of length of stay: hyperbilirubinemia requiring exchange transfusion. (If uncertain about the risk, please check with the neonatologist)
- Any infant not passing two newborn hearing screenings
- Parental concern

Indiana State Department of Health
Early Hearing Detection and Intervention Program

www.hearing.in.gov 317-233-1264

Indiana Early Hearing Detection and Intervention Program

Gentamicin as a Risk Factor for Hearing Loss

Aminoglycosides can damage hair cells in the cochlea resulting in sensorineural hearing loss. ***Some babies with mitochondrial DNA mutations may be more susceptible to these effects***. Commonly used medications include: streptomycin, neomycin, kanamycin, amikacin, viomycin, vancomycin, gentamicin, and tobramycin.

Information to Consider:

1. The most commonly used aminoglycoside is gentamicin.

2. Predisposition to hearing loss from any aminoglycoside is determined by the susceptibility gene to aminoglycosides.

3. Because the toxicity is genetically related it should not be affected by how many days the baby receives the antibiotic. One single dose can cause hearing loss, depending on the dose level and weight of the baby.

4. It is too expensive to screen all babies for the presence of the gene and the turnaround time for results can take up to 2 weeks. Even if the gene is present, NICU babies needing antibiotics will be given an aminoglycoside.

5. Other unknown mutations may be present that cannot be identified by current technology. Babies that test negative to the genetic test may still be at risk.

6. Therefore, any baby that receives an aminoglycoside should be considered at-risk for subsequent hearing loss unless testing for the susceptibility gene is completed prior to birth and results are negative for at-risk mutations.

RECOMMENDED GUIDELINES:

All babies should be screened and reported as mandated by Indiana law.

If a screen or re-screen is ordered following administration of these drugs, it is best practice to wait 24 hours after the medication has been stopped. Birthing facilities need to determine their own protocols.

If a baby passes the hearing screening, provide parents with developmental milestones and encourage them to monitor their baby closely. If concerns develop, they should seek a referral from their physician for an audiologic diagnostic evaluation.

Best practices suggest that all babies in the NICU for more than 5 days and/or who have received gentamicin should be referred by their PCP for audiology follow-up diagnostic testing at 9-12 months of age. This information should be shared with parents and the baby's PCP. Hospitals are not required to report gentamicin exposure to the EHDI program for follow up.

Early Hearing Detection & Intervention Program (EHDI)

www.hearing.in.gov
(317) 233-1264

Comprehensive (Level 1) and Limited (Level 2)
Audiology Provider Facilities
August, 2019

This list was compiled from a survey sent to audiologists by the Early Hearing Detection and Intervention Program (EHDI) to facilitate families and professionals in finding services for children. The facilities were ranked by equipment available for infant audiologic testing as recommended by the Joint Committee on Infant Hearing (JCIH) and the National Center for Hearing Assessment and Management (NCHAM) and reported by survey responses. Comprehensive (formerly Level 1) facilities have the recommended equipment to provide comprehensive diagnostic audiology services for newborns and young children to determine hearing status. Limited (formerly Level 2) facilities also provide diagnostic assessment, but are without one piece of the recommended equipment and therefore provide limited diagnostic audiology services. ****Facilities that provide sedated ABR testing**

Comprehensive
(Formerly Level 1)

Central Region	
Hear Indiana 4740 Kingsway Dr. Suite 33 Indianapolis, IN 46205 (317) 828-0211 fax: (888) 887-0932	St. Vincent Fishers Hospital Rehab** 13914 Southeastern Parkway Suite 206 Fishers, IN 46037 (317) 415-9260 fax: (317) 415-9264
Balance Point** 5255 East Stop 11 Rd Suite 405 Indianapolis, IN 46237 (317) 807-0744 fax: (317) 807-1259	Riley Hospital IU Health** 705 Riley Hospital Dr. Indianapolis, IN 46202 (317) 944-8868 fax: (317) 962-9834
Pediatric Ear, Nose, & Throat Clinic** Peyton Manning Children's Hospital 8402 Harcourt Rd. Suite 400 Indianapolis, IN 46260 (317) 338-6815 fax: (317) 338-9538	St. Vincent Rehabilitation Clinic ** 14828 Greyhound Court, Suite 150 Carmel, IN 46032 (317) 582-9029 fax: (317) 582-9037

APPENDIX G

Northeast Region	
Parkview Pediatric Rehabilitation 3439 Hobson Road Fort Wayne, IN 46805 (260) 373-7925 fax: (260) 373-7929	Hometown Hearing and Audiology 225 E. Main St. North Manchester, IN 46962 (260) 306-3444 fax: (260) 306-3777
Beacon Medical Group Specialties ** 600 East Blvd. Elkhart, IN 46514 (574) 293-9448 fax: (574) 293-9480	Elkhart Clinic 303 S. Nappanee St. Elkhart, IN 46514 (574) 296-3290 fax: (574) 296-3383
Ear, Nose, & Throat Associates ** The Hearing Center 10021 Dupont Circle Ct. Fort Wayne, IN 46825 (260) 426-8117 (Ext 4) fax: (260) 416-0347	Give Hear 130 W Main Street, Ste. 150 Fort Wayne, IN 46802 (260) 602-3276 fax: (260) 444-3656
	Parkview Physician's Group-Audiology 442 W High St Bryan, OH 43506 (419) 633-4177 fax: (419) 633-7582

Northwest Region	
Community Hospital at Sandbridge Professional Center 9046 A Columbia Avenue Munster, IN 46321 (219) 703-2460 fax: (219) 703-6776	The Hearing Center of Franciscan Physician Network** 1225 E. Coolspring Ave Michigan City, IN 46360 (219) 873-2992 fax: (219) 878-5052
Community Hospital St. John Outpatient Centre 9660 Wicker Ave 2nd Floor St. John, IN 46373 (219) 703-2460 fax: (219) 703-6776	St. Catherine Hospital** 4321 Fir Street 2nd Floor East Chicago, IN 46312 (219) 392-7400 fax: (219) 392-7408
Family Hearing Center, Inc. 2134 College Ave. Goshen, IN 46528 (574) 533-2222 fax: (574) 533-6868	University of Chicago Medicine** 5758 S Maryland Ave. Chicago, IL 60637 (773) 702-1865 fax: (773) 834-0154
Family Hearing Center, Inc. 123 N. Center St. Bremen, IN 46506 (574) 546-4600 fax: (574) 533-6868	Ear, Nose, Throat & Sinus Center 85 East US Highway 6, Suite 220 Valparaiso, IN 46383 (219) 531-0625 fax: (219) 462-2834
Franciscan Health-Dyer 24 Joliet Street 1st Floor Dyer, IN 46311 (219) 864-2004 fax: (219) 864-2217	South Bend Clinic ** 211 N Eddy St South Bend, IN 46617 (574) 204-6184 fax: (574) 237-9383
Franciscan Health-Hammond 5454 Hohman Ave Hammond, IN 46320 (219) 933-2094 fax: (219) 933-2158	

Southeast Region	
Cincinnati Children's Hospital** 333 Burnet Ave, ML2002 Cincinnati, OH 45229 (513) 636-4236 fax: (513) 636-7316	Norton Children's Hospital ** 231 E. Chestnut St. Louisville, KY 40202 (502) 485-4700 fax: (502) 394-3636
Columbus Regional Health 3015 10th St Columbus, IN 47201 (812) 376-5695 fax: (812) 375-3702	University Audiology Associates 601 S. Floyd, Suite 600 Louisville, KY 40202 (502) 583-3277 or (502) 629-7710 fax: (502) 394-3636
Heuser Hearing Institute 117 East Kentucky St. Louisville, KY 40203 (502) 584-3573 fax: (502) 583-6364	Open Arms Children's Health : Little Ears** 1100 E. Market Street Louisville, KY 40206 (502) 596-1040 (option 2) fax: (502) 595-1413
Southwest Region	
Easter Seals Rehabilitation Ctr. 3701 Bellemeade Ave. Evansville, IN 47714 (812) 479-1411 fax: (812) 437-2636	Indiana University Hearing Clinic 200 S. Jordan Ave. Bloomington, IN 47405 (812) 855-7439 fax: (812) 855-5561
The Hearing Doctor, LLC 671 3rd Ave. A Jasper, IN 47546 (812) 484-9444 fax: (812) 671-9694	
West Central Region	
Purdue University 715 Clinic Dr. Lyles-Porter Hall West Lafayette, IN 47907 (765) 494-4229 fax: (765) 494-0771	Witham Health Services 2505 N. Lebanon St. South Pavilion, Suite 220 Lebanon, IN 46052 (765) 485-8687 fax: (765) 485-8689
Union Associated Physicians Clinic Audiology Department 1429 N 6th St. Terre Haute, IN 47807 (812) 242-3193 or (812) 242-3194 fax: (812) 231-4742	

East Central Region	
Reid Hearing Center 101 S. 10th St. Richmond, IN 46038 (765) 935-4477 fax: (765) 939-0007	Advanced Hearing Care 1827 N Madison Ave, Suite C Anderson, IN 46011 (765) 608-3277 fax: (765) 608-3278
Ball State University Audiology Clinic Arts and Communication Building, Rm 104 Muncie, IN 47306 (765) 285-8160 fax: (765) 285-5623	St. Vincent Anderson Regional Balance Center 2101 Jackson St. Suite 116 Anderson, IN 46016 (765) 646-8172 opt 1 Scheduling (765) 646-8411Audiology fax: (765) 646-8412

Limited
(Formerly Level 2)

Northwest Region	
Franciscan Health Hammond Center 9800 Valparaiso Drive Munster, IN 46321 (219) 934-9845 fax: (219) 934-9846	Indiana University Health Arnett 2600 Greenbush St. Lafayette, IN 47904 (765) 448-8100 fax: (765) 448-7625

Southeast Region	
Decatur Co. Memorial Hospital 720 N. Lincoln St. Greensburg, IN 47240 (812) 663-1119 fax: (812) 663-1324	Doctor's Hearing Care 3211 Grant Line Rd, Ste 37 New Albany, IN 47150 (812) 949-3272 fax: (812) 949-3271

Southwest Region	
Midwest ENT 1020 Professional Blvd Evansville, IN 47714 (812) 473-2060 fax: (812) 473-0763	

Early Hearing Detection and Intervention Direct Referral Form for Diagnostic Audiology Evaluation

Communicating Did Not Pass Results

Congratulations on the birth of your baby. We just finished screening your baby's hearing. Your baby did not pass two hearing screenings. This does not necessarily mean that your baby has a hearing loss, but without additional testing we can't be sure. Funding for follow-up testing can be found through private insurance, Medicaid, Children's with Special Healthcare Services (CSHCS), or private pay. If you would like to use Medicaid, private insurance, or pay for the services yourself, we will help you make the follow-up appointment before you leave the hospital. If you are interested in applying for CSHCS, we will assist you in getting the appropriate paperwork. If this form is being provided after hours or on the weekend, the hospital staff will be contacting you at home with the time and date of the appointment.

Indiana Locations for Follow-up Testing

(Please mark the location chosen for follow-up)

Please cut and paste appropriate and current Level 1 Centers

Appointment: ☐ Scheduled ☐ Needs to be Scheduled ☐ Interpreter-Type Needed: _____

Date: _____ Time: _____

Newborn Information

Name: _____ Date of Birth: _____

Birthing Facility: _____ Screening Facility: _____

Hearing Screening Date: _____ MRN: _____

Hearing Screening Results: Right ☐Pass ☐Refer Left ☐Pass ☐Refer

Funding for follow-up: ☐ Medicaid ☐ Self Pay ☐ Private Insurance _____

Parent/Guardian Contact Information

Name: _____ Language Spoken at Home: _____

Address: _____

Phone #: _____ Alternate Phone #: _____

Alternate Contact (Friend/Relative)

Name: _____ Alternate Phone #: _____

Primary Care Provider

Name: _____ Phone #: _____

Diagnosis: Failed newborn hearing screen **Diagnosis Code**: Z01.118 **This order is valid for six (6) months from the date ordered.**

Physician Authorizing Diagnostic Audiology Evaluation As the Primary Care Provider, you must sign below and fax back to the facility selected above at least 7 days before the above scheduled appointment or it will be cancelled. Signature must be that of the physician. A copied signature is acceptable.

Physician Signature: _____ Date: _____

Indiana State Department of Health
Early Hearing Detection and Intervention Program

Speech and Language Developmental Milestones (English)

All infants develop skills that help them learn to communicate and/or talk. Some infants develop these skills earlier, and some will develop these skills later. Talk to your doctor if you have any questions about your child's speech and language development.

If your baby is this old…	….he or she should:	
Birth – 3 months	❑ Be startled by loud noises ❑ Be soothed by familiar voices (such as Mom's voice) ❑ Make vowel sounds (ooh, ahh)	❑ Squeal or coo ❑ Laugh or giggle
3 – 6 months	❑ Make lots of sounds (ba-ba, ga-ga) ❑ Enjoy babbling ❑ Make high and low sounds	❑ Like toys that make noise or sing ❑ Turn his or her eyes and head to follow sounds (such as a parent's voice)
6 – 9 months	❑ Respond to his or her name ❑ Play with sound by repeating (la-la-la) ❑ Understand "no" and "bye-bye"	❑ Say "da-da" or "ma-ma" ❑ Listen to music or singing
9 – 12 months	❑ Respond differently to happy/angry talking ❑ Babble in response to voices	❑ Have 2 – 3 new words ❑ Stop when he/she h "no"
12 – 18 months	❑ Be able to identify people, parts of the body (head, foot), and toys ❑ Name what he/she wants ❑ Talk in sentences with a few words that people can understand	❑ Use gestures (such as hand waving) with speech ❑ Bounce to music ❑ Repeat some words
18 – 24 months	❑ Follow simple directions ❑ Speak in two-word phrases ❑ Have a vocabulary of about 20 words	❑ Recognize other sounds (such as cars, dogs, vacuum, doorbell)

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Speech and Language Developmental Milestones (Spanish)

Si su bebé es esto viejo…	…él o ella deberían:	
0 – 6 meses	☐ Llorar para obtener atención ☐ Vocalizar para expresar dicha ☐ Reírse ☐ Balbucear ☐ Demostrar juego de sonidos	☐ Voltear su cabeza siguiendo sonidos ☐ Responder a voces familiares
6 – 12 meses	☐ Empezar a responder a "No" ☐ Responder a sonidos cuando la fuente original no es visible ☐ Ondular su mano para decir adiós ☐ Vocalizar cuatro silabas diferentes	☐ Decir una o dos palabras espontaneas ☐ Imitar sonidos ☐ Empezar a decir "mama" o "papa" ☐ Seguir ocasionalmente direcciones simples
12 – 18 meses	☐ Identificar tres partes de su cuerpo o en una muñeca ☐ Sacudir su cabeza señalando "no" ☐ Usar 5-15 palabras espontaneas	☐ Imitar sonidos de animales o del ambiente ☐ Pedir mas ☐ Nombrar objetos familiares ☐ Encontrar artículos familiares no a la vista
18 – 24 meses	☐ Entender direcciones básicas ☐ Señalar dibujos nombrados ☐ Usar frases de dos palabras ☐ Referirse a sí mismo por su nombre ☐ Usar palabras nuevas regularmente	

Indiana State Department of Health
Early Hearing Detection and Intervention Program

Parents' Frequently Asked Questions (English)

1. Why screen my baby's hearing?

Hearing loss is one of the most common conditions present at birth. It is easy to miss hearing loss because you usually can't see anything different. Without screening, hearing loss is often not detected until the baby is 2 y old and not talking. Early identification and intervention means that your baby won't fall behind other children in speech and language development.

2. How do you check my baby's hearing?

OAE: Soft sounds are made into the baby's ear. If the ear is working normally, it will send back sounds that the computer can pick up and analyze. Your baby doesn't have to do anything other than be quiet. ABR: Soft sounds are made into the baby's ear and electrodes or little sensors pick up the brain's response to the sounds.

3. What does Pass or Refer mean?

Pass means that your baby's ears are working normally today. However, some babies develop hearing loss later so if you are concerned, you should always talk to your baby's medical provider about getting a hearing test.

Refer means that your baby did not pass the hearing screening and needs additional testing.

4. What happens if my baby Refers?

If your baby refers a second time, it is very important that you make an appointment with a pediatric audiologist as soon as possible to have a complete hearing test called an Auditory Brainstem Response test or an ABR.

5. How long does the hearing screen take?

Usually it takes 10 to 15 minutes depending on how quiet your baby is during the screening.

6. Will hearing screening hurt my baby?

No. Most babies sleep through the screen.

7. What can be done if hearing loss is detected?

Hearing loss cannot be determined by screening. Screening tells us if further testing by a pediatric audiologist is needed. If an audiologist finds that your baby has a hearing loss he or she will talk with you about what happens next.

8. What if I choose not to allow the hearing screen?

You will be asked to sign a refusal form and your baby's doctor will be advised of your decision. We recommend that you think about the screening. Please ask questions about your concerns. Finding a hearing loss as early as possible is critical in order for children to develop normal speech and language.

Indiana State Department of Health
Early Hearing Detection and Intervention Program

Parents' Frequently Asked Questions (Spanish)

1. ¿Por qué hacerle una prueba auditiva a mi hijo?

La pérdida auditiva es una de las condiciones más comunes que se presentan en los recién nacidos. Es fácil no percatarse de su existencia porque uno no puede ver nada diferente en el bebé. Sin la prueba auditiva, es frecuente que la pérdida auditiva no se detecte hasta que el niño tiene 2 años y no habla. La identificación e intervención temprana hacen que su bebé no tenga un retrazo en su habla y desarrollo del lenguaje.

2. ¿Cómo le hace la prueba auditiva a mi hijo?

OAE: Por medio de una sonda se introducen sonidos suaves en el oído del bebé. Si el oído funciona normalmente, éste producirá sonidos que son detectados y analizados por la computadora. Su bebé no tiene que hacer nada solamente permanecer callado.

ABR: Por medio de una sonda se introducen sonidos suaves en el oído de su bebé. Electrodos localizados en la frente y en los lóbulos de las orejas detectan la respuesta del cerebro a estos sonidos.

3. ¿Qué significa cuando mi bebé pasa/no pasa la prueba?

Si su bebé pasa la prueba, esto significa que los oídos de su bebé funcionan bien. Sin embargo, algunos bebés pueden desarrollar una pérdida auditiva después de la primera prueba. Si usted está preocupado debe hablar con la persona que provee los servicios de salud a su hijo sobre la posibilidad de hacerle otra prueba auditiva. Si su bebé no pasa la prueba esto significa que necesita exámenes adicionales.

4. ¿Qué pasa si mi bebé no pasa la prueba auditiva por segunda vez?

Si su bebé no pasa la prueba por segunda vez, es importante que haga una cita con un audiólogo pediatra lo más pronto posible para que realicen un examen que se llama ABR (por sus siglas en ingles).

5. ¿Cuánto tiempo toma hacer el examen?

Usualmente de 10 a 15 minutos dependiendo de que tan callado esté el niño durante la prueba.

6. ¿Le dolerá a mi bebé?

No. La mayoría de los bebés duermen durante la prueba.

7. ¿Cuál es el siguiente paso si se sospecha la existencia de una pérdida auditiva?

Una pérdida auditiva no puede ser confirmada por la prueba auditiva, esta indica que un audiólogo pediatra necesita realizar más pruebas. Si un audiólogo diagnostica una pérdida auditiva, él o ella le dirán cual es el siguiente paso a seguir.

8. ¿Qué pasa si tomo la decisión de no permitir que se le haga a mi bebé la prueba auditiva?

Se le pedirá que firme un documento y se le comunicará al doctor de su bebé su decisión. Le recomendamos que piense su decisión. Por favor haga preguntas sobre sus preocupaciones. El diagnóstico de una pérdida auditiva los más temprano posibles es importante para que los niños desarrollen un habla y lenguaje normal.

Indiana State Department of Health
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Screener Scripts (Spanish)

Informing Parents of the Screen (Spanish):
¡Hola! Felicitaciones por el nacimiento de su bebé. Usted recibió información sobre la prueba auditiva que le hacemos a todos los recién nacidos. Ahora vamos a hacerle la prueba auditiva a su bebé.

Passing (Spanish) Pasó:
Felicitaciones por el nacimiento de su bebé. Acabamos de finalizar la prueba auditiva de su bebé y él/ella la pasó. Este es un folleto que trata sobre el desarrollo del habla y del lenguaje. Es importante observar el desarrollo de su bebé especialmente de su habla y lenguaje ya que la audición de su bebé puede cambiar en cualquier momento. Si usted está preocupado de que su bebé no pueda oír, hable con el médico pediatra inmediatamente y pídale que lo envíe a donde un audiólogo especializado en hacer pruebas a bebés y niños pequeños.

Pass with Risk Factors (Spanish) Pasó con Factores de Riesgo:
Felicitaciones por el nacimiento de su bebé. Acabamos de finalizar la prueba auditiva de su bebé. Su bebé pasó la prueba hoy, pero tiene un factor de riesgo que podría causar con el tiempo que se le desarrolle pérdida del oído. Este es un folleto que trata sobre el desarrollo del habla y del lenguaje. Siempre es importante observar el desarrollo de su bebé especialmente de su habla y lenguaje ya que la audición de su bebé puede cambiar en cualquier momento. Es recomendable que su bebé sea examinado otra vez a los 9-12 meses de edad por un audiólogo especializado en hacer pruebas a bebés y niños pequeños. Si antes de este tiempo usted está preocupado de que su bebé no pueda oír, hable lo más pronto posible con el médico pediatra y pídale que lo envíe inmediatamente a donde un audiólogo especializado en hacer pruebas a bebés y niños pequeños.

Did not Pass-Refer (Spanish) No Pasó:
Felicitaciones por el nacimiento de su bebé. Acabamos de finalizar la prueba auditiva de su bebé. Los resultados
de la segunda prueba auditiva que le hicimos hoy a su bebé indican que él/ella no la pasó. Esto no necesariamente significa que su bebé tenga una pérdida auditiva permanente, pero sin hacer pruebas adicionales no podemos estar seguros. Los resultados de la prueba le serán enviados al médico de su bebé, además su niño será referido al audiólogo para programar una prueba auditiva de seguimiento. Por favor asegúrese de hacer o mantener la cita para hacer más exámenes auditivos (dependiendo del protocolo de su hospital).

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Improving Referral Rates

Low Referral Rates (<1.5%)

- When final screening refer rates drop below 1.5%, the risk of missing an infant with hearing loss increases.
- Screeners should receive adequate training on using screening equipment, infant preparation, and screening procedures.
- Over-screening during any given session can result in passing a baby who actually has a hearing loss. A well-meaning screener who repeats the screening multiple times to "try for a pass" may increase the odds of a false pass. **Only complete the hearing screening twice.** This is a disservice to the deaf or hard of hearing infant and his/her family.

High Referral Rates (>4%)

- Refer rates that are too high place an added burden to families who have to attend a follow up appointment.
- When screening is targeted and fewer infants are referred, it is more likely that identified infants will be followed more closely.
- False positive rates that are too high may lead to a lack of concern from physicians and families regarding the importance of the screening and the importance of further diagnostic testing for hearing loss.

Suggestions to Improve Referral Rates

- Check that equipment is calibrated and working correctly. Make any necessary repairs, and replace equipment if necessary.
- Make sure screening staff are properly trained. Review Screener Guidelines and Checklist, and review Effective Screening Practices.
- Review policies and procedures, and ensure they are being implemented appropriately. Ensure infants are being screened twice – no more, and no less (unless they pass).
- If all policies are being followed and refer rate is still too high or low, contact your regional audiology consultant from EHDI to help improve procedures.

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UNHS Screener Evaluation Form

Screener:_____Date:_____

General:

- Demonstrates knowledge and importance of universal hearing screening procedures
- Demonstrates competency in hospital infection control procedures
- Demonstrates competency in patient confidentiality procedures
- Demonstrates good (calming) baby handling skills
- Demonstrates ability to explain the screening test to parents and answers commonly asked questions
- Demonstrates competency in entering information into the screening equipment
- Demonstrates competency in setting up equipment
- Demonstrates competency in administering the screening test, storing results, printing results, and logging results
- Demonstrates ability to communicate results to parents in a sensitive manner
- Demonstrates ability to address common questions asked by parents and knowledge of where to refer if unable to answer questions
- Demonstrates competency in prioritizing infants to be screened based on age, estimated discharge time, and infant's activity level
- Demonstrates basic trouble-shooting ability with the screening equipment
- Is aware of how to report results to appropriate personnel at the facility.

Communication:

- ☐ Demonstrates understanding of and importance of newborn hearing screening
- ☐ Explains how the screening equipment works using proper terminology (OAE and/or AABR)
- ☐ Demonstrates knowledge of and ability to explain results
- ☐ Can list common reasons an infant might not pass the screen
- ☐ Can list common risk factors for progressive or delayed onset hearing loss, ask parents and document in test results.
- ☐ Demonstrates knowledge of proper terminology when giving results to parents (pass or refer/did not pass)
- ☐ Demonstrates ability to address the need for further testing without alarming parents
- ☐ Demonstrates ability to answer questions frequently asked by parents or physicians

(Adapted from materials from Seattle Children's Hospital)