



Tennessee Department of Health

Newborn Hearing Screening Guidelines

for

Hospitals and Birthing Centers

EHDI



**The Early Hearing Detection and
Intervention Program**

Revised April 2009

Hearing Screening Guidelines

Table of Contents

	Page
I. Tennessee State Law and Regulations for Newborn Hearing Screening.....	1
II. Hearing Screening Equipment.....	2
III. Hearing Screening Personnel (Screener) Requirements.....	3
IV. Hearing Screening Environment.....	4
V. Hearing Screening Procedure.....	4
A. When to Screen.....	5
B. Well Baby Nursery.....	6
C. Neonatal Intensive Care Nursery (NICU).....	7
D. Other Hearing Screening.....	8
VI. Hearing Documentation and Reporting.....	9
VII. Protection of Infants' and Families' Right.....	10
A. Consent / Refusal to Screen.....	10
B. Confidentiality.....	11
C. Access to Interpreter/Translation Services.....	11
VIII. Quality Assurance.....	11
A. Role of the Tennessee Department of Health.....	11
1. Reports provided by the Newborn Hearing Program	
2. Site Visits by the Newborn Hearing Program	
B. Role of the Birthing Hospital or Facility.....	12
C. Goals and Quality Indicators.....	12

Attachments

	Page
1. 2007 Joint Committee on Infant Hearing (JCIH) Position Statement:.....	14
Principles and Guidelines for Early Hearing Detection and Intervention (EHDI) Programs	
2. “Claire’s Law” for Newborn Hearing Screening.....	15
3. Newborn Hearing Curriculum Scripts.....	17
4. Hearing Screening Procedure Flow Chart.....	19
5. Tennessee Pediatric Audiology Directory	20
6. Newborn Hearing Screening Forms and Procedures.....	21
7. Risk Factors for Hearing Loss – JCIH.....	25
8. Refusal for Newborn Hearing Screening Form.....	26
9. Hospital/ Birthing Center Questionnaire on Newborn Hearing.....	27
10. Order Form for State Newborn Hearing Forms and Materials.....	32
11. Training Curriculum.....	33
12. Hearing Screening and Audiology Acronyms.....	35



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The purpose of the Tennessee Department of Health, Newborn Hearing Screening Program is to implement a comprehensive and effective system to screen infant hearing prior to discharge from the hospital or within the first month of life if the infant was not delivered in a hospital, to identify permanent hearing loss prior to three months of age and to implement appropriate intervention services, prior to six months of age. Guidelines are in compliance with the Joint Committee on Infant Hearing (JCIH) 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs (EHDI). (**Attachment 1**)

The purpose of these guidelines is to develop a comprehensive and standardized system to conduct and report hearing screening on all infants in the state of Tennessee. Healthcare providers will take an active role in educating families on the importance of further testing of infants who do not pass (refer) the hearing screen. These guidelines are intended to be used as a resource in the development of individual hospital newborn hearing screening policies. These guidelines will replace the 2002 guidelines provided by the Tennessee Department of Health.

I. Tennessee State Law and Regulation for Newborn Hearing Screening and Follow-up:

Tennessee passed “Claire’s Law” in April 2008 to require newborn hearing screening; effective July 1, 2008, Tennessee Code Annotated, Title 68, Chapter 5, Part 9, Sections 901-906, was amended to state “that every newborn infant shall be screened for hearing loss in order to prevent the consequences of unidentified hearing loss unless the parent or parents of the child object on the grounds that the test would conflict with the parent or parents’ religious tenets or practices. A child shall be screened for hearing loss prior to discharge from the birth facility or prior to one month of age.” **Out of hospital birth:** The attending health care professional shall refer a child born in a setting other than a hospital (including home birth) for hearing screening. (**Attachment 2**)

It is recommended that each Hospital and Birthing Center Newborn Hearing Screening program be under the direction of a medical provider (pediatrician, otolaryngologist, neonatologist, or audiologist). JCIH strongly recommends that an audiologist be involved in each component of the hearing screening program. Hospitals need to coordinate testing and reporting activities in consultation with audiology, nursing, and/or laboratory services that might be responsible for metabolic/genetic blood spot screening.

Revised key elements recommended for newborn hearing screening:

1. Hearing screening is required prior to hospital discharge from the birth facility or prior to one month of age per Claire's Law.
2. Report final hearing results prior to discharge.
3. Obtain a signed written and witnessed statement from the parent or caregiver when a hearing screening is refused.
4. Report hearing results on the appropriate form within 2 weeks after the screen.
5. If the infant "refers" – provide the family written hearing screening results and a written appointment to obtain further hearing testing as an outpatient at the birth facility or with an audiologist with pediatric experience and/or as designated by the primary care provider.
6. Transferred Infants: The hospital that discharges the infant to home is responsible for conducting the hearing screening prior to discharge.

II. Hearing Screening Equipment:

Currently there are two technologies available for physiologic screening of hearing in newborns: Auditory brainstem response (ABR) and otoacoustic emissions (OAE). Automated physiologic hearing screening equipment does not require interpretation by the screener and is recommended if non-audiologists conduct the screening.

A. Definitions for physiologic hearing screening equipment:

- Automated ABR – An objective hearing measurement tool utilizing surface electrodes and clicks as stimuli. It is recommended the screening level be no greater than 35dBHL.
 - Note: Automated ABR may miss some hearing losses, such as high frequency loss or other minimal degree of hearing loss.
- Automated OAE –An objective hearing measurement tool utilizing ear probes that measure/record low intensity sounds occurring in the ear canal. There are two types of OAE technologies: Transient Evoked Otoacoustic Emissions (TEOAE) and Distortion Product Otoacoustic Emissions (DPOAE).
 - Note: Automated OAE may miss a disorder called auditory neuropathy/auditory dys-synchrony.

B. Hospitals and birthing centers should screen newborn hearing using at least one of the following physiological hearing screening methods:

- Auditory Brainstem Response
- Otoacoustic Emissions
- Combination of both methods (ABR-OAE).

C. It is recommended that ABR be utilized in the NICU.

D. Hearing screening equipment should be monitored regularly and calibrated per vendor and hospital recommendations to maintain accurate functioning.

E. In case of equipment malfunction, there must be a back up plan to obtain replacement equipment, test infants at a later date or to refer infants to an audiologist with pediatric experience and/or as designated by the primary care provider.

III. Hearing Screening Personnel (Screener) Requirements:

It is strongly recommended that all birthing facilities involve an audiologist in the design and implementation of the screening program. Training on hospital hearing screening in DVD/CD format and education material is available through the Tennessee Department of Health. See Section VIII-A-3 of this document.

- A. Screeners should be trained by individuals with experience in newborn hearing screening techniques and practice. Training should be competency based and involve hands-on components. Screeners may include audiologists, registered nurses, or other trained technical staff. Staff should meet facility employment requirements.
- B. Screeners should have adequate skills in soothing and calming newborns.
- C. Screeners should be trained and prepared to discuss test procedures with parents and caretakers.
- D. Screeners or designated individuals should be trained and prepared to share results with non-English speaking families. The hospital should have interpreters available and written information should be in the language of the family. See Section VII-C of this document.
- E. The use of prepared “scripts” may be helpful in assisting staff with reporting results and providing families with follow-up information. See **Attachment 3** for samples of training materials developed by NCHAM.
- F. A method for regularly monitoring and assessing screeners’ performance should be established.
- G. A plan should be established for the initial and periodic training of screeners.
- H. Training for screeners for the determination of appropriate risk factors for progressive and late onset hearing loss should be provided by a medical professional. Staff should have a clear understanding of when to mark the hearing form due to Neonatal risk factors due to “ototoxic medications” or “NICU > than 5 days. See Section VI-A-4 of this document.
- I. A plan should be established for the supervision of screeners. Tools such as a competency checklist and job plan should be considered.
- J. Contracting for Screening:
 - 1. The facility may choose to contract for hearing screening activities with a private otolaryngology or audiology practice, or another medical center.
 - 2. The facility may choose to contract with an agency, facility, or practice that specializes in newborn hearing screening.

IV. Hearing Screening Environment:

- A. Select a testing environment that minimizes noise and confusion in the screening area. Screening will be faster and more effective if conducted in a quiet and controlled environment.
- B. Ideally, a space should be set aside to use for screening which is
1. Close to the nursery
 2. Available during screening times
 3. Has curtains
 4. Has acoustic dividers
 5. Free of electrical interference
- C. Mother's room
1. Turn off television/radio
 2. Ask family members to be quiet or leave room
 3. Acoustics and electrical interference may be a factor to consider
- D. Nursery
1. Test away from other babies
- E. Intensive Care Nursery
1. Wait until the infant is in a crib
 2. Perform as close to hospital discharge time or day as possible
 3. Attempt to screen after 34 weeks gestational age.

V. Hearing Screening Procedure:

The goal of universal newborn hearing programs is to screen 100% of the hospital births prior to discharge or by one month of age. Screen both ears of all infants.

TIPS for screening

- Visually inspect the ear canal for debris (wax, blood, vernix)
- Change the position of the infant, especially if the infant has been lying on the ear you plan to test.
- Seat the ear phone probe by gently pulling the ear up and out: this will open up the canal.
- If the baby does not pass on the first try:
 - Remove the probe and check for debris
 - Replace the tip if needed
 - Clean probe if needed
 - Reposition the probe and repeat the screen

A. When to Screen

1. Testing should be completed as close to discharge as possible.
2. If possible, testing should not be attempted prior to 12 hours of life; it is preferable to screen between 24-72 hours of life.
3. Complete the initial screen for newborns discharged prior to 12 hours of age at time of discharge: if passing results not obtained, baby should return (or be referred) as outpatient within 2 weeks for a second screen.
4. After infant completes nursing or feeding, to increase the chance of the infant sleeping during the procedure.
5. C-section babies: wait at least 24 hours for first attempt to allow ear canal debris to clear.
6. False positive rate decreases after 12-24 hours after birth.
7. False positive rate decreases overtime during the first 4 days of life when using OAE.
8. If baby does not pass first screen:
 - If second step is OAE, wait 12 hours before second screen.
 - If second step is ABR, wait several hours before second screen.
9. Test time per baby may vary from 3-6 minutes dependent upon type of equipment and cooperation of the newborn.
10. Consider performing after 34 weeks gestational age.
11. It is not necessary to hold the screen if the infant is receiving antibiotic therapy. The hearing screening should still be performed prior to discharge. Antibiotic therapy should not be a reason for a “missed” screen.
12. Hyperbilirubinemia: It is permissible to conduct hearing screening if infant receives phototherapy.
13. Readmissions during first month of life:
 - a. A repeat hearing screening should be completed on all infants (NICU or well baby) readmitted during the first month of life when there are conditions associated with potential hearing loss (e.g., hyperbilirubinemia requiring exchange transfusion or culture positive sepsis).
 - b. An ABR should be completed before discharge

B. Well Baby Nursery

1. Two-Step Method of Screening - Hospital based: For the purposes of these guidelines, a two-step screening means that the newborn may receive up to 2 hearing screenings conducted at separate intervals prior to discharge from the hospital, if time allows. A second screen may be indicated on infants who did not pass the first screen. Report results as “Refer” if infant does not pass the second screen. Refer to the Hearing Screening Flow Chart. (**Attachment 4**)
 - a. Initial screen: Two (2) attempts may be conducted on each ear before considered as a refer.
 - b. Second screen: Conduct at separate time of day than the initial screen. Two (2) attempts may be conducted on each ear before considered a “Refer”.
 - c. Maximum: Do not screen more than 2 times in each ear at either the initial or second screen.
 - Screen ABR
 - a. Screen with ABR (pass)
 - b. Screen with ABR (not pass)
 - Perform a second ABR screen (see time of testing)
 - Screen OAE
 - a. Screen OAE (pass)
 - b. Screen OAE (not pass)
 - Perform second OAE screen (see time of testing)
 - Screen OAE/ABR
 - a. Screen OAE and ABR (pass)
 - b. Screen OAE and ABR (not pass one or both tests)
 - Perform second screen with ABR and OAE (see time of testing)
 - Consider test as a “Pass” only if infant passes both OAE and ABR in both ears.
2. If the newborn passes the hearing screen:
 - a. The screener, nurse or audiologist should notify the parent or caregiver in person, if possible, and in writing of the hearing result. Information should be provided in the appropriate language for a non-English speaking family. Document the result in the medical record.
 - b. If the infant has been determined to have a risk factor for hearing loss, discuss the risk and the need for periodic testing with the parent.
3. If the newborn does not pass a screen:
 - a. The screener, nurse or audiologist should notify the parent or caregiver in person and in writing of the hearing result and provide the family with an appointment to obtain a hearing rescreen as an outpatient at the birth facility or further hearing testing with an audiologist with pediatric experience and/or the primary care provider.
 - b. If the infant has been determined to have a risk factor for hearing loss, discuss the risk and the need for periodic testing with the parent.
 - c. Refer to the “Tennessee Pediatric Audiology Directory” (**Attachment 5**) to locate an appropriate pediatric audiology provider near the infant’s residence.
 - d. Ask parent for a second point of contact for the family (additional name and phone). Document information on the hearing report form.

- e. Verify the identity of a primary care provider or clinic, that will provide care after discharge, is reported on the hearing report form.

C. Neonatal Intensive Care Nursery (NICU) and other specialty IC units

1. Two-Step Method of Screening - Hospital based: For the purposes of this protocol, a two step screening means that the newborn may receive up to 2 hearing screenings conducted at separate intervals prior to discharge from the hospital if time allows. ABR is the preferred method of screening for all NICU infants, regardless of other risk factors for hearing loss, due to the increased rate of auditory neuropathy. Refer to the Hearing Screening Flow Chart. **(Attachment 4)**
 - a. Initial screen: Two (2) attempts may be conducted on each ear before considered a refer.
 - b. Second screen: Conduct at separate time of day than the initial screen. Two (2) attempts may be conducted on each ear before considered a “Refer”.
 - c. Maximum: Do not screen more than 2 times in each ear at either the initial or second screen.
 - Screen ABR/ABR
 - a. Screen with ABR (pass)
 - b. Screen with ABR (not pass); perform a second ABR screen (see time of testing)
 - c. Not pass second in-house rescreen; refer to audiologist or other hearing professional.
 - Screen OAE/ABR
 - a. Screen OAE and ABR (pass)
 - b. Screen OAE and ABR (not pass one or both tests)
 - Perform second screen with ABR and OAE (see time of testing)
 - Consider test as a “Pass” only if infant passes both OAE and ABR in both ears.
 - c. Refer to audiologist or other hearing professional.
2. NICU infants admitted for greater than 5 days should have an auditory brainstem response (ABR) included as part of their hearing screening so that neural hearing loss will not be missed.
3. Infants who do not pass the automated ABR in NICU should be referred directly to an audiologist for rescreening and, when indicated, comprehensive evaluation including diagnostic ABR.
4. Hearing screening may be delayed in the NICU population due to the medically fragile status of the infant. However, testing should be conducted when the infant is clinically stable and before discharge.
5. Consider performing after 34 weeks gestational age.
6. If the newborn passes the hearing screen:
 - a. The screener or nurse/audiologist should notify the parent or caregiver in person, if possible, and in writing of the hearing result. Information should be provided in the appropriate language for a non-English speaking family. Document the result in the medical record.

- b. If the infant has been determined to have a risk factor for hearing loss, discuss the risk and the need for periodic testing with the parent.

7. If the newborn does not pass a screen:

- a. The screener, nurse or audiologist should notify the parent or caregiver in person and in writing of the hearing result and provide the family with an appointment to obtain a hearing rescreen as an outpatient at the birth facility or further hearing testing as an outpatient at the birth facility or with an audiologist with pediatric experience and/or the primary care provider.
- b. If the infant has been determined to have a risk factor for hearing loss, discuss the risk and the need for periodic testing with the parent.
- c. Refer to the “Tennessee Pediatric Audiology Directory” (**Attachment 5**) to locate an appropriate pediatric audiology provider near the infant’s residence.
- d. Ask parent for a second point of contact for the family (additional name and phone). Document on the hearing report form.
- e. Verify the identity of a primary care provider or clinic, that will provide care after discharge, is reported on the hearing report form.

D. Other Hearing Screenings

1. Infants born in a “non-birthing hospital”:

- a. A child born on an emergency basis in a hospital that does not otherwise provide obstetrical or maternity services and which does not provide infant hearing screening shall refer a child born in that facility for hearing screening to an appropriate hearing screening provider.

2. Home births and other out-of-hospital births:

- a. The attending health care professional shall refer a child born in a setting other than a hospital, including home births, for hearing screening.

3. Transfers to in-state or out-of-state hospitals:

- a. Discharge and transfer forms should contain information regarding the status if the hearing screen (completed –pass/refer or not completed). The hospital that discharges the infant to home is responsible for assuring a hearing screening was completed.

4. Across state border babies:

- a. Hospitals should screen all babies born in their hospital regardless of infant’s state of residence.

5. Readmissions during first month of life:

- a. A repeat hearing screening should be completed on all infants (NICU or well baby) readmitted during the first month of life when there are conditions associated with potential hearing loss (e.g., hyperbilirubinemia requiring exchange transfusion or culture positive sepsis).
- b. An ABR should be completed before discharge.

VI. Hearing Documentation and Reporting:

A. Reporting Forms: The hospital or birthing facility must report the results of the newborn hearing screen on the Tennessee State Newborn Hearing Screening Laboratory Form. This form is used to collect blood specimens for newborn screening and to report the results of the hearing screen conducted by the hospital. (**Attachment 6**)

1. See sample of how to complete the reporting form.
2. Results should be reported as soon as possible and no later than two weeks after the screen.
3. Mailing of forms with a blood specimen should not be delayed awaiting hearing results.
4. Record risk factors for hearing loss – It is recommended that a medical professional obtain the risk information from the infant’s mother and the medical record. Infants with risk factors will require periodic retesting during the first three years of life. (**Attachment 7**)
 - Birthing hospital and facilities should develop clear criteria for staff to determine appropriate risk factors.
 - Example: Should the infant be considered “High Risk due to ototoxic medications” for 2 day therapy with gentamycin vs long term therapy?

5. Forms:

- Report on the blood spot form
- **OR** on the pink tear out copy of the blood spot form
- **OR** on the “Hearing Screening Only” lab form, if a copy of the tear out form is not available
- **IF** an initial test is reported as a “**REFER**” and sent in with the blood spot, **AND** the infant “**PASSES**” a follow-up screen completed prior to discharge; the rescreen may be reported on the pink tear out copy or on a “Hearing Screening Only” form.

6. Documentation of results:

- Date of hearing screen
- Passed
- Refer
 - Not pass
 - Unsuccessful attempt (inconclusive, noise, activity, etc.)
- Not Performed
 - Missed
 - Equipment failure/equipment not available
- Declined
 - Waived by parent/guardian due to religious belief
- Discharged
 - Transferred prior to hearing screen due to medical status
- Risk Factors
 - Risk factors are compressed into 5 categories.
 - Report as many categories as applicable.

Note:

- Send copy of **final** hearing results conducted prior to discharge.

B. Medical Record: Hearing screening results should be documented in the client's medical record by implementing one or more of the following options:

1. A copy of the printed hearing screening results generated by the screening equipment.
2. A copy of the blood spot slip with hearing results (tear out "pink" form)
3. A copy of the "Hearing Screening Only" lab form, if a copy of the tear out form is not available.
4. Enter the hearing screening results in the appropriate table, checklist, care plan or progress notes as determined by hospital policy.

C. The hospital or birthing facility will need to develop documentation procedures in accordance with hospital policy to verify that all infants have received a hearing screen or documentation as to why the screening was not performed.

D. Hearing screening equipment may have a computerized reporting, documentation and tracking system. The equipment vendor will assist the hospital or birthing facility in development of a reporting system that is compatible with in-house policy. The Department of Health is unable to accept electronic reporting at this time.

VII. Protection of Infants' and Families' Rights:

A. Consent to screen:

1. Newborn hearing screening is required per Tennessee Code Annotated, Title 68, Chapter 5., Section 9. Informed consent is **not required** for testing or for reporting to the State newborn screening program.
2. The parent or parents of the child may object to the hearing screen on the grounds that the test would conflict with the parent or parents' religious tenets or practices.
 - a. Obtain a signed written and witnessed statement from the parent or caregiver when a hearing screening is refused. Use the Newborn Screening Refusal Form provided by the Department of Health. (**Attachment 8**)
 - b. Record "refused" in the hearing screening section of the Metabolic/Genetic blood spot lab slip.
 - c. File the document in the infant's medical record.
 - d. Provide the parent with information on newborn hearing screening.
3. Parent/Caregiver should be advised of the newborn hearing screen before it occurs. Informed consent is not required for testing or reporting of results to the state program; however, the procedure should comply with individual hospital policy and procedure.
4. Parent/Caregiver should be advised if they are to be charged for the hearing screening and will receive a separate bill for services.

5. The hospital or birth center may notify the Tennessee Department of Education Early Intervention System (TEIS) of infants that do not pass the hearing screen and need assistance to return for further hearing testing. A release of information is not required to notify TEIS (Federal Individuals with Disabilities Act-IDEA - Part C Child Find Regulations, 34 CFR Part 303.302 Proposed Rule; May, 2007).
6. The State NHS screening program will notify TEIS of infants reported that DID NOT PASS the hearing screening and have not had follow-up testing completed within 6 weeks of screening.

B. Confidentiality

1. Reporting of the newborn hearing screening results to the Tennessee Department of Health Laboratory and Newborn Hearing Screening program is permitted under the standards of the Health Insurance Portability and Accountability Act (HIPAA) of 1996.
2. Reporting of hearing screening follow-up results to the Tennessee Department of Health Laboratory and Newborn Hearing Screening program by the hospital, birthing center, medical provider, and/or audiologist is required per "Clarie's Law" TCA 68-5-901 to 906 and permitted under HIPAA.

C. Access to Interpreter/Translation Services

1. Hospitals and birthing centers shall meet the standards of Title VI of the Department of Health and Human Services, Civil Rights Act of 1964 that prohibits discrimination based on race, color, and national origin by federally funded recipients.
2. Hospitals and birthing centers shall meet the standard of Title VI as it pertains to individuals with limited English proficiency or deafness and the need to provide access to interpreter and/or translation services.
3. Hospitals and birthing centers will have linguistically appropriate and culturally sensitive materials to inform parents and guardians about the newborn hearing screening process.

VIII. Quality Assurance:

The Tennessee Newborn Hearing Program strives to meet the goals as recommended by Joint Committee on Infant Hearing (JCIH) 2007 Position Statement on Universal Newborn Hearing Screening and the American Academy of Pediatrics Position Statement. The JCIH document is available at <http://www.pediatrics.org/cgi/content/full/120/4/898> and at American Speech-Language-Hearing Association web site. www.asha.org (**Attachment 1**)

- A. The role of the Tennessee Department of Health Newborn Hearing Screening Program will be to monitor hearing screening programs quarterly, provide brochures, and assist in training activities.
 1. The following reports are sent to the designated hearing coordinator for each facility.
 - a. Hearing Screening
 - Individual Hospital Report by Patient (Screens, % Screened, Refers, % Refer, Risk Factors, Equipment) - Quarterly
 - Individual Hospital Report of "No Hearing Screen Reported" by Infant Name - Monthly upon request.

b. Hearing Follow-up Outcomes (Follow-up Completed)

- Individual Hearing Screening Outcomes – Quarterly – This report indicates the number of infants born at a hospital that “referred” the hearing screen and received follow-up testing. This can be used to measure the effectiveness of the hospital referral process.

c. Additional reports available upon request

- All reports can be provided by monthly, quarterly or yearly data.
- Number of Infants with TennCare Screened per Hospital (as per hospital report)
- Reason for No Hearing Screen

2. Site visits will be conducted periodically. Facilities will be notified prior to a site visit. The Hospital Questionnaire will be used as an evaluation tool. (**Attachment 9**)

3. Educational and training materials are available at no cost through the Tennessee Department of Health. Materials can be viewed on the Newborn Hearing Web Site:

<http://health.state.tn.us/NBS/hearing.htm>

Or request by phone 615-262-6160; Fax 615-262-6159; E-mail – Jacque.Cundall@state.tn.us

a. Copy of Materials Order Form (**Attachment 10**)

b. Brochures

c. Posters

d. Hospital Report Forms (**Attachment 6**)

e. Audiology Report Form

f. Guidelines: Hospitals, Audiologists, Early Intervention

g. Tennessee Pediatric Audiology Directory (Hearing Screening, Diagnostic Services, Hearing Aids, Cochlear Implants, Early Intervention, Family Support) (**Attachment 5**)

h. Training DVD/CD: Newborn Hearing Screening Training Curriculum – Competency-based Training for New Hearing Screeners by the National Center for Hearing Assessment and Management (NCHAM) (**Attachment 11**)

B. The role of the Birthing Hospital or Facility:

1. Develop written policies and procedures for Newborn Hearing Screening procedures and training.
2. Review quarterly/monthly reports.
3. Utilize reports to improve reporting, identify challenges, and implement policy changes and recognize employees for meeting goals.

C. Newborn Hearing Program Goals, Benchmarks and Quality Indicators:

Goal 1. All newborns will be screened for hearing loss before one month of age, preferably before hospital discharge.

Quality Indicators for Screening:

1. Recommended benchmark: >95% of all births screened prior to discharge or prior to one month of age. (Age correction for preterm births is acceptable)
2. Percentage of all newborns who fail initial screening and fail any subsequent rescreening before comprehensive audiologic evaluation. Recommended benchmark: <4%.

Systems:

1. Each facility will have written newborn hearing polices and procedures.
2. Documentation of periodic calibration of hearing screening equipment.
3. Documentation of a back-up plan for hearing screening in case of equipment failure.
4. Contact the Tennessee Department of Health Newborn Hearing Screening program if your facility will not be able to provide hearing screening for more than 5 days due to equipment failure.

Screening:

1. Percentage of infants screened prior to discharge at birth or prior to one month of age.
2. Percentage of infants screened before one month of age (it is recognized that medically fragile infants/NICU may be screened later than one month of age.)
3. Percentage of infants who do not pass (refer) the hearing screening (refer rate).
4. Percentage of infants not screened due to transfer to another facility prior to screening.
5. Percentage of families who refuse hearing screening.
6. Percentage of infants born in the hospital but not screened or not reported.
7. Within 6 months of initiation of a hearing screening program the hospital or birthing center will screen a minimum of 95% of infants prior to hospital discharge or one month of age.

Goal 2. All infants who screen positive (refer) will have a diagnostic audiologic evaluation before three months of age.

Quality Indicators for Confirmation of Hearing Loss:

1. Of infants who fail initial screening and any subsequent rescreening, the percentage who complete a comprehensive audiologic evaluation by three months of age. Recommended benchmark: 90%.
2. For families who elect amplification, the percentage of infants with confirmed bilateral hearing loss receiving amplification devices within one month of confirmation of hearing loss. Recommend benchmark: 95%.
3. Although hospitals are not required at this time to track follow-up, the percentage of infants that return for further testing will be used to assess the effectiveness of the hospital in providing families with appropriate referrals for hearing follow-up prior to discharge.

References

1. Joint Committee on Infant Hearing, *Pediatrics*, 120, 898-921 American Academy of Pediatrics. Available at <http://www.pediatrics.org/cgi/content/full/120/4/898> and www.asha.org/policy
2. Tennessee Code Annotated , Title 68, Chapter 5, Part 9, Section 901-906. www.tennessee.gov/laws
3. Rules and Regulations of the Tennessee Department of Health Chapter 1200-15-1 www.tennessee.gov/laws

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**Year 2007 Position Statement: Principles and Guidelines for Early Hearing
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The online version of this article, along with updated information and services, is
located on the World Wide Web at:

<http://www.pediatrics.org/cgi/content/full/120/4/898>

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American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



EARLY HEARING DETECTION OF HEARING LOSS
(Claire’s Law – Effective July 1, 2008)

Tennessee Code Annotated, Title 68, Chapter 5
Part 9 - Early Hearing Detection of Hearing Loss

Title 68 – Health, Safety, Environmental Protection
Chapter 5 - Prevention of Diseases

Part 1 —General Provisions

Part 2 —Newborn Testing—Eyes

Part 3 —Newborn Testing—Metabolic Defects [Repealed]

Part 4 —Newborn Testing—Metabolic Defects

Part 5 —Genetic Testing

Part 6 —Pregnancy Serological Tests

Part 7 —HIV Screening

Part 8 —Tennessee Chronic Kidney Disease Screening Act of 2005

Part 9 —Early Detection of Hearing Loss

68-5-901. Legislative findings.

The general assembly finds and declares the following:

- (1) That hearing loss occurs in newborns more frequently than any other health condition for which newborn screening is currently required;
- (2) That early detection of hearing loss, early intervention, and early follow-up have been demonstrated to be highly effective in encouraging development of a child's health and communication and cognitive skills; and
- (3) That early screening and intervention will serve the public purposes of promoting healthy development of children and reducing public expenditures for health care, special education and related services.

[Acts 2008, ch. 768, § 2.]

68-5-902. Part definitions.

As used in this part, unless the context otherwise requires, “hearing screening” or “hearing screening test” means a screening or test provided in accordance with current hearing screening standards established by a nationally recognized organization such as the Joint Committee on Infant Hearing Screening of the American Academy of Pediatrics.

[Acts 2008, ch. 768, § 3.]

68-5-903. Newborn infant.

Every newborn infant shall be screened for hearing loss in order to prevent the consequences of unidentified hearing loss, unless the parent or parents of the child object on the grounds that the test would conflict with the parent or parents' religious tenets or practices.

[Acts 2008, ch. 768, § 4.]

68-5-904. Child born in hospital or other specified facilities.

(a) A child born in a hospital or other birthing facility shall be screened for hearing loss prior to discharge from that facility. The attending health care professional shall refer a child born in a setting other than a hospital or other birthing facility to the department of health or an appropriate hearing screening provider as listed in the latest edition of the directory of hearing screening providers in

Tennessee for hearing screening. A child born on an emergency basis in a hospital that does not otherwise provide obstetrical or maternity services and that does not provide infant hearing screening tests prior to discharge of an infant from the hospital, shall refer a child born in that facility to the department of health or an appropriate hearing screening provider as listed in the latest edition of the directory of hearing screening providers in Tennessee for hearing screening. The hearing screening test shall be provided in accordance with current hearing screening standards established by a nationally recognized organization such as the Joint Committee on Infant Hearing Screening of the American Academy of Pediatrics. All screening providers or entities shall report their screening results to the department of health.

(b) Any medical or audiologic provider performing follow-up tests shall report the results of the tests to the department of health.

[Acts 2008, ch. 768, § 5.]

68-5-905. Report and referrals.

The results of all hearing screenings performed pursuant to this part shall be reported to the department of health. The department of health shall refer any child who does not pass the hearing screening test to the Tennessee early intervention system (TEIS) of the department of education for follow-up. Children who have been identified with hearing loss or high risk conditions that place them at high risk for hearing loss as identified by standards established by a nationally recognized organization such as the Joint Committee on Infant Hearing Screening of the American Academy of Pediatrics shall be referred to the TEIS.

[Acts 2008, ch. 768, § 6.]

68-5-906. Rules and Regulations.

The department of health, in consultation with the department of education, shall promulgate rules and regulations in accordance with the Uniform Administrative Procedures Act, compiled in Title [4](#), Chapter 5, to effectuate this part.

[Acts 2008, ch. 768, § 7.]

Tennessee Codes and Laws: <http://www.tennesseeanytime.org/laws/>

Newborn Hearing Screening Training Curriculum Scripts

Informing Parents of the Screen:

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

Informing Parents of the Screen (Spanish):

¡Hola! Felicitaciones por el nacimiento de su bebé. Usted recibió información sobre el tamizaje auditivo que le hacemos a todos los recién nacidos. Ahora vamos a hacerle el tamizaje a su bebé.

Passing:

Congratulations on the birth of your baby. We just completed the hearing screen; the results are a pass. 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 (Spanish) Pasó:

Felicitaciones por el nacimiento de su bebé. Acabamos de finalizar el tamizaje 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.

Not Passing:

Congratulations on the birth of your baby. We just finished screening your baby's hearing. Your baby did not pass the 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. Please be sure you make or keep (depending on your hospital's protocol) the appointment for further hearing testing.

Not Passing (Spanish) No Pasó:

Felicitaciones por el nacimiento de su bebé. Los resultados del tamizaje auditivo que le hicimos hoy a su bebé indican que él/ella no lo pasó. Esto no necesariamente significa que su bebé tenga una pérdida auditiva permanente, pero sin hacer pruebas adicionales no podemos estar seguros. Los resultados del tamizaje le serán enviados al médico de su bebé. Asegúrese de hacer una cita para hacer más exámenes auditivos o acudir a esta (dependiendo del protocolo de su hospital).

Inconclusive:

Although we attempt to provide newborn hearing screening to all babies born at our hospital, we were unable to complete the screening on your baby. It is important that your baby be screened as soon as possible. Let's schedule a time for the screening to be completed within the next 2 weeks.

No Concluyente:

Aunque tratamos de hacerle un tamizaje auditivo a todos los recién nacidos en nuestro hospital, no pudimos completar el tamizaje de su bebé. Es importante hacerlo lo más pronto posible. Hagamos una cita para terminar de hacerle la prueba durante las dos semanas entrantes.

Not Passing Outpatient Rescreen:

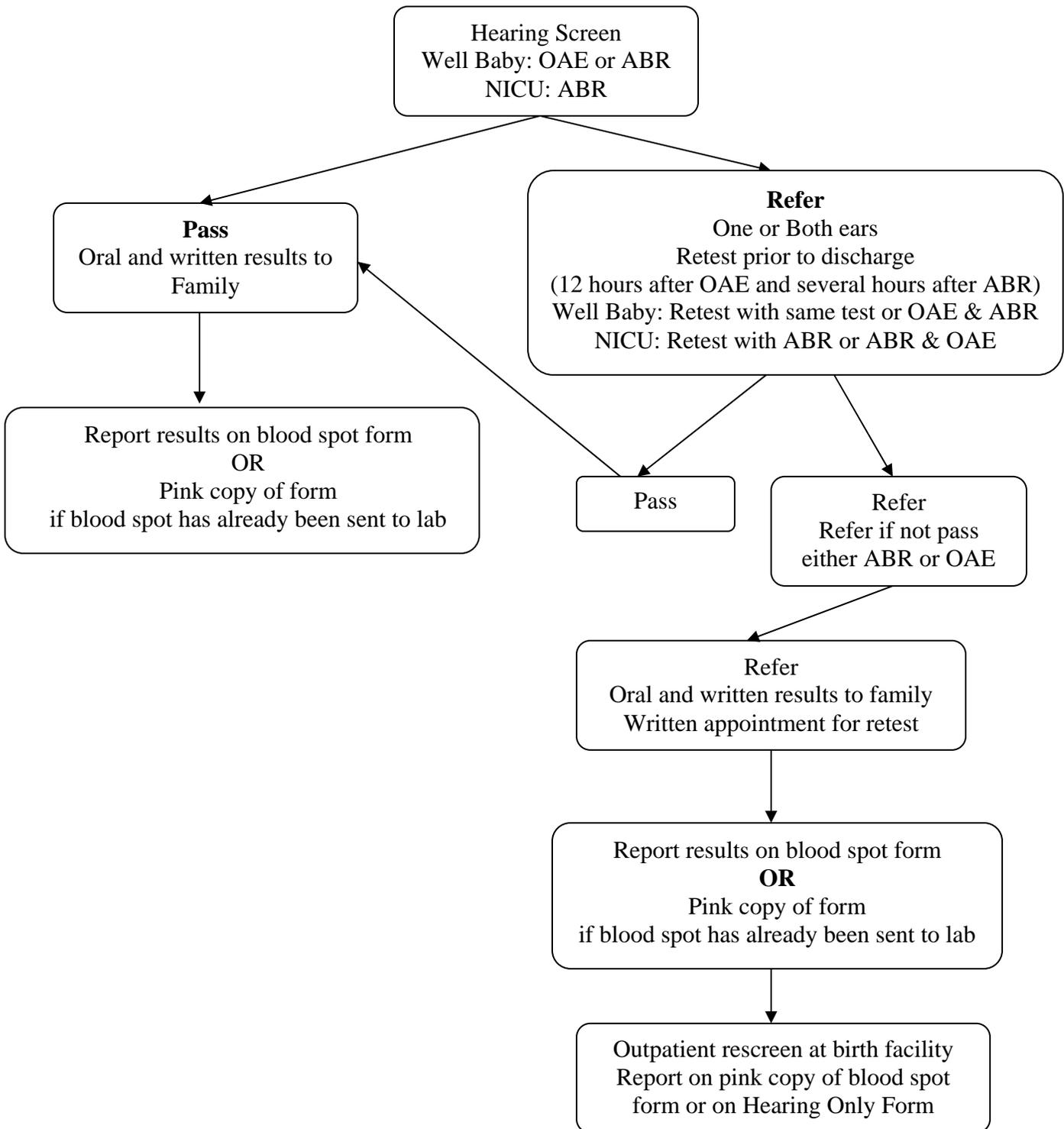
Your baby did not pass the second screen. The screening does not tell us whether your baby has a hearing loss; it just tells us that further testing should be done as soon as possible. The next step is to get a diagnostic ABR as soon as possible. This should be discussed immediately with your baby's doctor who may need to help you with obtaining a referral to a pediatric audiologist.

No Pasó El Segundo Tamizaje Auditivo:

Su bebé no pasó el segundo tamizaje auditivo. Esto no significa que su bebé tiene una pérdida auditiva; solamente nos indica que se deben hacer más pruebas lo más pronto posible. El siguiente paso es realizar una prueba de potenciales evocados auditivos del tronco cerebral (conocida por sus siglas en inglés ABR). Hable de manera inmediata con el médico de su bebé quien puede ayudarle a conseguir una cita con un audiólogo pediatra.



Hospital Newborn Hearing Screening





The Early Hearing Detection and
Intervention Program

PEDIATRIC AUDIOLOGY DIRECTORY

**Hearing Screening
Diagnostic Services
Hearing Aids & Cochlear Implants
Early Intervention
Family Support**

Tennessee Department of Health
Women's Health & Genetics, Newborn Hearing Program

Web: www.health.state.tn/NBS/hearing.htm

Tennessee Newborn Screening Form Metabolic/Genetic and Hearing Screening

1. Record hearing results and submit with the blood spot.
2. The blood spot form has a tear out page to use to report the hearing screen on tests that were not conducted or not reported on the initial blood spot collection form.

Front

NEWBORN SCREENING		TO AVOID RECOLLECTION- Accurately complete the entire form	
INFANTS INFORMATION	Specimen First Repeat <input type="checkbox"/>	Previous TDH#	Reason: () 24 hr. () Unsatisfactory () Abnormal () Transfused
	Test: () TSH () Hgb () Gal () Gal/Enz () CAH () MSMS () BIO	SEX: () 1. Male () 2. Female	STATUS OF INFANT AT TIME OF COLLECTION *Transfused: () Yes () No
	Infant's Last Name First Previous Last Name	RACE: () 1. White () 2. Black () 3. Asian () 4. Am. Ind. () 5. Other	If yes Date of Last: / / Gestational Age
	Birth Date Time of Birth MIL TIME () 1. Single Birth () 2. Twin () A or () B () 3. Other	ETHNICITY: () 1. Hispanic () 2. Nonhispanic	*Feeding: () 1. Breast () 2. Soy () 3. I.V. () 4. Lactose () 5. Other
Date Collected Time Collected MIL TIME	Hospital of Birth Use Code Hospital Collected Use Code Medical Record Number	MOTHER'S INFORMATION	
Phone Spec. Collected By	Name Address City State Zip Code	Hearing	
Name Address City State Zip Code	City State Zip Code TennCare: () 1. Yes () 2. No	Date: ADR DAE	R Ear L Ear Pass Refer Pass 1 Refer 2
State Zip Code	Phone Mother's Social Security No. County of Resid	Not performed 0 Declined 3 Discharged 4	RISK FACTORS 1 2 3 4 5
TENNESSEE DEPT. OF HEALTH, LABORATORY SERVICES 630 HART LANE, NASHVILLE, TENNESSEE MICHAEL W. KIMBERLY, DR. PH., DIRECTOR		SPECIMEN CONTROL NUMBER D-327901	DATE REC'D/LAB NO. LAB UNSAT:

GALACTOSE RESULTS ARE BASED UPON THE ASSUMPTION THAT THE INFANT HAS HAD LACTOSE FEEDING. UNLESS THE TRANSFUSION IS MARKED, THE ASSUMPTION IS THAT THE INFANT HAS NOT BEEN TRANSFUSED.

Exp. 9/2007 Form PH 1582 REV. 5/04

3. The back of the form lists the definitions for Risk Factors for hearing loss.

Back

Hearing Screening Form Instructions

NOTE: Do not delay sending the newborn screening blood specimen to the TN State Laboratory.

To report the hearing screening results on this newborn, complete the demographic section of this lab slip prior to detaching this page.

When the hearing screening is completed, check the appropriate boxes.

Please complete this voluntary hearing screening reporting form on all infants where screening was attempted.

This report can be mailed with other newborn screening blood specimens or mailed separately to:
Newborn Screening, Department of Health, Laboratory services, P.O. Box 305130, Nashville, TN 37230-5130.

RISK FACTORS FOR HEARING LOSS

If an infant meets one or more of the following risk factors listed below, check the corresponding box(es) on the front of the form.

1. Neonatal indicators—Hyperbilirubinemia requiring transfusion; ventilation >48 hours; illness or condition requiring NICU >48 hours; ECMO; OTOTOXIC MEDICATIONS.
2. Stigmata or other findings associated with a syndrome known to include hearing loss.
3. Family history of permanent childhood hearing loss.
4. Craniofacial anomalies, including those with morphological abnormalities of the pinna and ear canal.
5. In-utero infections such as cylomeglia virus, herpes, toxoplasmosis, syphilis, or rubella.

Instructions to complete hearing forms:

Item on Form	Definition	Reason	Special Notes
Data of test	Record date of hearing screening	Record the final hearing screening prior to discharge. This should be the LAST test prior to discharge when possible.	Date may be the different than the date of collection for the blood specimen. If infant receives an additional rescreen prior to discharge and the initial hearing REFER results have already been submitted, complete an additional form and submit the follow-up results.
___ ABR ___ OAE	___ ABR for Automated Auditory Brainstem Response) method. ___ OAE for Otoacoustic Emissions (OAE) using the Distortion Product Otoacoustic Emissions (DPOAE) or the Transient Evoked Otoacoustic Emissions (TEOAE) method. Check OAE and ABR if both tests were conducted.		
Ear – Right / Left	Mark results under appropriate ear.		
___ Pass ___ Refer	___ Pass if the test that indicates the hearing is within normal limits. ___ Refer if the infant does not pass and needs to be referred for further testing OR if unable to complete testing		

Item on Form	Definition	Reason	Special Notes
Reason Test Not Completed <input type="checkbox"/> Not performed <input type="checkbox"/> Declined <input type="checkbox"/> Discharged	<input type="checkbox"/> Not performed (unable to do test, equipment not functioning, infant's condition not appropriate for screening at this time) <input type="checkbox"/> Declined (family chose not to have screen) <input type="checkbox"/> Discharged (infant missed or transferred to another facility prior to screening)		Unsuccessful screen – noise, activity, etc. – Report as Refer Missed infant – report as Not Performed Infant death – report as Not Performed and WRITE on form. Equipment failure
Risk Factors 1-5	Mark all boxed that apply. 1. Neonatal Indicators – Hyperbilirubinemia requiring transfusions; ventilation >48 hours; illness or condition requiring NICU >48 hours; ECMO; ototoxic medications. 2. Stigmata or other findings associated with a syndrome known to include hearing loss. 3. Family history of permanent childhood hearing loss. 4. Craniofacial anomalies, including those with morphological abnormalities of the pinna and ear canal. 5. In-utero infections such as cytomegalia virus, herpes, toxoplasmosis, syphilis or rubella.	Risk Indicators identify infants that may be at risk for progressive, delayed onset or acquired hearing loss.	Risk factors are listed on the reverse side of the HEARING page of the blood spot form that is labeled with an ear. Identification of high risk infants will enable the provider to conduct hearing evaluation on a more frequent schedule

**Risk Indicators Associated with
Permanent Congenital, Delayed-Onset, or Progressive Hearing Loss in Childhood**

Joint Committee on Infant Hearing (JCIH) 2007 Position Statement
(Revised October 2007)

Risk indicators that are marked with a “§” are of greater concern for delayed-onset hearing loss.

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



STATE OF TENNESSEE
DEPARTMENT OF HEALTH
WOMEN'S HEALTH AND GENETICS
NEWBORN SCREENING PROGRAM
630 HART LANE
NASHVILLE, TENNESSEE 37243
PHONE (615) 262-6304 FAX (615) 262-6458

NEWBORN SCREENING REFUSAL

Baby's Name: _____

Baby's Date of Birth: _____

Hospital of Birth: _____

Mother's Name: _____

Mark one:

Newborn Screening Blood Test

Newborn Screening Hearing Test

Both

I, _____, have been informed of the need for a newborn hearing screen and newborn screening blood testing which includes phenylketonuria (PKU), congenital hypothyroidism, galactosemia, congenital adrenal hyperplasia, and hemoglobinopathies, metabolic/genetic defects that could result in mental retardation or physical dysfunction as determined by the health department.

I have been informed state law requires these tests and that violation of the blood test is a misdemeanor.

Nonetheless, I refuse this test at this time for my newborn baby, _____ because such tests conflict with my religious tenets and practices.

Under penalty of perjury pursuant to T.C.A. 68-5-403, I affirm such refusal because of a conflict with my religious tenets and practices.

Parent Signature: _____

Date: ____/____/____

Witness Signature: _____

Date: ____/____/____

This form shall be retained in medical record for the period of time defined by the hospital or provider policy.



**Tennessee Department of Health
Newborn Hearing Screening
Hospital and Birthing Center Questionnaire**

Phone 615-262-6160

Jacque Cundall by fax to 615-262-6159

Name of Hospital:

Hospital Number:

Date of Evaluation:

TDH NHS staff :

Hospital Newborn Hearing Screening Contact:

Hospital staff participants:

Other participants:

A. Screening Equipment

**Yes
/No**

Comments

What method of hearing screening do you use?

What equipment manufacturer do you use?

What challenges have you experienced with the equipment?

Are you satisfied with the services you have received from the manufacturer?

If more than one nursery, do you have equipment for each area?

Is your equipment reviewed/calibrated annually by staff or manufacturer?

What is the cost of disposable supplies per infant?

B. Screening Personnel/Staff Training

**Yes
/No**

Comments

Do you have written policy and procedures for screening?

Do you have written policy and procedures for training?

Does your staff receive CEU's for training?

Does your facility contract for hearing screening services?
Example: private practice ENT, Audiologist, or an Agency specializing in hospital hearing screening

Who conducts the actual hearing screening?

C. Screening Environment	Yes /No	Comments
Do you use a designated test site?		
Do you have an alternate test site?		
Does your test site have a controlled noise level?		
Do you use a sign to indicate “screening in progress”?		
Do you have a back-up plan if equipment out of order?		
D. Screening procedure	Yes /No	Comments
Does staff have ready access to written screening procedures?		
Do you screen both ears?		
Do you use a two-step method?		
How many times do you repeat a screen before it is documented as refer? (Maximum #)		
When are infant’s screened?		
Do you have an infection control procedure for screening?		
How do you documents id test refused or test not done?		
Is outpatient testing done at this facility?		
E. Referrals	Yes /No	Comments
How do you notify parent of results?		
How do you identify infants with a risk factor for hearing loss?		
How do you provide instruction on where to obtain retest?		
Do you schedule a return appointment date for retest?		
Do you help families schedule diagnostic appointments to outside audiologic providers?		
Do you have a follow-up procedure to check back with families to make sure the infant was retested?		
Do you give parent NHS brochure “Your Baby has been Referred...”		

F. Protection of infant's and Families' Rights	Yes/ No	Comments
Are parents required to sign a consent for hearing screening?		
Are parents required to sign a medical release of information?		
Do you have a plan for non-English speaking families?		
G. Documentation and Reporting	Yes/ No	Comments
Do you have a written procedure for reporting results?		
Report on blood spot form?		
Report on Hearing Only form?		
If more than one department is involved in newborn blood spot collection and hearing screening , how do you coordinate the documentation of the results on the lab slip?		
Do you have an in-hospital documentation and tracking system?		
Do you keep a hearing screening log (include missed and refused)?		
H. Communication with Parents and Families	Yes/ No	Comments
How do you inform parents about your hearing screening program prior to delivery?		
Do you have a policy for prenatal teaching?		
Do you have a policy for in-patient teaching?		
Do you have a policy for discharge teaching?		
How do you notify the parent/caregiver of results? Circle all that apply: Written - prior to discharge (card/note/letter) Verbal - prior to discharge (nurse, screener, other) Letter - after discharge (letter to home) Phone – after discharge (call to family home) Other		

Do you advise parent/guardian of hearing loss risk factors that may indicate need for periodic retesting (even if passed first test)?		
I. Determination of Infants at Risk for progressive, late on-set, acquired Hearing Loss	Yes/ No	Comments
Do you assess each child for hearing loss risk factors?		
Do you document these?		
J. Quality Assurance	Yes/ No	Comments
What type of tracking system for monitoring and quality assurance?		
What kind of reports can you generate?		
What kind of reports would you like to have from the TDH NHS program? (By infant name, total numbers only) See below for reports that will be available from the state.		
How frequently (monthly, quarterly, annually)?		
Tennessee Newborn Hearing Screening Hospital Reports Available in September 2005		
% of infants screened during birth admission		
% of infants screened prior to one month of age (goal 95%)		
% of infants who did not pass hearing screen (goal refer rate <4%)		
% of screens reported to TN Dept. Health on blood spot form		
% of screens reported to TDH with missing/incomplete information		
% infants who received follow-up testing (re-screen or diagnostic)		
Report names of infants screened or names of infants with no screening reported.		

General Newborn Hearing Screening Program	Yes/ No	Comments
Do you use any of the following TN NHS materials?		
Your New Babies Hearing Brochure - Blue		
Your baby's Hearing Suggests a Referral Brochure - Pink		
Talking with Parents about Hearing Loss Brochure - Orange		
Why Bother Hearing Screening and Hearing Tests -Green		
Hearing Only Form - Grey		
Posters		
Would you be interested in the TN newborn Hearing Screening program provide a regional training?		
What topics would benefit your practice?		
Does your hearing screening equipment have the capability of reporting results electronically? By disk? By internet?		
Does your facility have the capability of reporting results per the Web? Electronically? Data entry		
QUESTIONS FOR TN Newborn Hearing Screening Program		



STATE OF TENNESSEE
 DEPARTMENT OF HEALTH
 WOMEN'S HEALTH & GENETICS
 NEWBORN HEARING SCREENING PROGRAM
 630 HART LANE
 NASHVILLE, TENNESSEE 37216
 PHONE 615-262-6160 FAX 615-262-6159



NEWBORN HEARING SCREENING ORDER FOR MATERIALS

The Tennessee Universal Newborn Hearing Screening Program materials are available for hospitals, providers and others which are free of charge. You are encouraged to share materials with families of child-bearing age, pregnant women and parents of newborns. The brochure explains why and how newborn hearing screening is performed, and what the results mean. Materials contain contact information for parents to obtain services.

Please complete the information below:

Hospital or Provider Name: _____

Send Attention: _____

Address: _____

Phone: (____) _____

Indicate number of materials requested in appropriate boxes. Brochures and Forms come in packs of 100.

BROCHURES:

- | | | |
|--------------------------|--------------------------|---|
| <small>English</small> | <small>Spanish</small> | |
| <input type="checkbox"/> | <input type="checkbox"/> | Your New Baby's Hearing (for expectant moms and their obstetricians) English & Spanish |
| <small>English</small> | <small>Spanish</small> | |
| <input type="checkbox"/> | <input type="checkbox"/> | Your Baby's Hearing Screening Suggests a Referral (for parents of an infant that did not pass the screen), English & Spanish |
| <input type="checkbox"/> | | Talking with Parents about Hearing Loss (for physicians, hearing screeners, nurses, audiologists) English |
| <input type="checkbox"/> | | Why Bother with Hearing Screens and Hearing Tests? (for pediatricians, family practitioners, and other professionals and parents) English |

POSTERS:

- | | | |
|--------------------------|--------------------------|---|
| <small>English</small> | <small>Spanish</small> | |
| <input type="checkbox"/> | <input type="checkbox"/> | No Child Is Too Young To Test (8"x17") (picture of infant) English and Spanish |
| <input type="checkbox"/> | | No Child Should Miss Out On Life Because of Hearing Loss (8"x17") (picture of adolescent) English |

AUDIOLOGIST, MEDICAL PROVIDER AND INTERVENTION RESOURCES AND FOLLOW-UP REPORTS:

- | | |
|--------------------------|--|
| <input type="checkbox"/> | Report of Infant Hearing Rescreen or Diagnostic Evaluation (to be used by physicians and audiology providers to report results to State) |
| <input type="checkbox"/> | Tennessee Newborn Hearing Parent Resource Packet (for parents of children who have been confirmed with a hearing loss) |

REPORTING FORMS FOR HOSPITALS:

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Hearing Screening Only form and instructions for use. These forms are to be used by hospitals and birthing facilities to submit hearing screening results on newborns who received a hearing screening after the newborn screening blood collection specimen had been submitted to the TN State Lab. Please document the specimen control number (SCN) from the previous blood specimen form to assure a link to the initial screening. |
|--------------------------|---|

PROTOCOLS/GUIDELINES:

- | | |
|--------------------------|--|
| <input type="checkbox"/> | TN Hospital and Birthing Center, Newborn Hearing Screening Protocols |
| <input type="checkbox"/> | TN Early Intervention, Newborn Hearing Follow-Up Protocols |
| <input type="checkbox"/> | TN Pediatric Audiologic Assessment and Amplification Guidelines |
| <input type="checkbox"/> | TN Directory of Pediatric Hearing Screening Audiological Diagnostic and Early Intervention Providers |

Fax form to: 615-262-6159 or Mail to: Address above



Introducing the Newborn Hearing Screening Training Curriculum

What is it?

The newborn Hearing Screening Training Curriculum (NHSTC) is a training tool in DVD format, developed for hospital based screeners. It is meant to be used as a competency based, standardized training, geared for the inexperienced screener. It covers all of the critical information important for conducting quality and efficient newborn hearing screening.

What does it consist of?

There are 8 sections or modules, covering the following aspects of the newborn hearing screening process:

- Section 1-Introduction to Newborn Hearing Screening
- Section 2-Getting Ready to Screen
- Section 3-Screening with Otoacoustic Emissions (OAEs)
- Section 4-Screening with Automated Auditory Brainstem Response (A-ABR),
- Section 5-Completing the Screening Process
- Section 6-Communicating with Parents and the Medical Providers
- Section 7-Screening Babies with Risk Indicators
- Section 8-Outpatient Screening/Re-screening
- Resource Disc

In its entirety, the curriculum will take approximately 70 minutes to complete. Each section lasts between 5 and 13 minutes and contains audio, video and pictures to accommodate a variety of learning styles. At the end of each section there is a test, which can be used to fulfill hospital competency requirements.

In addition, there is a resource disc which has a lot of information that can be useful for both the screener and the program manager.

For screeners:

- scripts for screeners to use when communicating with parents in both English and Spanish (these should be printed and practiced with a partner)
- glossary with definitions
- links to related websites
- Frequently Asked Questions (FAQs) that parent's may ask

For program managers:

- competency check lists for "hands-on screening" techniques
- test questions, answers and a test answer form
- JCIH 2007 Position Statement and program checklist

What it does *NOT* consist of?

Although NHSTC will provide the screener with what they need to learn about the screening process, it will not mean that a screener can competently operate neither the equipment nor an infant independently. Prior to screening babies, it is always recommended that a new screener is able to demonstrate the important “hands-on” skills needed for efficient screening. This can be accomplished under the supervision of the program manager or a designated experienced screener. In the resource section, competency check lists are available to validate and document these skills.

How should it be used?

The first 6 sections are considered part of the core or required curriculum, however, if the hospital is not screening with OAEs, Section 3 can be skipped, and if the hospital is not screening with automated ABR, Section 4 can be skipped. If both OAE and automated ABR are being used to screen babies, the screener should watch both sections. Sections 7- Screening Babies with Risk Indicators and Section 8-Outpatient Screening/Re-screening are considered optional depending on whether the hospital has high-risk infants or a Neonatal Intensive Care Unit (NICU) and an outpatient screening program. In addition, each section contains a lot of information; therefore, for optimal learning, it is recommended that the modules be watched in two or more separate sessions, not all at one time.

About

- The NHSTC is a collaborative project between *the National Center for Hearing Assessment and Management (NCHAM)* and *the EAR Foundation of Arizona (EFAZ)*
- Project Team: Randi Winston, Au.D., Lylis Olsen, MS, MPH, Karen Ditty, Au.D., Diane Sabo, Ph.D., Marlene Hesley, LPN
- Special thanks and recognition to: Terry Foust, Au.D., Karen Muñoz, Ed.D., all of our reviewers, the pilot states, Willowbrook Methodist Hospital of Houston and Ryan Ditty
- DVD Authoring by Daniel Ladner
- Funded by NCHAM and Maternal Child Bureau (MCHB)
- Distributed by NCHAM
- These materials do not intend to endorse any particular products or hearing screening systems.



Hearing Screening and Audiology Acronyms

AAA	American Academy Audiology	MRI	Magnetic Resonance Imaging
ABR	Auditory Brainstem Response	nHL	Normed Hearing Loss
AN/AD	Auditory Neuropathy/Dysynchrony	NHS	Newborn Hearing Screening Program
ANSI	American National Standards Institute	NU-CHIPS	Northwestern University Children's Perception of Speech
APD	Auditory Processing Disorder	OAE	Otoacoustic Emissions
ASA	American Society of Anesthesiology	PSI	Pediatric Speech Intelligibility Test
ASHA	American Speech and Hearing Association	REAR	Real Ear Aided Response
ASL	American Sign Language	RECD	Real Ear to Coupler Difference
ASSR	Auditory Steady State Response	SAT	Speech Awareness
BC	Bone Conduction	Threshold	
BTE	Behind-the-Ear	SHARP	Situational Hearing Aid Response Profile
CIC	Completely-in-the-Ear	SNHL	Sensorineural Hearing Loss
CM	Cochlear Microphonic	SRT	Speech Reception Threshold
CPA	Conditioned Play Audiometry	TDH	Tennessee Department of Health
CROS	Contralateral Routing of Signal	TEIS	Tennessee Early Intervention System
CSS	Children's Special Services	TEOAE	Transient Evoked Otoacoustic Emissions
CT	Computed Tomography Scan	TIPS	Tennessee Infant Parents Services
DAI	Direct Audio Input	TREDS	Tennessee Technology Assistance and Resources for Enhanced Deaf/Blind Supports
dB	Decibels	TROCA	Tangible Reinforcement Operant Conditioning Audiometry
DNA	Dioxyribonucleic Acid	VRA	Visual Reinforcement Audiometry
DPOAE	Distortion Product Otoacoustic Emissions	VROCA	Visual Reinforcement Operant Conditioning Audiometry
FDA	Food and Drug Administration	WIPI	Pediatric Speech Intelligibility Test
FERPA	Federal Education Rights and Privacy Act	WNL	Within Normal Limits
FM	Frequency Modulation	WRS	Word Recognition Scores
HIPAA	Health Insurance Portability and Accountability Act		
HL	Hearing Loss		
Hz	Hertz		
IDEA	Individuals with Disabilities Education Act		
ITC	In-the-Canal		
ITE	In-the-Ear		
JCAHO	Joint Commission on Accreditation of Healthcare Organizations		
JCIH	Joint Commission on Infant Hearing		
LEA	Local Education Agency		



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