



- EARLY HEARING DETECTION AND INTERVENTION -

GUIDELINES FOR THE ORGANIZATION AND ADMINISTRATION OF UNIVERSAL NEWBORN HEARING SCREENING PROGRAMS FOR OUT-OF-HOSPITAL BIRTHS

Original Publication Date: May 2008

Last Revision Approved: November 2023

INTRODUCTION

This document provides recommended guidelines for newborn hearing screening programs for midwives delivering newborns in out-of-hospital birth settings, including home births and non-hospital/freestanding birth centers. Many Minnesota midwives currently have access to screening equipment and provide newborn hearing screening. For midwives who do not have access to hearing screening equipment, Minnesota Statute 144.966¹ requires that all health professionals attending a birth outside of a hospital provide both oral and written information to parent(s)/guardian(s) about the importance of hearing screening and where they can have their infant screened. Some midwives also offer newborn hearing screening to families who are not clients in their practice.

Because of the importance of early identification of hearing loss, all screening, follow-up, and tracking procedures must, at a minimum, be consistent with national Early Hearing Detection and Intervention (EHDI) guidelines and current Minnesota Department of Health (MDH) Newborn Screening Program

recommendations. Additional resources are available from the newborn screening program to assist midwife practices with specific program development and management issues, such as training, supervision, equipment options, and quality assurance.



BACKGROUND

The goal of an EHDI program is to promote communication and access to language from birth for

Newborn Screening Program / (800) 664-7772

www.health.state.mn.us/newbornscreening

<https://www.health.state.mn.us/people/childreneyouth/improveehdi/state.html>

all children through the early identification of hearing thresholds outside the typical range and the initiation of appropriate intervention services. Typical hearing is a range of sound levels measured in decibels (dB HL) between 0 dB HL and 15 dB HL that ensures all the sounds of spoken language are consistently audible. Newborn hearing screening and follow-up plays a critical role in the EHDI process by identifying newborns who are at risk for hearing loss and connecting them with diagnostic, support, and intervention services. Without EHDI, infants who are deaf or hard of hearing may experience delays in a variety of developmental areas, including vocabulary, articulation, intelligibility, social adjustments, and behavior.

National standards specify that screening should be complete as soon as possible but at no later than 1 month of age; hearing thresholds outside the typical range should be clinically diagnosed as soon as possible but at no later than 3 months of age; and intervention should be initiated as soon as possible but at no later than 6 months of age (JCIH, 2007, 2019).

Early identification and intervention can substantially reduce or even entirely eliminate the developmental delays that too often stem from a late diagnosis of hearing loss. For many children who are deaf or hard of hearing, early identification and intervention enables them to perform at the same level on spoken language assessments as their hearing peers with typical hearing and similar cognitive ability (Yoshinaga-Itano, Sedey, & Coulter, 1998).



Passing the newborn hearing screening does not guarantee that hearing will remain typical, nor does it eliminate the need to monitor the infant's or child's language development. Audiological re-evaluation during early childhood is recommended when parent(s)/guardian(s) are concerned about hearing and/or speech/language development, as well as for those infants with risk factors for emergent hearing conditions.

CHILD-AND FAMILY-CENTERED COMMUNICATION

[Minnesota statute 144.966¹](#) requires midwives to present information to parent(s)/guardian(s) prior to performing the hearing screen that covers the following topics:

- Potential risk and effects of hearing loss
- Benefits of early detection and intervention
- Nature of the screening procedure
- Applicable cost of screening procedure

[Minnesota statute 144.125²](#) provides parental options regarding screening and storage of hearing test results.

- Parent(s)/guardian(s) who choose to refuse or delay hearing screening must complete and sign the [Parental Refusal or Delay of Newborn Screening form](#).³ The signed form must be entered into the child's medical record and submitted to MDH.
- Parent(s)/guardian(s) who request that their infant's newborn hearing screening results be destroyed after notification must complete and sign the [Directive to Destroy Newborn Screening Blood Spots and Test Results form](#).⁴ The signed form must be submitted to MDH. If no destruction request is received, hearing screening results are kept for 18 years.

Best practice includes providing the following information to parent(s)/guardian(s) along with their infant's hearing screen result:

- The [Newborn Hearing Screening Fact Sheet](#),⁵ which is available to order on the [MDH Newborn Screening Materials and Resources](#)⁶ webpage at no cost, provides basic parental information. Information on [Risk Factors for Early Childhood Hearing Loss](#).⁷
- Possibility of late or progressive onset of hearing loss, including otitis media.
- [Developmental Milestones for Speech, Language, and Hearing](#).⁸

Per JCIH, screeners must clearly communicate that both ears must pass in the same screening session to have a passing outcome. Parent(s)/guardian(s) should be counseled that follow-up testing is needed for all non-passing outcomes and that follow-up testing must be completed for both ears.

Use of a [Teach Back Tool](#)⁹ is recommended to ensure that families of infants who need outpatient follow-up clearly understand what next steps are needed.

PERSONNEL PERFORMING HEARING SCREENING

Screening may be performed by anyone who has been properly trained. Hearing screeners benefit from direct access to audiological consultation in order to address screening criteria, quality assurance, follow-up assessment, and intervention services.

Training qualified screeners

Ensuring the skills and competencies of all screeners is critical for screening programs. Training qualified screeners is an ongoing process and should be based on current best practice procedures as reported in professional literature and recommended by the newborn screening program. Training typically includes three phases: initial training and demonstration of competency and skills, ongoing quality assurance, and annual refresher training.

Initial training often involves the use of multiple resources over several days. Initial training and demonstration of competency and skills shall include the following, at a minimum:

- ✓ Completion of orientation, including:
 - Infection control policies and procedures
 - Infant security procedures
 - Cultural sensitivity
- ✓ Completion of instructional training for newborn hearing screening
 - Benefits of early detection of hearing loss
 - Hearing screening equipment use and care instruction
- ✓ Knowledge of hearing screening policy and procedure:
 - Documentation of screening results
 - Communicating screening results to the infant's parent(s)/guardian(s), infant's primary care provider, and the newborn screening program
- ✓ Demonstration of competency and skills to perform hearing screening should be complete and documented appropriately:
 - Measure the trainee's competency using the [Performance-Based Criterion Checklist](#)¹⁰ or a similar performance evaluation tool.
- ✓ Ongoing quality assurance of screeners shall include the following, at a minimum:
 - Refresher training should be completed annually, with individual trainings available as needed. Refresher trainings should measure the trainee's competency using the [Performance-Based Criterion Checklist](#)¹⁰ or a similar performance evaluation tool.
 - Opportunities for periodic peer observations are made available for new screeners.
 - If there are performance concerns, quality improvement will be utilized to review hearing screening data for each screener to determine their effectiveness (e.g., number of screens and number of refer/did not pass results).

Resources for training may include experienced screeners; local, licensed clinical and educational

audiologists; MDH audiologists; hearing screening equipment manufacturers; national online training modules such as the [Newborn Hearing Screening Training Curriculum](#)¹¹ offered by the National Center for Hearing Assessment and Management (NCHAM); or other online resources as recommended by the MDH Newborn Screening Program. Each midwife may select appropriate staff to carry out the hearing screening and related duties.

HEARING SCREENING EQUIPMENT

Screening programs must use objective physiological screening methods such as automated auditory brainstem response (AABR) or otoacoustic emissions (OAE). OAE technologies include distortion product otoacoustic emissions (DPOAE) and transient evoked otoacoustic emissions (TEOAE). AABR and OAE do not require a behavioral response from the infant and have proven to be effective screening measures for newborns. All hearing screening equipment must meet technical specifications, calibration standards, and safety standards. A quality screening program benefits from incorporating new and improved evidence-based technologies and procedures as they become available.

Stimulus parameters

Sample stimuli: TOAEs should be measured in response to a click at approximately 80-84 dB peSPL. DPOAEs should be measured in response to a series of paired tones (f1 and f2), with a ratio of 1.22 at a moderate level, where $L1/L2 = 65/55$ dB SPL (AAA, 2012; Abdala, Winter, & Shera, 2017).

Newborn screening AABRs are typically evoked using click stimuli at 30 to 35 dB nHL at a moderate stimulus rate. Non-automated ABR screening is only appropriate if performed by audiologists who have expertise in ABR testing and interpretation in the newborn population.

Default stimulus parameters of both OAE and AABR equipment should be reviewed by skilled professionals, such as a consulting audiologist or MDH audiologist, to ensure they are appropriately set

or to adjust them to be in accordance with clinically monitored carefully to maximize sensitivity and accepted national practices (Ontario Infant Hearing Program, 2019). The equipment vendor will need to complete an annual equipment calibration. Screening staff should conduct regular equipment performance quality checks. A “test mode” is sometimes build into the equipment.

Criteria for a passing result

Pass/did not pass criteria need to be selected and monitored carefully to maximize sensitivity and specificity (Gorga et al., 1997). In most cases, pass/did not pass criteria are already preset into the hearing screening equipment by the manufacturer. When hearing screens are administered, a pass or did not pass result should automatically appear. There should be no interpretation of results by the hearing screener at the time of the screen. Pass/did not pass criteria should be reviewed regularly by a consulting audiologist or MDH audiologist and should be in accordance with clinically accepted national practices. Some equipment will use the terminology “pass/fail”. Examples of criteria build into screening equipment are shown below.

OAE

Typical passing criteria for TOAEs include overall reproducibility greater than 50 percent, at least 50 low noise samples collected, stimulus stability of 75 percent or greater, and responses present at least 6 dB above noise floor for at least three of the five test frequencies.



Typical passing criteria for DPOAEs requires absolute response amplitude of at least -6 dB and responses at least 6 dB above the noise floor at three or more of the test frequency bands.

AABR

Screening AABR pass criteria for newborns typically requires repeatable Wave V-evoked responses to clicks at ≤ 35 dB nHL for each ear, within specific latency parameters.

HEARING SCREENING PROTOCOL

The following screening protocols have been developed by local experts and are based on nationally accepted guidelines put forth by the Joint Committee on Infant Hearing (JCIH) in the Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs (JCIH, 2019). They have been tailored to fit Minnesota's system of care to help ensure that every infant receives quality screening and follow-up throughout the state. See details about the [Hearing Screening Result and Follow-up Process](#)¹² and a sample [Newborn Hearing Screening Flowchart for Out-of-Hospital Births](#),¹³ which outlines the follow-up process.

Initial hearing screening

The initial hearing screen is the first screen performed on a newborn. It is best performed after 12 hours of age or ideally between 24 hours and 14 days of age. The screen may be performed before 12 hours of age if needed; however, early screens have a higher refer/did not pass rate due to residual birthing debris in the ear canal. Infants who do not pass the initial hearing screen should ideally be scheduled for rescreening with their midwife provider as soon as possible within one to two weeks of the initial screening and no later than 1 month of age. If an infant does not pass the rescreen in one or both ears, an appointment for an audiological evaluation should be scheduled as soon as possible.

The initial hearing screening should consist of no more than two attempts using the same screening technique on each ear—assuming that the infant is calm and quiet and there are neither equipment problems nor environmental interference during either test. The likelihood of obtaining a passing result by chance alone is increased when screening is performed repeatedly, which means a child with hearing loss may go undetected and experience a variety of developmental delays.

Both ears must pass in a single screening session to be considered as an overall passing result. If the screener stops the session and returns to screen at a later time, that is considered a separate screening session. Combining passing results in opposite ears on successive screens does not make a passing result.



Follow-up/documentation of initial hearing screening

[Minnesota statute 144.966](#)¹ requires that hearing screening results should be:

- Documented in the infant's health record.
- Communicated to the infant's parent(s)/guardian(s) both verbally and in writing. The newborn screening program has parent hearing screen result notification forms available in multiple languages. These are available to order at no cost on the MDH [Newborn Screening Materials and Resources](#)⁶ webpage.
- Communicated to the infant's primary care provider in writing and be available at the first clinic visit.

- Reported to newborn screening program within one week of the screen.

Minnesota best practice recommends the following:

- For infants with refer/did not pass results on the initial screen, a follow-up appointment for a hearing rescreening should be scheduled with their midwife provider as soon as possible. Ideally, this evaluation should occur within one to two weeks of initial screening, and no later than 1 month of age.
- The infant's primary care provider (if applicable) and newborn screening program staff should be promptly notified of the date and location of the follow-up rescreen or diagnostic appointment to help facilitate timely services.
- Families of infants who receive refer/did not pass results on the initial newborn hearing screening should be provided with information about the importance of follow-up.

Rescreening

For infants with refer/did not pass results on the initial screen, at least one rescreening at a later time or date is necessary to achieve appropriate referral of infants most at risk to specialty providers. If the infant does not pass the initial hearing screening in one or both ears, they should have a rescreen completed ideally within one to two weeks of initial screening, or at no later than 1 month of age. National guidelines recommend allowing one to two weeks from the time of the initial screen to allow any transient ear conditions to resolve before rescreening.



Both ears must pass a single screening to be considered an overall passing result. Combining passing results in opposite ears on successive screens does not make a passing result.

- Use either AABR or OAE, regardless of which technology was used for the initial hearing screening. JCIH 2019 guidance is that either technology is acceptable for outpatient rescreening of healthy infants. However, it is still preferred to rescreen with AABR if AABR was used for initial screening.
- Rescreen both ears even if only one ear did not pass the initial hearing screening.
- The rescreen should consist of a maximum of a single valid rescreen of both ears in the same session, assuming that the infant is calm and quiet and there are neither equipment problems nor environmental interference during either attempt.

Follow-up/documentation of rescreening

[Minnesota statute 144.966](#)¹ requires that rescreen hearing results should be:

- Documented in the infant's health record
- Communicated to the infant's parent(s)/guardian(s) both verbally and in writing. The newborn screening program has parent hearing screen result notification forms available in multiple languages. These are available to order at no cost on the [MDH Newborn Screening Materials and Resources](#)⁶ webpage.
- Communicated to the infant's primary care provider in writing within one week
- Reported to newborn screening program staff within one week.

Minnesota best practice recommends the following:

- For infants with refer/did not pass results on the rescreening, a diagnostic audiology appointment should be scheduled immediately with the

family, prior to them leaving the rescreening appointment. The primary care provider and newborn screening program staff should be promptly notified by the outpatient screening provider/midwife of the date and location of the diagnostic audiology appointment to help facilitate timely services.

- Families of infants who receive refer/did not pass results on the rescreening should be provided information about the importance of follow-up.



Missed screen/equipment malfunction

If an equipment malfunction or family circumstance prevents the completion of the initial screen as planned, the MDH Newborn Screening Program and the provider working with the infant for routine well child care during the first month of life should be notified in writing that the hearing screening was missed. The primary provider should then assist the family in arranging a time and location for completing the hearing screen. The screen should take place as soon as possible but at no later than 1 month of age. Alternate screening options include other midwife practices with training and screening equipment, audiology clinics, and some primary care clinics.

Refusal/opt out

Refusing newborn hearing screening is a serious decision and could result in long-term developmental delays if hearing loss is not identified early. Parent(s)/guardian(s) should discuss the risks and consequences of this choice with their infant's primary/guardian(s) care provider to make a fully informed decision. Parent(s)/guardian(s) who choose to refuse newborn hearing screening must complete and sign the [Parental Refusal or Delay of Newborn Screening form](#).³ The midwife delivering the newborn is responsible for faxing this form to the newborn screening program and providing copies to the parent(s)/guardian(s) and primary care provider.

Parent(s)/guardian(s) also have the option to destroy newborn screening blood spots and test results and/or hearing screening test results after screening is complete. A copy of the necessary form can be found on the [Newborn Screening Materials and Resources](#)⁶ webpage.

Hospital births

See the [MDH Guidelines for the Organization and Administration of Universal Newborn Hearing Screening Programs in the Well-Baby Nursery](#)¹⁴ and [Guidelines for the Organization and Administration of Universal Newborn Hearing Screening Programs in the Special Care Nursery and NICU](#)¹⁵ for additional information.

Infants needing additional care (hospital admit within 1 month)

Infants identified as needing additional care and admitted to the hospital during the first month of life with conditions associated with potential hearing loss (e.g., hyperbilirubinemia, sepsis) need to have an AABR hearing screen completed prior to discharge even if the baby passed newborn hearing screening prior to re-admission. Because of the high incidence of neural hearing loss associated with significantly elevated bilirubin, these infants should be referred for audiological assessment to include diagnostic ABR measures.

TIMELY CASE MANAGEMENT

The purpose of a hearing screen is to identify infants who need further testing. It is important to remember that a hearing screen is not a diagnostic tool.

EHDI is part of a continuum of care that progresses from parent/guardian education, to screening, to assessment, to amplification (if elected), to educational intervention. Many professionals working in different entities and at different phases of the EHDI process must work together and clearly communicate follow-up steps in order to provide quality care and ensure early access to language and early detection of children who are deaf or hard of hearing. Midwives play a critical role in this process. For infants who do not pass the newborn hearing screening and subsequent outpatient rescreening, timely assessment referrals must be made to audiologists with expertise in pediatric physiological and behavioral assessment and management. See the [Minnesota EHDI Website](#)¹⁶ to locate providers that offer pediatric diagnostic assessments and habilitation services in Minnesota.

The nationally recommended timeline for hearing screening and follow-up is commonly referred to as the 1-3-6 plan. The timeline includes the following benchmarks:

- Screening is complete at no later than **1 month of age**
- Diagnostic audiological assessment is complete at no later than **3 months of age**
- Intervention services, including amplification (if elected), are initiated at no later than **6 months of age**

In order to provide appropriate access to language stimulation and intervention services as soon as possible, the earliest possible age of identification is encouraged for two reasons. First, the infant can receive earlier intervention for auditory and/or visual access to language. Second, objective audiological testing can be completed without sedation during the natural sleep that occurs when newborns are young enough to sleep for prolonged periods of time (JCIH 2019).

Without an adequate follow-up plan, even the best EHDI program is ineffective. Please refer to the current [Early Hearing Detection and Intervention \(EHDI\) Guidelines for Audiologists – Section 1: Guidelines for Infant Audiologic Assessment](#)¹⁷ and [Early Hearing Detection and Intervention \(EHDI\) Guidelines for Audiologists – Section 3: Guidelines for Pediatric Amplification](#)¹⁸ for additional information on recommended best practices.

Follow-up for middle ear effusion

Although persistent middle ear effusion often involves medical referral, which may delay the evaluation timeline several weeks, diagnostic Routine surveillance of all infants for speech and language milestones and signs of hearing loss is audiological evaluation must not be postponed solely due to middle ear dysfunction and should be complete before 3 months of age. The information gained from a diagnostic audiological evaluation is valuable both in determining the extent of the effect of the middle ear condition on the infant's hearing and in identifying whether an underlying sensorineural hearing condition exists, thereby impacting the course of both medical and educational intervention.

Follow-up for Infants with Risk Factors for Early Childhood Hearing Loss (JCIH 2019)

Routine surveillance of all infants for speech and language milestones and signs of hearing loss is a standard part of well-child care provided by the medical home provider. Given that an additional one to two children per thousand will develop hearing loss after birth and by early school age, children who pass newborn hearing screening and have a risk factor for delayed onset or progressive hearing loss should receive more targeted monitoring.

The timing and numbers of hearing re-evaluations for children with risk factors was updated by JCHI, 2019. See [Risk Factors for Early Childhood Hearing Loss](#)⁷ for a detailed list.

- Monitoring for most risk factors begins at 9 months of age.

- Earlier follow-up beginning at three months after occurrence is indicated for children with head trauma, culture positive post-natal infections associated with sensorineural hearing loss (meningitis or encephalitis), caregiver concern.
- Infants diagnosed with congenital Cytomegalovirus (cCMV) infection will need earlier and more frequent audiologic monitoring beginning by one month to detect emerging hearing thresholds outside the typical range or vestibular dysfunction, identify progression of existing hearing levels, and plan appropriate intervention. As of February 2023, Minnesota began screening all infants for cCMV, and will notify and work with primary care providers to ensure that an initial diagnostic audiology assessment is scheduled as soon as possible when an infant has confirmed cCMV. Refer to Audiology Guidelines for Infants with Congenital Cytomegalovirus¹⁹ for additional information.
- Number of newborns whose parent(s)/guardian(s) refused newborn hearing screening
- Number of newborns whose parent(s)/guardian(s) did not refuse screening but who were “missed” (not screened)
- Number of follow-up appointments scheduled for newborns who did not pass the hearing screen or were missed
- Number of newborns screened who were transferred to a hospital
- Number of deceased newborns

At a minimum, methods should be in place for monitoring refer/did not pass rates to ensure effective screening and for monitoring parent/guardian satisfaction with the hearing screening process. An effective hearing screening program should have a refer/did not pass rate of four percent or less after the final hearing screening.

All midwife providers should follow written protocols for newborn hearing screening that include quality assurance practices. A sample policy and procedure document is available from the health department upon request.

The overall goal of quality assurance is information management and accountability to the following stakeholders:

- Infants and their families
- Advocates
- Clinical and educational audiologists
- EHDI managers
- Hospitals
- Medical and educational specialists
- Otolaryngologists
- Primary care providers
- Screeners
- State of Minnesota

QUALITY ASSURANCE/QUALITY IMPROVEMENT

MDH and its external partners work together to ensure and improve the quality of screening programs across the state so that every Minnesota infant receives comprehensive screening and follow-up. Midwives can contribute to quality assurance by monitoring and improving the quality of their own screening performance.

The newborn screening program recommends that midwives establish a quality assurance protocol and be able to report, on an annual basis, critical performance data including, but not limited to, the following:

- Total number of live births
- Number of newborns screened
- Number of newborns who passed the hearing screening
- Number of newborns who did not pass the hearing screening (results by right ear, left ear and both ears)



Ontario Infant Hearing Program (2019). Protocol for Universal Newborn Hearing Screening in Ontario. Version 2019.01. Retrieved June 27, 2023 from https://www.uwo.ca/nca/pdfs/clinical_protocols/IHP%20Screening%20Protocol%202019.01_Final_July_2019.pdf

SELECTED LINKS

1 Minnesota Statute 144.966 <https://www.revisor.mn.gov/statutes/cite/144.966>

2 Minnesota Statute 144.125 <https://www.revisor.mn.gov/statutes/cite/144.125>

3 Parental Refusal or Delay of Newborn Screening form <https://www.health.state.mn.us/people/newbornscreening/materials/legalforms/refusaldelay.pdf>

4 Directive to Destroy Newborn Screening Blood Spots and Test Results form <https://www.health.state.mn.us/people/newbornscreening/materials/legalforms/2020directivetodestroy.pdf>

5 Newborn Hearing Screening Fact Sheet <https://www.health.state.mn.us/people/newbornscreening/materials/hearingscreeningfactsheet.pdf>

6 Newborn Screening Materials and Resources: Education Materials and Forms <https://www.health.state.mn.us/people/newbornscreening/materials/education.html>

7 Risk Factors for Early Childhood Hearing Loss <https://www.health.state.mn.us/docs/improveehdi/riskindicators.pdf>

8 Hearing and Speech Milestones <https://www.health.state.mn.us/docs/people/childreneyouth/improveehdi/hearingspeechmilestones.pdf>

9 Teach Back Tool <https://www.health.state.mn.us/docs/people/childreneyouth/improveehdi/teachback.pdf>

REFERENCES

Abdala, C., Winter, M., & Shera, C. A. (2017). Otoacoustic emissions in infants and children: An updated approach. In A. M. Tharpe, & R. Seewald (Eds.), *Comprehensive handbook of pediatric audiology* (2nd ed., pp. 475-504). San Diego, CA: Plural Publishing, Inc.

Gorga, M.P., Neely, T.S., Ohlrich, B., Hoover, B., Redner, J. & Peters, J. (1999). From laboratory to clinic: A large scale study of distortion product otoacoustic emissions in ears with normal hearing and ears with hearing. *Ear and Hearing*, 18, 440-455.

Joint Committee on Infant Hearing Position Statement (2007), Year 2007 position statement: Principles and guidelines for early hearing detection and intervention. *Pediatrics*, 120, 898-921. <https://doi.org/10.1542/peds.2007-2333>

Joint Committee on Infant Hearing (JCIH). (2019). Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. *Journal of Early Hearing Detection and Intervention*, 4(2), 1-44. DOI: <https://doi.org/10.15142/fptk-b748>

Minnesota Statute 144.966. Early Hearing Detection and Intervention Program. 2007. <https://www.revisor.mn.gov/statutes/cite/144.966>

10 Performance Based Criterion Checklist <https://www.health.state.mn.us/docs/people/childreneyouth/improvehdi/compchcklst.pdf>

11 NCHAM Newborn Hearing Screening Training Curriculum <http://www.infanthearing.org/nhstc/index.html>

12 Hearing Screening Result and Follow-up Process <https://www.health.state.mn.us/docs/improvehdi/hrscrfuwellbaby.pdf>

13 Newborn Hearing Screening Flowchart for the Out-of-Hospital Births <https://www.health.state.mn.us/docs/improvehdi/flowmythsoohbirth.pdf>

14 Guidelines for the Organization and Administration of Universal Newborn Hearing Screening Programs in the Well-Baby Nursery <https://www.health.state.mn.us/docs/people/childreneyouth/improvehdi/guidewbn.pdf>

15 Guidelines for the Organization and Administration of Universal Newborn Hearing Screening Programs in the Special Care Nursery and NICU <https://www.health.state.mn.us/docs/people/childreneyouth/improvehdi/guidenicu.pdf>

16 Minnesota ELDI Website <https://www.health.state.mn.us/people/childreneyouth/improvehdi/providers.html>

17 Guidelines for Infant Audiologic Assessment <https://www.health.state.mn.us/docs/people/childreneyouth/improvehdi/guideehdiaudiol.pdf>

18 Guidelines for Pediatric Amplification <https://www.health.state.mn.us/docs/people/childreneyouth/improvehdi/guideamplification.pdf>

19 Audiology Guidelines for Infants with Congenital Cytomegalovirus <https://www.health.state.mn.us/docs/people/childreneyouth/improvehdi/audiogdlnccmv.pdf>