

Implementation Tip Sheet



Promoting Early Hearing Detection and Intervention

Background

Hearing loss is a common congenital condition. Each year, an estimated 3 in 1,000 infants are born in the United States (US) with hearing loss thresholds in the mild to profound range in one or both ears. At least another 3 in 1,000 will experience permanent hearing loss in later childhood years. Early identification and appropriate early intervention are essential to ensure children with hearing loss achieve optimal language, cognition, and socioemotional outcomes.

Children who are deaf or hard of hearing face a potential developmental emergency if they do not receive fully accessible language exposure during the critical period of development, ages birth to 5 years. This compels pediatric health professionals to ensure an infant or child receives hearing confirmation as quickly as possible followed by appropriate and timely intervention.

The primary care pediatric health care professional and the pediatric medical home model play an important role in supporting optimal, healthy, holistic development of deaf and hard of hearing infants and children. They also play an important role in continuing to monitor hearing status throughout childhood, which includes identifying risk factors that may be associated with late onset changes in atypical hearing thresholds. To support optimal linguistic, socioemotional, and cognitive development, it is critical that pediatric health care professionals conduct screening and provide guidance and referrals regularly as needed.

This tip sheet will provide checklists and screening algorithms for the birth to 6-month period to ensure that screening, surveillance, referral, and intervention can occur at appropriate times for optimal development.

Bright Futures Newborn Hearing Screening Recommendations

The *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, 4th Edition, developed by the AAP, identifies newborn hearing screening as a universal screening recommendation at the Newborn, First Week (3-5 Day), 1 Month, and 2 Month health supervision visits. The initial hearing screening should be completed prior to hospital discharge, or within a week of a homebirth, with the pediatric health care professional being responsible for confirming completion of screening, discussion about the screening results with the family, and taking any follow-up action, as needed. If hospital hearing screens are not conducted, hearing screens can be completed within the pediatric medical home. Other locations to complete hearing screens vary by state and can be determined by contacting your [state Early Hearing Detection and Intervention program](#). During the 4 Month and 6 Month health supervision visits, pediatric health care professionals should complete a risk factor assessment of all infants. Discussion with families need to be culturally and linguistically appropriate for the family. If the results of the risk factor assessment are positive, referrals for diagnostic audiological assessments are recommended.

In the *Bright Futures Guidelines*, 4th Edition, the actions are laid out as follows:

Health Supervision Visit	Action(s)
Newborn	All newborns should receive an initial hearing screening before being discharged from the hospital, or within a week of a homebirth.
First Week (3-5 Day)	If not yet done, hearing screening test should be completed. Hearing screens can be completed within the pediatric medical home. Other locations to complete hearing screens vary by state and can be determined by contacting your state Early Hearing Detection and Intervention program .
1 Month	If not yet done, hearing screening test should be completed. Conduct a risk factor assessment . If positive for risk factors, provide referral to pediatric audiologist for diagnostic audiological assessment.
2 Month	If not done previously, verify documentation of newborn hearing screening results and appropriate rescreening.
4 Month	Conduct a risk factor assessment . If positive for risk factors, provide referral to pediatric audiologist for diagnostic audiological assessment.
6 Month	Conduct a risk factor assessment . If positive for risk factors, provide referral to pediatric audiologist for diagnostic audiological assessment.

EHDI in Practice – A Checklist for Primary Care Pediatric Health Care Professionals

The checklist below provides practical strategies to help you implement the Bright Futures recommendations for newborn hearing screening in your clinical practice.

Helpful Infrastructure for Your Clinical Practice

- Make modifications to [electronic medical record system](#)
 - Add option in patient chart to track results of newborn hearing screen, and when appropriate, rescreening
 - Add option in patient chart to track specialist referrals (if not already included)
 - Add feature to track infants with risk factors for late onset hearing changes (such as developing a diagnostic code)
 - Add feature to document discussion with the family about results and risk factors
- Connect with the [EHDI program in your state](#) to learn about state reporting requirements, resources, and partners
- Use Bright Futures Previsit Questionnaires and Visit Documentation Forms that incorporate newborn hearing screening results, parental concerns, and developmental surveillance ([1 Month Visit sample](#))



First Week
(3-5 Day)

Hospital-based Inpatient Screening Conducted

For all children:

- Obtain the results of the hearing screen directly from the hospital before the baby's first visit at your practice
- [Discuss the results of the hospital hearing screening with the family](#)
- Perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing

If screening results are POSITIVE for atypical hearing thresholds:

- Refer/set appointment for rescreen to be accomplished before the 1 Month health supervision visit (automated auditory brainstem response preferred)
 - If rescreen results are **POSITIVE for atypical thresholds**, ensure that appointment for diagnostic evaluation with a pediatric audiologist is set up to confirm atypical hearing threshold before the 2 Month visit

Hospital-based Inpatient Screening NOT Conducted

- Discuss the importance of hearing screening with family
- Make arrangements *immediately* to have a hearing screening performed and results sent to your clinical practice and reported to state EHDI program as soon as possible

1 Month

For all children:

- If not done previously, review newborn hearing screening results with family and document in patient chart
- Perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing

If rescreen is POSITIVE for atypical hearing thresholds:

- Ensure that appointment for diagnostic evaluation with a pediatric audiologist is set up to confirm atypical hearing threshold before the 2 Month visit

2 Month

- For all children:**
 - If not done previously, review newborn hearing screening results with family and document in patient chart
 - Perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing
- If hearing screen is POSITIVE for atypical hearing thresholds,** ensure that appointment for diagnostic evaluation with a pediatric audiologist is set up
- If appointment for diagnostic evaluation already made,** follow up on results
- If diagnostic evaluation identified the child as deaf or hard of hearing (D/HH):**
 - Discuss the importance of Part C Early Intervention with the family
 - Refer the child to [Part C Early Intervention](#) which specializes in Individualized Family Service Plans for D/HH children
 - Discuss language development approaches with family. Ensure that family is aware of urgency for language development and resources, experts who can discuss same
 - » Discuss technology such as hearing aids and cochlear implants
 - » Discuss language resources and [American Sign Language](#) to support language acquisition, early literacy, cognition, and socioemotional development
 - Discuss the process of learning D/HH diagnosis and support infant bonding
 - Connect family to support and community resources
 - » [State EHDI Program](#)
 - » [Hands & Voices \(H&V\)](#)
 - [H&V Chapters in Your State](#)
 - » [Family Voices](#)
 - [Family to Family Health Information Centers in Your State](#)
 - » [Parent to Parent USA](#)
 - [Parent to Parent USA Program in Your State](#)
 - Discuss how the family can support the needs of the child
 - Recommended referral for medical evaluation, as needed
 - Otolaryngology
 - Ophthalmology
 - Genetics
 - Developmental pediatrics, neurology, cardiology, and nephrology

4 Month

- For any child not identified as D/HH**, perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing
- For children referred to diagnostic audiological evaluation**, confirm completed evaluation
 - If diagnostic evaluation needed but **not completed**, discuss barriers to timely diagnosis and why it is needed (ie: for enrollment in Early Intervention)
- For children identified as D/HH by diagnostic audiological evaluation:**
 - SEE LIST IN ABOVE BOX IN **GREEN FONT**
 - Follow up on results of any medical referrals that have been made
 - Discuss family's challenges or concerns

6 Month

- For any child not identified as D/HH**, perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing
- For children identified as deaf or hard of hearing (D/HH) by diagnostic evaluation:**
 - See list in **GREEN FONT** in 2 Month visit
 - Follow up on results of any medical referrals that have been made
 - Discuss family's challenges or concerns

EHDI in Practice – Algorithms for the Primary Care Pediatric Health Care Professional

The checklist above is one tool to support medical home providers in monitoring and caring for a child's hearing which includes co-management with pediatric specialists such as otolaryngology, audiology, and speech-language therapy. The three algorithms below are additional tools.

In caring for children's hearing, there are different steps that are necessary for different circumstances. Therefore, the algorithms have been divided into the following circumstances: hospital hearing screen is NEGATIVE for atypical hearing thresholds, hospital hearing screen is POSITIVE for atypical hearing thresholds, child is identified as deaf or hard of hearing.

ALGORITHM 1: Hospital hearing screen is NEGATIVE for atypical hearing thresholds

First Week (3-5 Day) Visit

- Obtain newborn hearing screening results from the hospital before the child's first visit at your practice
- Discuss the results of the hospital screening with the family
- Perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing

1, 2, 4, 6 Month Visits

- Perform ongoing surveillance of communication and development and assess if:
 - Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing

If family has concerns, or risk factors for permanent hearing loss are identified, follow steps identified in **Algorithm 2**.

ALGORITHM 2: **Hospital hearing screen is POSITIVE for atypical hearing thresholds**

First Week (3-5 Day) Visit

- Obtain newborn hearing screening results from the hospital before the child's first visit at your practice
- Discuss the results of the hospital screening with the family
- Refer/set appointment for rescreen** to be accomplished before the 1 Month health supervision visit (automated auditory brainstem response preferred)

*Hearing rescreen **NEGATIVE** for atypical hearing thresholds*

*Hearing rescreen **POSITIVE** for atypical hearing thresholds*

2, 4, 6 Month Visits

- Perform ongoing surveillance of communication and development and assess if:
- Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing

1 Month Visit

- Ensure that appointment for diagnostic evaluation with a pediatric audiologist is set up to confirm atypical hearing threshold before 2 Month visit

*Child **IS NOT** identified as D/HH*

*Child **IS** identified as D/HH*

Follow steps for care identified in **Algorithm 3.**

ALGORITHM 3: Child identified as DEAF or HARD OF HEARING

2 Month Visit

- Refer to a **Part C Early Intervention** program which specializes in Individualized Family Service Plans for D/HH
- Discuss language development approaches with family
- Discuss the process of learning D/HH diagnosis and support infant bonding
- Connect family to support and community resources (see list in resources section)
- Discuss how the family can support the needs of the child
- Refer to medical evaluation
 - Otolaryngology
 - Ophthalmology
 - Geneticist
 - Developmental pediatrics, neurology, cardiology, and nephrology

4 Month Visit

- Follow up with family about Early Intervention services and medical evaluation services
- Continue discussion with family about child's communication and development

6 Month Visit

- Perform ongoing surveillance of communication and development and assess if:
- Family has any concerns about child's hearing or language acquisition
 - Any new risk factors have occurred that could impact hearing

BRIGHT FUTURES NATIONAL CENTER

Bright Futures is a national health promotion and prevention initiative, led by the American Academy of Pediatrics (AAP) and supported by the Maternal and Child Health Bureau, Health Resources and Services Administration. The Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, 4th Edition provide theory-based and evidence-driven guidance for all preventive care screenings and well-child visits. Bright Futures content can be incorporated into many public health programs such as home visiting, child care, school-based health clinics, and many others. Materials developed especially for families are also available. Learn more about Bright Futures and get Bright Futures materials by visiting brightfutures.aap.org.

AAP EMDI PROGRAM

The AAP EMDI Program is a component of the National Resource Center for Patient/Family-Centered Medical Home, a cooperative agreement between the Maternal and Child Health Bureau of the Health Resources and Services Administration and the American Academy of Pediatrics. The AAP EMDI Program has three goals

1. Every child receives appropriate and timely screening, and when indicated, diagnostic evaluation following the EMDI guidelines.
2. Every child who is found to be deaf or hard of hearing receives comprehensive and coordinated care within the medical home model that maximizes medical, development, and language outcomes.
3. Pediatricians and health care teams caring for DHH children within the medical home have access to up-to-date resources, guidelines, and strategies beginning from screening and continuing through identification and intervention.

For More Information

Several resources can be helpful for pediatric health care professionals in supporting families with early hearing detection and identification. The following tools and resources can be used to support families and improve service delivery.

Connect with the EHDI Program in your state

[NCHAM list of EHDI coordinators](#)

Resources for Practices

[AAP EHDI Program](#)

[EHDI Quality Improvement Toolkit](#)

[Bright Futures National Center](#)

» [Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents, 4th Edition](#)

» [Bright Futures Tool and Resource Kit, 2nd Edition](#)

» [Bright Futures/AAP Recommendations for Preventive Pediatric Health Care \(Periodicity Schedule\)](#)

[National Resource Center for Patient/Family-Centered Medical Home Website](#)

[National Center for Hearing Assessment and Management](#)

» [EHDI Pediatric Audiology Links to Service \(PALS\)](#)

» [Medical home resources](#)

[Physician's Role in Caring for D/HH Children from Pennsylvania EHDI](#)

Resources for Families

[State EHDI Program](#)

[Hands & Voices \(H&V\)](#)

» [H&V Chapters in Your State](#)

[Family Leadership in Language and Learning \(FL3\) Center](#)

» [Listing of state/territory level family-based organizations and family leaders](#)

[Family Voices](#)

» [Family to Family Health Information Centers in Your State](#)

[Parent to Parent USA](#)

[EHDI Parent Roadmap](#)

[CDC Resources for Families](#)

[National Association for the Deaf](#)

[American Society for Deaf Children](#)



American Academy
of Pediatrics



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