



Innovative and Promising Practices Spotlight



Early Hearing
Detection & Intervention

a program of the American Academy of Pediatrics

A Clinic's Journey to Improving EHDI 1-3-6 Goals

Children's Minnesota is the only health system and Level I Trauma Center in Minnesota (MN) to provide care exclusively to children from birth through young adulthood. The Children's Ear, Nose and Throat (ENT) and Facial Plastic Surgery (ENT clinic) team includes experienced pediatric otolaryngologists, pediatric audiologists, aural rehabilitation specialists, and psychologists with the expertise to evaluate and treat children of all ages that are deaf or hard of hearing—regardless of cause or severity.

In response to the COVID-19 pandemic, the ENT clinic restructured its newborn hearing screening program to limit the number of appointments needed by families, in addition to improving timely diagnosis. Pre-COVID, newborn hearing screening appointments were separated into 2 appointments: 1) Rescreen automated auditory brainstem response screen, and 2) Diagnostic auditory brainstem response evaluation (if needed)¹. To minimize risk, the ENT clinic combined these 2 appointments into 1. Additionally, all newborn hearing screenings are scheduled for a diagnostic auditory brainstem response evaluation. During this scheduled appointment, a repeat screening is completed, if needed. If the infant requires diagnostic testing, this is also completed during the appointment.

RESTRUCTURED CLINIC HIGHLIGHTS²

- Improvement on EHDI 1-3-6 goals and the Joint Committee on Infant Hearing (JCIH) 1-2-3 goals³.
- More children were diagnosed by 3 months of age (82% in 2019, 90% in 2020) and fit with amplification (if eligible) within 1 month of diagnosis (28% in 2019, 35% in 2020). All children are referred to early intervention at the time of diagnosis.
- Communication opportunities are presented by the audiologist and ENT to the family, and the family is provided with information for community groups to support any decisions they might make. Any and all choices for communication are supported by the audiologist and ENT.
- Implementing these changes has improved diagnosis time and reduced the number of infants who are lost to follow-up (18% in 2019, 10% in 2020).



Audiology
ENT & Facial Plastic Surgery



IMPLEMENTATION STRATEGIES

- Limit possible COVID-19 exposures by streamlining appointments where possible for families.
- Identify the need for change and what is most important to the clinic and patient population you serve. Collaborate with primary care providers, audiologists, front desk staff, graduate students, and otologists to identify potential areas of change or improvement to clinic operations. Work with team to identify potential challenges and best strategies for implementing new protocols and procedures.
- Streamline ENT and amplification appointments for families. If it is suspected or diagnosed at the first diagnostic auditory brainstem response evaluation that the baby is deaf or hard of hearing, repeat testing would be completed in conjunction with an ENT appointment. This approach to scheduling limits the number of times the family would have to leave their home.

HOW PEDIATRICIANS CAN SUPPORT THIS WORK

- When a newborn is positive for atypical hearing thresholds or missed hearing screen, encourage families to follow-up with an audiologist and complete the newborn hearing screening as soon as possible.
- Prioritize follow-up for babies who have been referred as a result of their newborn hearing screenings.
- Encourage families to have their child's hearing evaluated when they have any questions or concerns about hearing, speech, or language development. Provide referrals for families to audiology ENT, community organizations, or family-based organizations.
- American Academy of Pediatrics (AAP) Early Hearing Detection and Intervention (EHDI) program resources to support this work:
 - [*EHDI/Bright Futures Implementation Tip Sheet*](#)
 - [*EHDI FAQ Guide for Pediatricians*](#)

EVALUATION AND EXPANSION PLANS

- Children's Minnesota ENT clinic is tracking their 1-3-6 outcomes, time to diagnosis, fitting and undetermined hearing levels in their population. The clinic works with the Minnesota Department of Health to identify areas of need and projects that will improve outcomes for their patients.
- The ENT clinic will continue to schedule all infants who need a referral with explanation regarding their newborn hearing screening or need a longer appointment in case the infant needs diagnostic testing.

BACKGROUND INFORMATION

Children's Minnesota is one of the largest freestanding pediatric health systems in the United States. It has 2 hospitals, 9 primary care clinics, 7 rehabilitation centers, and 9 specialty care sites and serves families from Minnesota along with those from western Wisconsin, and the eastern Dakotas.

- *Type of Practice:* Hospital
- *City/State:* St. Paul, MN
- *Population Served:* Children from birth through young adulthood.



CONTACT INFORMATION

- For more information, contact [*Jessica Novak*](#), Au.D., CCC-A, PASC pediatric audiologist, *Children's Minnesota*.
- For more information about American Academy of Pediatrics (AAP) EHDl program, visit aap.org/ehdi.

¹Automated Auditory Brainstem Response (AABR) screen is an automated dedicated hearing screening device which utilizes a click stimulus typically at 35 dBnHL to provide information regarding the auditory pathway of an infant. This is completed in the hospital soon after birth and as an outpatient if needed. Diagnostic Auditory Brainstem Response (ABR) is a neurologic test of auditory brainstem function which assesses an individual's response to click and tone burst or chirp stimuli. It is an estimate of hearing thresholds. Diagnostic ABR evaluations are completed by licensed audiologists.

²These results are for our well baby populations. They do not include children with extended stays in our NICU, ICC, or CVCC.

³Screen by 1 month of age, rescreen/diagnose/identify by 3 months of age, and enroll in early intervention services by 6 months of age. 1-2-3 goals would shorten the time frame to screen by 1 month of age, diagnose by 2 months of age, and intervention by 3 months of age.



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