

Early Hearing Detection and Intervention Quality Improvement Project EXECUTIVE SUMMARY

Between 2015 and 2017, the American Academy of Pediatrics (AAP) planned and implemented two phases of an Early Hearing Detection and Intervention (EHDI) Quality Improvement (QI) Project supported via funding from the Maternal and Child Health Bureau of the Health Resources and Services Administration.

A total of 11 pediatric practice teams from across the country participated in Phase 1 and Phase 2 of the QI project with Phase 2 adapting the project aims and measures to include more specific guidance and the inclusion of Parent Partners in the practice team composition. Both groups were mentored by a multidisciplinary Expert Group that provided expertise around improving the role of the medical home in Early Hearing Detection and Intervention.

Pediatric practice teams aimed to make practice-based improvements to enhance care across the delivery system and strengthen the role of the medical home within the EHDI system. The following project measures were established:

- 97% or more of all newborns will have documentation of the results of their final newborn hearing screening in their medical records by 6 weeks of age.
- 97% of newborns will have documentation in their medical record that the results of the newborn hearing screening were discussed with the family no later than 6 weeks of age.
- 97% or more of all newborns identified to have risk factors associated with hearing loss will have documentation of those risk factors in their medical record by 6 weeks of age and will have an individualized care plan by 4 months of age.
- 100% of children who do not pass their newborn hearing screening will have completed an audiological evaluation by 3 months of age and documentation will be in their medical record by 4 months of age.

Both phases of the QI project included an in-person Learning Session that brought together pediatric practice teams and experts to ensure understanding of the overall project, to learn about EHDI, and to develop plans to improve EHDI processes in their respective practices. During the project action periods, pediatric practice teams collected data by conducting patient record reviews and completing and submitting monthly progress reports. Both phases of this project saw the identification of several children who did not pass their newborn hearing screen and were referred for an audiological evaluation, as well as several other children and families who met the criteria for having high risk factors for late-onset hearing loss. Pediatric practice teams applied various practice level change measures that resulted in improvements in the systems of care that impacted these children and families.

Pediatric practice teams met monthly with project leaders and others for educational webinars that provided participants the opportunity to learn from faculty about topics specific to hearing loss and deafness, to share team progress, and to receive coaching and mentoring from the project Expert Group and quality improvement advisor. Teams also integrated a series of changes to their practice procedures that resulted in improved care for children and families who did not pass their newborn screen or who had risk factors for delayed onset hearing loss. Many practices developed systems and procedures that encouraged change such as confirmation of the receipt of hearing screen results, reminders to ensure that results were noted in the chart and discussed with families, adaptation of the electronic health record (EHR) system to integrate reminders and checklists, development of processes that more closely managed referrals and follow-up, and engagement of the family voice regarding the care of children who are deaf or hard of hearing.

Because of these changes, pediatric practice teams made significant improvements on the following project measures:

- Ensuring newborns had documentation of the results of their final newborn hearing screening in their medical records by 6 weeks of age. **During the seven cycles of Phase 2 of the project, 731 charts were reviewed for newborns who were 6 weeks of age with an average of 104/charts per cycle. Over 97% of infants had results documented in their records by 6 weeks of age.**
- Ensuring newborns had documentation in their medical record that the results of the newborn hearing screening were discussed with the family no later than 6 weeks of age. **During Phase 2 of the project, a total of 731 charts were reviewed. Significant improvements were made on this measure with 54% discussing screening results with families prior to 6 weeks of age at baseline versus 97.2% at the end of the project.**
- Ensuring newborns identified to have risk factors associated with hearing loss had documentation of those risk factors in their medical record by 6 weeks of age and had an individualized care plan by 4 months of age. **During Phase 2 of the project, teams made significant improvements identifying risk factors, documenting risk factors in the medical record by 6 weeks of age, and creating individualized care plans by 4 months of age. This measure improved from 6.5% documenting risk factors at baseline versus 96.2% at the end of the project. Practice teams also made significant improvement on developing individualized care plans by 4 months of age for at-risk patients. In Phase 2, a total of 36 charts were reviewed at 4 months of age (with an average of 5.1 per cycle), and the development of individualized care plans increased from 25% at Cycle 2 (with no patients identified at baseline) to 100% by the end of the project.**
- Ensuring that children who did not pass their newborn hearing screening had completed an audiological evaluation by 3 months of age and had documentation in their medical record by 4 months of age. **Although the sample size was small, Phase 2 teams reviewed a total of 29 charts over the course of the 7 cycles that were found to require further audiological evaluation and documentation (average of 4.1/cycle.) Improvement on these measures achieved 100% by the end of the project for both audiological evaluation by 3 months of age and documentation of results in the medical records by 4 months of age as compared to 25% at baseline.**

Throughout both phases of the project, pediatric practice teams focused much of their efforts on improving processes related to identifying and documenting risk factors and creating individualized care plans for those newborns at-risk for hearing loss. Because of these efforts, pediatric practice teams made significant improvements around the risk-factor measures. Practice teams implemented several changes to improve performance on these measures, including the following:

- Altering practice electronic health records (EHR) to include prompts and reminders that improved tracking and monitoring.
- Utilizing scripts or checklists that allowed members of the entire practice to consistently discuss screening results and risk factors with families.
- Engaging front office and nursing staff in identifying family risk factors for hearing loss through distribution of risk factor assessment forms in the waiting areas.

The progress that was made by teams in this multi-year, multi-phase QI project, confirms that pediatricians—and their practice teams—play an essential role in supporting the EHDI system of care and ensuring that each child receives appropriate and comprehensive care in the context of a medical home.

For more information about the project and/or the tools and resources utilized in same, refer to:

www.infanthearing.org/quality-improvement/EHDI-QI-Toolkit