

POSITIVE OUTCOMES WITH ENHANCED SCREENING PROTOCOLS

INTRODUCTION

The mandate of Universal Newborn Hearing Screening in all states has dramatically increased the number of infants tested for hearing loss prior to hospital discharge. However, challenges still remain regarding final refer rates and appropriate diagnostic follow-up within the prescribed Joint Committee on Infant Hearing (JCIH) 1-3-6 time-frame recommendations. In order to improve timeliness of hearing loss diagnoses, final refer rates and babies loss to follow up (LTF) must be reduced.

PURPOSE

The purpose of this review is to evaluate the impact of a dedicated newborn hearing screening program on final refer rate and overall rate of loss to follow-up. We hypothesize that implementation of this dedicated program will reduce the overall rate of referral, as well as the number of babies that are loss to follow-up.

METHOD

Data was gathered from 23 hospitals in 4 states, and a review of pre and post refer rates and loss to follow-up rates were compared. Hospital program supervisors, state EHDI coordinators and state database reconciliation were used to collect the data.



FOR THE PURPOSE OF THIS REVIEW A DEDICATED SCREENING PROGRAM INCLUDES THE FOLLOWING:

- Consistent Training for Screening Staff
 - Training by individuals with experience in newborn hearing screening techniques and practices
 - Standardized prepping procedure to prepare infant for screening
 - Competency-based training with hands-on instruction
- Standardized Policies and Procedures
 - Designated timing of screenings based on method of delivery
 - Special considerations for NICU screening
 - Documentation of referrals and transfers
 - Adherence to state-specific reporting requirements including risk factors
- Well-Maintained, Reliable Equipment
 - Hearing screening equipment monitored weekly and calibrated annually
 - Contingency plans in the event of equipment failure
 - Clinically validated sensitivity and specificity
- Family Centered Care Approach
 - The importance of the newborn hearing screening
 - How the screening works
 - Screening results and what they mean
 - Milestones related to speech and language development
 - Follow-up needs including out-patient follow-up options

RESULTS:

STATE A

- The number of in-patient hearing screens not completed went from 188 to 15 post-implementation
- For one year prior to implementation, the total number of confirmed HL was 10. In the year after implementation, there were 15 babies diagnosed with HL
- 6 of 7 hospitals improved overall refer rate. 7th hospital went from 4.28 to 4.30 post-implementation
- 6 of 7 hospitals improved overall LTF

STATE B

- Overall refer rates and LTF rates improved with a dedicated screening program
- One hospital went from LTF of 13.60 pre-implementation to 3.20 in 2016 and 3.90 in 2017. Refer rate pre-implementation was 8.1% with 2016 refer rate 3.5% and 2017 1.8%

STATE C

- In one hospital, the program went from screening completed by the hospital staff, then to a dedicated screening program, and then back to the hospital staff with the following refer variance – 12.3%, 2.7% and back to 7.8%

STATE D

- One smaller rural hospital had refer rates of 14.22% when screening was completed by hospital staff. Post-implementation the refer rate was 4.82%
 - This hospital is in a rural area and the reduction in the number of overall refers who need to travel for follow-up screening has positively impacted early identification for this community

Only raw data was compared without consideration for the size of the hospital or the demographics, including socioeconomic variables. The sampling included a range of hospital sizes in both rural and metro locations.

STATE		PRE	POST
State A (7)	Average refer	9.36%	3.04%
	Range	2.91% to 15.81%	1.72% to 4.30%
	Average LTF	36.32%	23.29%
	Range	15.38% to 65.22%	15.79% to 38.46%
State B (7)	Average refer	4.50%	3.20%
	Range	1.80% to 8.20%	1.8% to 4.4%
	Average LTF	6.8%	4.90%
	Range	1.7 to 13.6%	1% to 14.3%
State C (4)	Average refer	5.76%	2.49%
	Range	2.7 to 12.30%	2.1 to 2.70%
State D (5)	Average refer	7.61%	3.02%
	Range	2.8 to 21.10%	2.12 to 4.82%

CONCLUSION

The data review presented supports the hypothesis that implementation of a dedicated screening program is effective in reducing the overall refer rate and those loss to follow-up. Together these practices can reduce issues that can negatively impact the health of a newborn screening program, and ultimately reduce the overall refer rate and rate of loss to follow up.