

Loss to Follow-Up Trends in N.C.: An EHDI Quality Improvement Initiative

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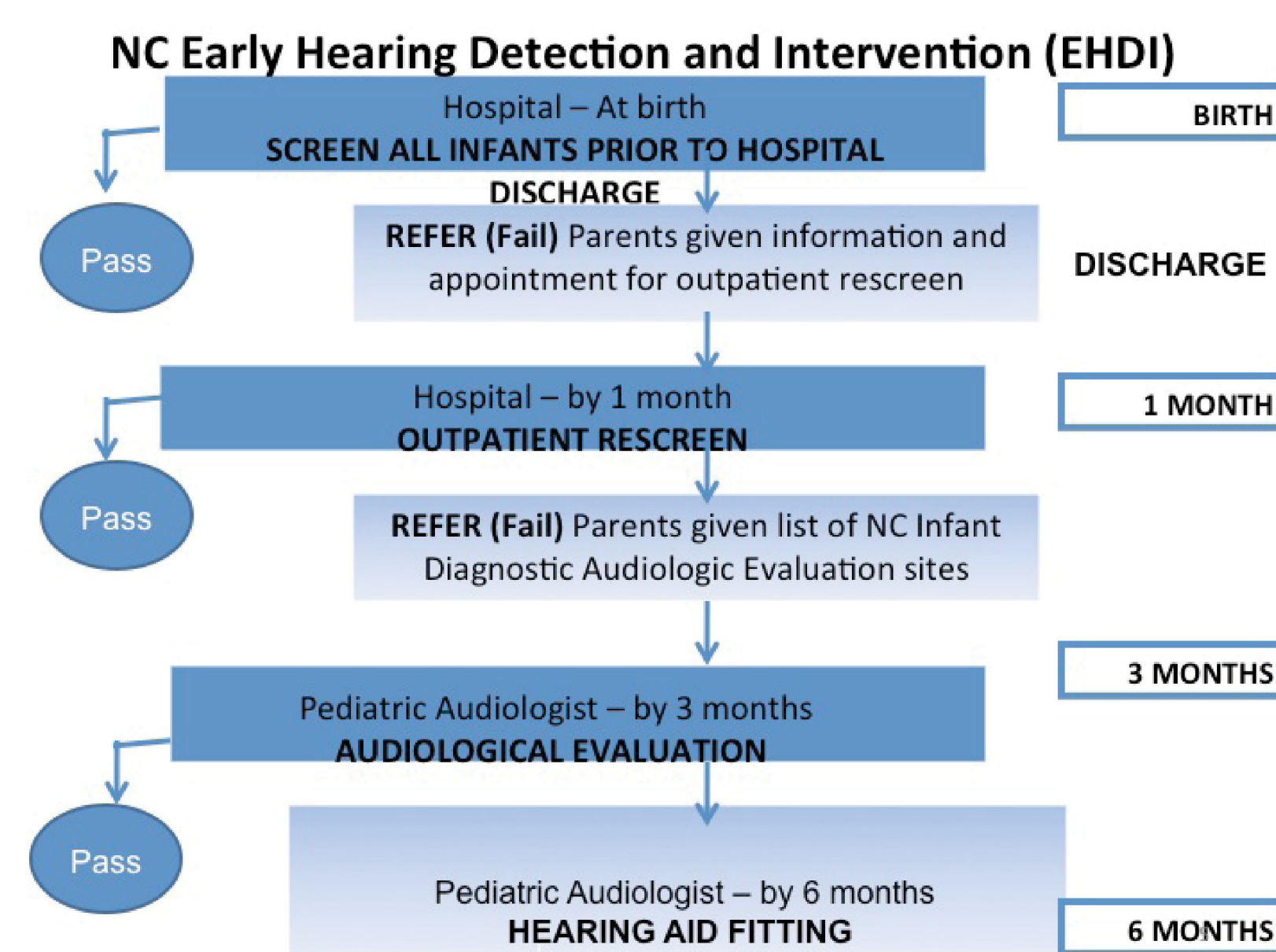
Problem Statement

In 2012, national EHDI Loss to Follow-up (LTFU) was 35.9%.¹

North Carolina EHDI LTFU in that same year was 34.3%.¹ In looking at NC data from recent years, it was evident that one county (County A) accounted for a large percentage of the state's LTFU.³

Background

- The NC newborn hearing screening (NBHS) process requires initial screening be completed prior to hospital discharge. If the infant refers on the initial inpatient screening, an outpatient rescreening should be completed before the child is one month of age (Fig. A).



- 83 of 86 (96%) of NC birthing facilities offer outpatient rescreens for those infants who did not pass newborn hearing screening.
- One large NC county (A) has historically shown high LTFU numbers for infants referring on the initial hearing screening, particularly in comparison to another county (B) that is similar across a number of parameters.



Comparative Analysis Between Counties A and B²

County A

- Population of 990,977
- Median household income of \$55,961
- 1,755 people per square mile
- Land area of 523 square miles
- 14% of people below poverty level
- 6 birthing facilities/2 hospital systems
- 14,537 births in 2010³
- Prior to 2010 only 1/2 of birthing facilities provide hearing rescreen

County B

- Population of 974,289
- Median household income of \$65,826
- 1,078 people per square mile
- Land area of 835 square miles
- 11% of people below poverty level
- 3 birthing facilities/2 hospital systems
- 13,926 births in 2010³
- All birthing facilities provide hearing rescreen

Goal

- Our long term goal is reducing LTFU throughout the state after a failed newborn hearing screening.
- Our short term goal is for all NC birthing facilities to have a formal hearing rescreen process in place.

Methods

- In 2009, we examined LTFU numbers for counties A and B, revealing a total of 176 infants marked LTFU in County A and 36 infants in County B.
- Based on this analysis, it was hypothesized that differences in LTFU may occur because:
 - One half of the birthing facilities in County A had no rescreen procedure in place.
 - The birthing facilities that did provide rescreens, did so at an off-site location.
 - Two-thirds of the birthing facilities in County B have an audiologist with the title of NBHS coordinator, whose responsibilities include completing rescreens and follow up. Birthing facilities in County A have no positions dedicated solely to NBHS and follow up.

We decided to focus on establishing a rescreen process in County A for those birthing facilities that did not have one.

Methods (continued)

- The initiative began at one nursery in a County A facility with a National Institute for Children's Health Quality (NICHQ) project in 2009-2010. All rescreens were performed at a site on campus by a hospital volunteer, with equipment provided by NC EHDI.
- After the completion of NICHQ, rescreens were continued by an audiologist at an associated facility, adjacent to the birthing facility and including infants from all nurseries at this facility in July 2011.
- These audiologists began completing rescreens for infants from other County A birthing facilities within the same hospital system in 2012.
- By January 2013, all birthing facilities in County A had a rescreen process in place.

Results

- As shown in Fig. C and D, LTFU after failing NBHS did decrease in County A from 2010-2012 with the introduction of a rescreen protocol in 3 birthing facilities.
- County B still has lower LTFU than County A.
- LTFU numbers increased slightly in both counties in 2012, which is consistent with national LTFU, and is possibly related to changes in data reporting.

Fig C. Number of Infants LTFU Following NBHS³

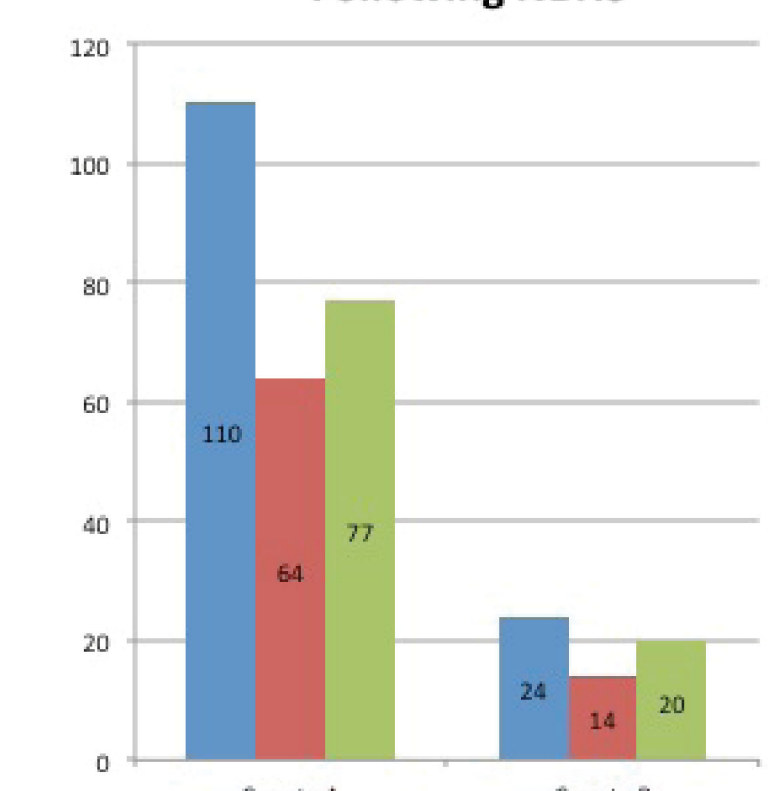
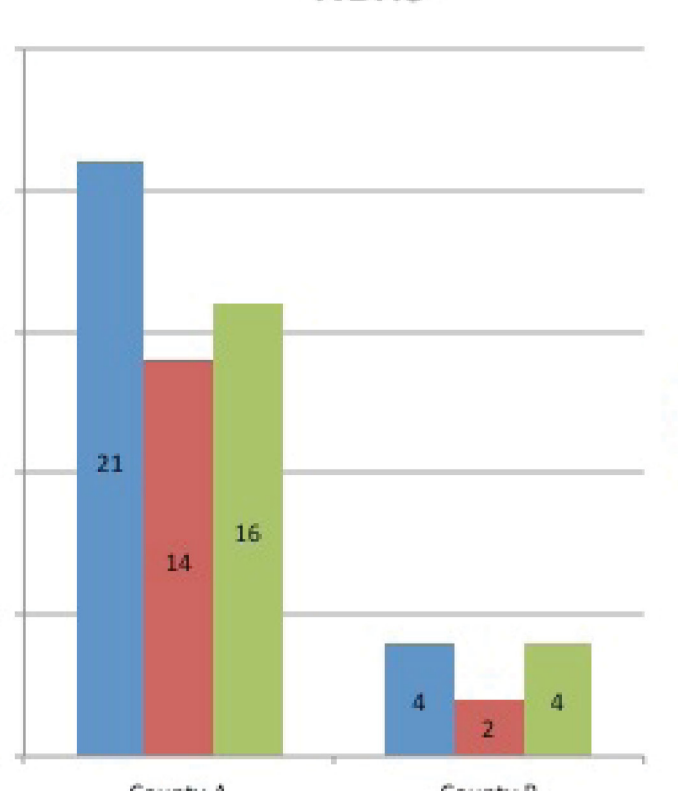


Fig. D Percent LTFU Following NBHS³



*The increase in LTFU in 2012 was seen nationally. The Centers for Disease Control and Prevention (CDC), through separate funding, supports states in the development and enhancement of EHDI data collection systems. The increase is due to several factors including: A) improved reporting of hearing screening results by providers; B) more strict guidance to states from CDC regarding how to define cases to be counted in each reporting category; and C) improved quality of data due to data system improvements.

Conclusion

In areas where rescreens are not provided at birthing facilities, there is a higher rate of LTFU.

In areas where birthing facilities have a NBHS Coordinator with sole responsibility for follow up, LTFU rates are significantly reduced.

17% of birthing facilities in County A did not consistently refer babies for rescreens, most likely resulting in a higher rate of loss to follow up as compared to County B.

The lack of standardized hospital staff training regarding NBHS is a confounding variable that ultimately cuts across all other variables and will require further study in order to determine its effects on loss to follow up.

Next Steps

Results from this study can be used as evidence to support the value of a formal rescreen process for other birthing facilities in the state.

These results may also provide evidence to support onsite rescreens for better follow up. Further study is needed in this area.

The EHDI program will continue to evaluate NBHS follow up in County A to ensure consistent use of the rescreen process, as well as ways to make improvements.

References

- Center for Disease Control: www.cdc.gov/ncbddd/hearingloss/data
- US Census Data: <http://quickfacts.census.gov/>
- Hearing Link Database: <https://wcs.ncpublichealth.com>

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