

# Educating and Training Midwives in Providing Infant Hearing Screenings in Homebirth Environments



(Keep, 2008)

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## **Introduction**

The first three years of a child's life is generally regarded as the most critical period to the development of speech and language acquisition. Undetected hearing loss during this period severely impacts the normal acquisition of language development. As a result, children with undetected hearing loss fall behind their normal hearing peers in language development and academic achievement (Yoshinaga-Itano, 2003). However, if the hearing loss is detected early, the negative impacts can be reduced or eliminated through early intervention measures, including amplification, speech and language therapy and family support. In response to this critical issue, the National Institutes of Health's (NIH) Consensus Development Conference on Early Identification of Hearing Loss (1993) recommended that all high-risk infants be screened before discharge from the hospital and that universal screening of all infants be implemented within the first three months of life.

The NIH position statement began the development and implementation of Universal Newborn Hearing Screening programs (UNHS) across the nation. The Joint Committee on Infant Hearing (JCIH) 2007 position statement endorsed the practice of early detection and intervention. The JCIH outlines eight basic principles for effective Early Hearing Detection and Intervention (EHDI) systems. The first is that, "all infants should have access to hearing screening using a physiologic measure at no later than 1 month of age" (JCIH, 2007). Currently there are 43 states with enacted legislation specific to newborn hearing screening (NCHAM, 2009).

Before the implementation of UNHS programs, the average age of diagnosis for children with congenital hearing loss was approximately 2 ½ years of age (Mehl & Thomson, 1998). UNHS has significantly decreased the age of diagnosis. Since the implementation of UNHS, a review of the literature indicated diagnosis at a mean age of 3.5 months for children with mild-to-moderate hearing loss and diagnosis at a mean age of 6.3 months for children with severe-to-profound hearing loss (Thompson et al., 2001). Further review of the literature on UNHS found significant improvement in language performance scores of children with hearing loss born in hospitals with a UNHS program

as compared to children with hearing loss born in hospitals with no UNHS program. Scores of those in the unscreened group were more than 1 standard deviation lower than the normal range for children of the same age (Thompson et al., 2001).

The 2007 Center for Disease Control EHDI Hearing Screening and Follow-up Survey revealed a national average of 94% of screened newborn infants. The average rate of infants screened for the states within the URLEND region is 96.7% for 2007. Although the URLEND region was performing above the national average, there were still 3067 newborn infants that were not screened and another 620 newborn infants who were not screened either because of death, or due to parents declining the screening (CDCP, 2007). Universal screening for all newborns must include those who are born outside of the traditional hospital setting. The National Vital Statistics Report, January 2009, noted a sharp increase of births attended by midwives, either in the home or in a birthing center from 1975 -2006. The newborn birthed within these environments will most likely not be screened.

The URLEND Leadership Project described in this paper is designed to provide access to newborn hearing screening for births attended by midwives. It is believed that implementation of an education and training program for midwives will increase the percentage of screened newborns. Research has shown that midwives or home health workers can easily be trained to perform otoacoustic emissions (OAE) testing; however, the cost and sharing of equipment should be considered. The timing of the hearing screening should also be taken into consideration. It has been documented that OAE testing has a much higher false positive rate if performed within the first 24 hours of life. The false positive rate falls to 4% by 72 hours of life (Owen, Webb & Evans, 2001). The educational and training program developed for this project will address these considerations, as well as steps to early intervention if a hearing loss is identified.

### **The Evolution of a Project**

From the beginning, the objective behind this project was to provide access to newborn hearing screening opportunities to those populations who may have initially waived, or

those who did not have access to, newborn hearing screening. Through much negotiation, this URLEND Leadership project has evolved from initial lofty goals of conducting a Hearing Screening Fair in Utah, to conducting a smaller Hearing Screening Fair in a rural area of Wyoming, to educating and training midwives to conduct newborn hearing screenings, to educating and training one midwife in Wyoming to conduct hearing screenings when attending home births. While this project has ‘morphed’ considerably, this long journey has maintained its primary purpose, which is to promote hearing screening, especially for some newborn populations which have yet to be included in hearing screenings.

### **Project Goals**

First, the project was interested in understanding why families with undocumented and/or home births have chosen to waive newborn hearing screening for their infant/child. Second, it was important to consider that some may be unaware of available services or may be unable to access services.

Certified Nurse Midwife Gretchen Spicer of Wisconsin answered some of these questions at the recent EHDI conference held in Chicago in March, 2010. Spicer (personal communication, March 1, 2010) stated that some of the reasons why home births are chosen over hospital births include: religious, cultural and ‘control’. Religious sects may include conservative Christians and orthodox Jews. Cultural considerations may include those who are recently arrived in the United States, or those who are not United States citizens. Spicer also indicated that home birth preferences may include second-generation ‘home-birthers’, those who were not previously satisfied with the hospital environment, those who were fearful of intervention, those who were family-centered, and those who wanted more control over their own birthing situations. Of note, Spicer indicated that some home births are not attended by midwives and the births are not registered; therefore, if a birth is not registered, it is not possible to document or track hearing screening.

Further, Spicer indicated that some barriers for families include midwife provider-bias, cost, cultural traditions and fear. Barriers for midwives include sharing of hearing screening equipment, unpredictable hearing screening environment, cost, and a lack of state-mandated legislation for newborn hearing screenings. Spicer recommended purchasing more hearing screening equipment, providing at least four regional trainings for midwives, working with hospitals to provide free ABRs for infants who do not pass the initial OAE hearing screen, and relationship-building with all those who are stakeholders in newborn hearing screening – families, midwives, audiologists, hospitals and government.

### **Primary Purposes of Project**

The primary purposes of this project were to adapt newborn hearing screening materials that could be used for training purposes, adapt a flow chart indicating pass/refer criteria for midwife use, and educate and train one midwife in the Wyoming area to perform newborn hearing screenings. To this end, a manual was created - *Newborn Hearing Screening: A guide for the midwife* - specifically for the EHDI program of Wyoming. This guide was adapted from several sources, including the Utah EHDI manual. In addition, a flowchart was also adapted specifically for midwife use. The expected outcome of the project is to create a systems model of education and training for midwives in newborn hearing screening that can be replicated in states where there is a legal provision for the practice of midwifery.

### **Rationale for the project:**

The rationale for this project is similar to that of the original proposal. Even if just one individual is identified who needs hearing intervention, then progress is being made. The rationale is that families who choose a homebirth environment will have access to newborn hearing screening through the midwife attending the birth. The Wyoming state EHDI office will serve as a resource for education, training and equipment-lending for the midwifery system.

### **Project Aims/Objectives:**

1. Develop a system of newborn hearing screening services through education, training and providing equipment and resources to midwives;
2. Expand the number of newborn hearing screenings to families that choose homebirth environments;
3. Provide hearing screenings within the home through the midwife to other children who may have not been screened;
4. Identify children with hearing loss among the homebirth population;
5. Create a working partnership between state EDHI offices and midwives within the state;
6. Educate midwives and families in the importance of newborn hearing screening and early intervention for children with hearing loss;
7. Foster and encourage hearing health for all members of the family.

### **Midwife Training**

During this project, the focus was placed on training midwives in the state of Wyoming to do hearing screening with otoacoustic emissions (OAEs). The Wyoming EHDI program was able to provide OAE equipment to lend to trained midwives. First, a training manual was specifically adapted for hearing screening in the state of Wyoming. Second, a flow chart was also adapted for procedural best practice. Third, certified midwives in the state of Wyoming needed to be identified and then convinced that hearing screening should be an important part of their services.

In April, 2010, a pilot training was offered to a certified midwife who delivers approximately 15 children annually in the state of Wyoming. The midwife was trained in newborn hearing screening with otoacoustic emissions. The midwife was also trained in reporting data. The training was very collaborative and changes were made to written materials subsequent to feedback from the midwife.

The organization and coordination for training the first midwife in Wyoming to perform hearing screenings has been considerable. Subsequent trainings are not anticipated to take as long. The trained midwife was very pleased to be able to offer the hearing screening services immediately. Additional licensed midwives within Wyoming have been identified. Training dates will be scheduled throughout the remainder of 2010.

**Future Project Aims and Objectives:**

Future project aims and objectives entail three parts:

Part 1: Educate midwives about newborn hearing screening, the rationale for screening and the procedure. Offered as a short course, this can be presented to a group or be taken in a distance format. The course can be posted on the Wyoming EDHI website.

Part 2: The midwives within the state and bordering states are encouraged to attend the training sessions. During these sessions, the midwives will receive hands-on training for newborn hearing screenings. It is envisioned that sessions will be held in a central location; alternatively, several sessions can be held throughout the state to reduce travel costs for rural community midwives.

Part 3: Develop a system of service with the state EHDI office and local extension offices where midwives can locate and borrow equipment to carry out the newborn hearing screening.

**Training Eligibility and Incentive:**

In the future, more midwives within the state of Wyoming will be invited to participate. Our intention is to have the educational and training portion of the project approved for CEUs. This may offer more incentive for midwives to participate in education and training for newborn hearing screening.

## References

- Centers for Disease Control and Prevention (CDCP) (2007). Summary of Diagnosis and Loss to Follow-up /Loss to Documentation (Year 2007). Data Source: 2007 CDC EHDI Hearing Screening & Follow-up Survey (HSFS) ([www.cdc.gov/ncbddd/ehdi/data.htm](http://www.cdc.gov/ncbddd/ehdi/data.htm)).
- Early identification of hearing impairment in infants and young children NIH Consensus Statement. 1993 Mar 1-3; 11(1):1-24.
- Joint Committee on Infant Hearing (2007). Year 2007 position statement: Principles and guidelines for early hearing detection and intervention programs. *Pediatrics*. 2007 Oct;120(4): 898-921.
- Keep, L. (April 29, 2008). Love to Know: Baby: Immediate nursing care of the newborn. Retrieved on March 15, 2010 from [http://baby.lovetoknow.com/wiki/Immediate\\_Nursing\\_Care\\_of\\_the\\_Newborn](http://baby.lovetoknow.com/wiki/Immediate_Nursing_Care_of_the_Newborn)
- National Center for Hearing Assessment & Management (NCHAM) (2009). EHDI Legislation. Accessed online [www.infanthearing.org/legislative/index.html](http://www.infanthearing.org/legislative/index.html)
- Mehl, A. L., & Thompson, V. (1998). Newborn Hearing Screening: The Great Omission. *Pediatrics*, 101(1),e4.
- Thompson, D. C., McPhillips, H., Davis, R., Lieu, T. L., Homer, C.J, & Helfand, M. (2001). Newborn Hearing Screening: A Summary of the Evidence. *Journal of American Medical Association*, 286(1), 101-119.
- Yoshinaga-Itano C. (2003). From screening to early identification and intervention: discovering predictors to successful outcomes for children with significant hearing loss. *Journal of Deaf Studies & Deaf Education*. 2003 Winter;8(1):11-30.