

Ongoing Research Projects With CDC-EHDI Funding

Language and Behavioral Outcomes of Children With Congenital Hearing Loss: Family Perspectives Study II - Women and Infants' Hospital, Providence, Rhode Island

Principal Investigator: Betty Vohr - bvohr@wihri.org

Background: Congenital hearing loss, which is identified in 1-3 per 1,000 newborns, is the most commonly occurring birth defect. It has been shown that early identification and enrollment in intervention for infants with moderate, severe, and profound hearing loss can offset the detrimental effects of permanent hearing loss on language, behavior, and academic skills. There is, however, increasing evidence that unilateral and minimal/mild hearing loss also can negatively impact academic and language outcomes at school age.

Purpose: This project extends the work of a previously CDC funded project, *Family Interview and Family Perspectives*. The goal of this continuation is to conduct prospective comparisons of language, communication, behavior and adaptive skills among (1) children who were identified early with minimal/mild hearing loss; (2) children identified early with moderate to profound bilateral hearing loss; and (3) typically hearing children at 36 and 48 months of age. Additionally, the project will identify the child, family, and intervention characteristics that contribute to optimized outcomes. Minimal/mild hearing loss is defined to include unilateral hearing loss of any degree and bilateral hearing loss ≤ 40 dB); moderate to profound bilateral hearing loss is defined as > 40 dB)

Methods: Interviews will be conducted with children's families to assess resources, support, parenting stress, effect on the family, and child behavior. Receptive and expressive language development in children will be directly assessed. Audiological status, measures of speech perception, adaptive skills and cognitive functioning will also be assessed. The three primary hypotheses are:

- 1) Children with moderate to profound bilateral hearing loss will have lower language, behavior, and adaptive scores than children with minimal/mild hearing loss and children with typical hearing;
- 2) Language and behavior scores of children with Minimal/mild hearing loss will diverge from those of typically hearing children with increasing age;
- 3) Children with minimal/mild or moderate to profound bilateral hearing loss or moderate to profound bilateral hearing loss enrolled in early intervention at 3 months of age or younger, and whose parents have frequent and positive experiences in early intervention, will have better language, behavior, and adaptive skill development over time than those enrolled after 3 months of age.

Longitudinal data on language and behavior of children with congenital hearing loss receiving "very early" early intervention are rare. This study is also unique in that we have enrolled a cohort of term and preterm infants with hearing loss ranging from mild to profound and matched controls with hearing. Analyses of predictors and outcomes at 36 and 48 months of age will identify factors that contribute to optimized outcomes.

Current Status: Funding for this project began October 1, 2006. (*Updated 10/2006*)