



Early Hearing Detection and Intervention Program

2006 Annual Report

Background

Hearing loss is an unseen birth defect. If undetected in a newborn, the child is hampered with severe difficulty in developing language, learning and social skills. The diagnosis of hearing loss is sometimes delayed, with milder losses often not identified until a child enters school. To ensure that all children with hearing loss are recognized as early as possible and provided with the correct audiological, educational and medical intervention, the Virginia Early Hearing Detection and Intervention (VEHDI) Program includes the basic components of newborn hearing screening, audiological diagnosis and early intervention.

The Code of Virginia requires all hospitals to screen newborns prior to discharge. Hospitals also are required to identify children at risk for developing progressive or delayed-onset hearing loss and report these results to the Virginia Department of Health (VDH). In addition, audiologists are required to send reports to VDH on infants and toddlers seen for audiological follow up. VDH collects, maintains and evaluates these reports. VDH also provides training and technical assistance to the hospitals and makes available follow-up information and services to parents.

Collaboration is the key to success

Through the collaborative efforts of hospitals, audiologists, PCPs and VDH, every infant born in Virginia should be screened for hearing loss before 1 month of age and monitored for appropriate follow up—which may include a diagnostic audiological evaluation before 3 months of age and early intervention services before 6 months of age.

The VEHDI Program's mission is being accomplished in part by implementing the Centers for Disease Control and Prevention's (CDC) EHDI recommendations, often referred to as the "1-3-6 Plan."



All infants will be screened for hearing loss prior to hospital discharge or before 1 month of age.



All infants who do not pass their hearing screening will have a diagnosis before 3 months of age.



All infants with a confirmed hearing loss will receive early intervention services before 6 months of age.

Virginia's comprehensive EHDI tracking and surveillance goes beyond the 1-3-6 plan. It identifies and tracks infants and toddlers who were not screened at birth or who are at risk for delayed-onset hearing loss. Primary care providers (PCPs), parents/guardians, and other care providers are urged to refer an infant for screening any time they suspect hearing loss. Also, audiologists who identify infants and children with hearing loss are required to report such losses to the VEHDI program.

It is the responsibility of the hospitals to obtain child-specific information (including the identification of risk indicators for hearing loss), screen all newborns for hearing loss shortly following birth, report outcomes to VDH within one week of discharge and to each child's PCP, inform each family of their child's newborn

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hearing screening outcome, and provide information to assist caregivers in accessing additional support and services.

Mission Statement

The mission of the Virginia Department of Health's Early Hearing Detection and Intervention (VEHDI) Program is to minimize or eliminate communication disorders resulting from hearing loss.

Audiologists screen or re-test infants who were missed or failed the hospital screening and conduct diagnostic audiological evaluations. They report the outcomes to VDH, PCPs and families within two weeks of the screening.

The role of the PCP is to facilitate referrals for audiological evaluations, conduct overall

assessment of the child's healthcare and coordinate appropriate care among the various services and supports provided to the child and family.

VDH provides feedback and training to the hospitals and audiologists. VDH contacts parents of babies who failed the initial screening to remind them of the importance of follow-up testing. In order to inform the families of available resources, VDH also contacts parents of the infants who have been identified with hearing loss.

Newborn Hearing Screening Rate: Prior to 1 month of age

99.3 percent of infants received hearing screening prior to 1 month of age

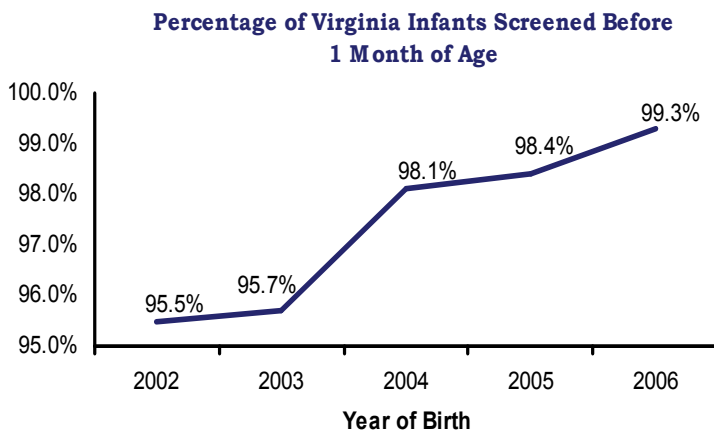


Figure 1 Graph demonstrating the significant improvements in newborn hearing screening prior to 1 month of age.

The rate of infants screened for hearing loss before 1 month of age in Virginia has steadily increased over the last five years from 95.5 percent in 2002, to 99.3 percent in 2006.

Most Virginia hospitals screen nearly all (99.5 percent) of the infants born in their facilities prior to hospital discharge. Very few newborns are missed in the hospital (0.4 percent), and almost no parents refuse the screening (less than 0.1 percent). The VEHDI Program sends letters to the parents and primary health care providers of these children to convey the importance of hearing screening. Of the infants who were "missed" prior to hospital discharge, 78.8 percent were screened for hearing loss, and 53.6 percent were screened prior to 1 month of age. Some of the parents who initially refused, later consented to having their child screened for hearing loss. Of these infants, 22.8 percent were screened for hearing loss, and 21.7 percent were screened prior to 1 month of age.

Audiologic Assessment and Diagnostic Evaluation

68.1 percent of infants who failed their hearing screening received a diagnostic evaluation that either confirmed or ruled out hearing loss before 3 months of age

Of all infants who failed their hearing screening, 83.5 percent received a follow-up evaluation (re-screening or audiological assessment), and 72.5 percent received follow-up prior to 3 months of age.

According to CDC's "1-3-6 Plan," all infants who fail their hearing screening should receive a diagnostic evaluation prior to 3 months of age. Of all infants who failed their initial hearing

screening, 76.7 percent received a diagnostic evaluation, and of these infants 68.1 percent received the diagnostic evaluation prior to 3 months of age.

Figure 2 illustrates the number of infants reported to VDH who were born in a given year and identified with hearing loss.* The number of infants reported to VDH falls short of the 300 cases expected annually. We believe this is due to the under reporting of unilateral and/or mild hearing losses, accessibility to audiological facilities in rural areas, language barriers and the disconnect between PCPs and Hospitals. VDH will continue to educate PCPs, birthing centers and midwives on the importance of early follow-up and early intervention, and will continue to track, more aggressively, all infants who have not passed their follow-up hearing screening in an effort to increase confirmation rates.

One of the goals of the VEHDI program is to decrease the average age at which children with congenital hearing loss are identified. **Figure 3** illustrates the average and median age of infants identified with hearing loss at diagnosis.** The median and average ages at diagnosis continue to decline each year; however, they are expected to increase because children diagnosed with hearing loss after the publication of this report will be older than those already

Total Number of Infants Diagnosed With Hearing Loss in Virginia

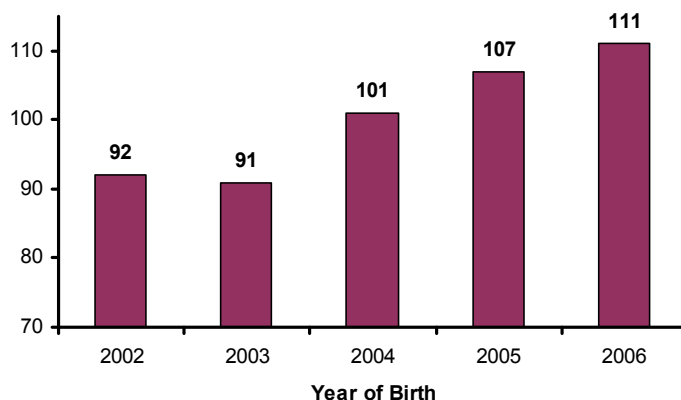


Figure 2 Graph indicating that through collaborative efforts more children are being diagnosed with hearing loss each year.

Median and Average Age of Infants at Diagnosis

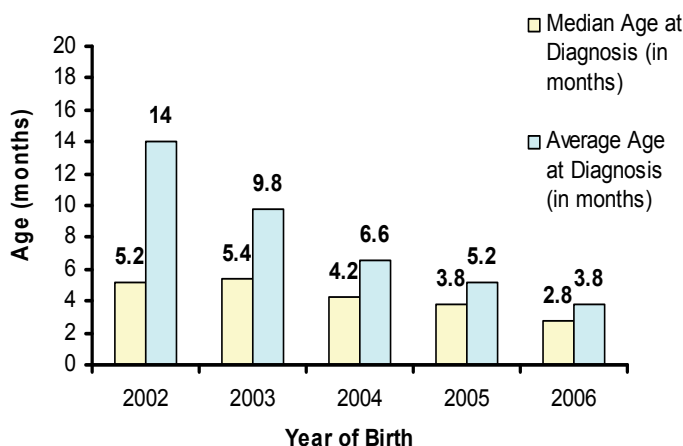


Figure 3 Graph demonstrating the age at which infants are being diagnosed with hearing loss is declining.

identified. Of the infants born in 2006 and reported with permanent hearing loss, 54.1 percent were identified before 3 months of age, up from 34.6 percent in the previous birth cohort.

Early Intervention Services

Yoshinaga-Itano (1995) and his colleagues (1998) conducted studies comparing infants with a confirmed hearing loss who received early intervention and amplification before 6 months of age to those who received intervention and amplification after 6 months of age. Children identified before 6 months of age are 1-2 years ahead of the later-identified children in the development

language, cognitive and social skills by the time they enter first grade.

In Virginia, 86.5 percent of the 111 infants born in 2006 who were identified with hearing loss are enrolled in early intervention services. Of these infants, 78.4 percent began early intervention services before 6 months of age.

78.4 percent of infants with a confirmed hearing loss received early intervention services before 6 months of age

* This total does not include children with acquired hearing loss.

** Median age is defined as the age at which half of all cases were diagnosed earlier and half later and is generally a more accurate indicator of the "typical" age.

2006 Program Highlights



The VEHDI Program participated with the Centers for Disease Control and Prevention's (CDC) Program Evaluation Project focusing on barriers and factors that contribute to loss or delay to follow up. Four Virginia hospitals conducted 364 maternal exit surveys; 190 maternal interviews were conducted by phone.

The survey results imply that the dissemination of information about infant hearing screening, detection, and intervention before birth could be enhanced. CDC reports that two thirds of the respondents had not received any information from a birth education class or doctor's office during their pregnancy. The report also said efforts to provide information and test results in Spanish could be improved. CDC reports that 33 percent of Spanish-speaking respondents had not received any information or materials regarding the hearing screening in Spanish and 55 percent reported that no one had explained the results in Spanish. According to the results, dissemination of information regarding follow-up locations could also be enhanced. CDC reports that, "Nearly a quarter of the respondents (24 percent) had not received any information about where to go for follow-up evaluation and 44 percent indicated that the hospital had not made a follow-up appointment for them." However, 31 percent were given a list of places to call and nearly half of the respondents received an appointment reminder (45 percent received a call and 46 percent received a letter). Findings of this study also demonstrate that having the support of other families in similar circumstances can be helpful and reduce anxiety. CDC reports that, "75 percent of the respondents whose infant was diagnosed with hearing loss indicated that having another family to talk to would be very or somewhat helpful."

A Follow-Up Specialist was hired to enable the VEHDI Program to increase tracking and follow-up efforts, thereby reducing lost to follow up.

The VEHDI Program workgroup recommended and adopted the Guide By Your Side (GYBS) module as a means to provide parent-to-parent support for families of recently diagnosed children. The program was adopted from The National Hands and Voices whose mission is to provide emotional support and unbiased information to families of children who are deaf or hard of hearing through screened and trained family guides (experienced parents of children who are deaf or hard of hearing). In October 2006, 16 parents were trained to be family guides for children identified with hearing loss.

The VEHDI Program conducted a parent survey in order to evaluate the services that are provided for young children in Virginia who have been reported as having hearing loss. Results are pending.

The VEHDI Program and other Division of Child and Adolescent Health staff involved with the state Head Start Health Advisory Committee recently began collaboration with the National Center for Hearing Assessment and Management (NCHAM) and the Hearing Head Start Early Childhood Hearing Outreach (ECHO) Project. This hearing screening and follow-up program was launched to improve the quality of hearing screening in Early Head Start programs and to further identify children who did not receive follow up to newborn hearing screening, or who develop hearing loss later.

The Virginia Hearing Aid Loan Bank loaned 83 aids and 12 FM systems to 52 children. CDC approved funding for year two of a three-year cooperative agreement with VDH for the Virginia Child Health Information System Integration Project (VaCHISIP). The purpose of this project is to enhance the capability of the VEHDI Program's tracking and surveillance system and to expand the integration of the tracking and surveillance system with similar programs that identify children with special health care needs in Virginia.

For more information, please visit our Web site at <http://www.vahealth.org/hearing>.

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