AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

Early Hearing Detection and Intervention

Action Requested

Please co-sponsor S. 3199, legislation that would reauthorize the Early Hearing Detection and Intervention program (EHDI) as introduced by Senators Snowe (R-ME) and Harkin (D-IA). The House passed its version of the bill, H.R. 1246 in 2009. This legislation would reauthorize the federal portion of this important and highly successful initiative for the next five years. The EHDI Act would place greater emphasis on diagnosis, treatment, and family support services for children with hearing loss.

Background

Early Hearing Detection and Intervention (EHDI) grants were first authorized in the Newborn Infant Hearing Screening and Intervention Act of 1999, which was incorporated as Title VI of the Labor, HHS and Education Appropriations Act of 1999, and signed into law. This law provided federal funds for state grants to develop infant hearing screening and intervention programs. The following year, Congress reauthorized these grants through the Children's Health Act of 2000 (P.L. 106-310) and included provisions related to early hearing screening and evaluation of all newborns, coordinated intervention, rehabilitation services, and research.

Hearing loss continues to be one of the most common birth defects in America. Every day in the United States, approximately 33 babies (i.e., 1 to 3 infants per 1,000) are born deaf or hard of hearing. EHDI grants to states have significantly increased the number of infants screened for hearing loss. In 2000, only about 40% of all newborns in the United States were screened. However, modest amounts of federal funding through the EHDI federal grants have resulted in about 95% of infants being screened within the first month of life.

Although great strides have been made, significant work remains to ensure that newborns with hearing loss receive timely and appropriate services. About half of those referred for diagnosis are lost to the system. An estimated one-third of the babies who stay in the system do not receive diagnostic evaluations by 3 months of age. In addition, over half of the infants diagnosed with hearing loss are not enrolled in early intervention programs by 6 months of age. Continued federal funding is necessary to ensure that state EHDI programs become fully operational, successful, and properly link screening programs with diagnosis and early intervention.

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Facts on Hearing Loss in Children

1) Every day in the United States 33 babies are born with permanent hearing loss. Approximately 1 in 1,000 newborns are born profoundly deaf with another 2-3 out of 1,000 babies born with partial hearing loss, making hearing loss one of the most common birth defects in America.[1] Almost half of the children with hearing loss in the United States are from racial/ethnic minority populations.[2]

2) Newborn hearing loss is 20 times more prevalent than phenylketonuria (PKU), a condition for which all newborns are currently screened.[3]

3) In the United States, 12,000 babies are born annually with some form of hearing loss, only half exhibit a risk factor – meaning that if only high-risk infants are screened, half of the infants with some form of hearing loss will not be tested and identified.[4] In actual implementation, risk-based newborn hearing screening programs identify only 10 - 20% of infants with hearing loss.[5]

4) The majority of children with hearing loss are born into families who have little or no experience with hearing loss.[6]

5) Late identification of hearing loss or lack of early intervention services can negatively impact speech and language development, academic achievement, and social-emotional development.[7] The most critical time for stimulating the hearing centers in the brain is during the first few months of life.[8]

6) Until the 1990s, children born with permanent hearing loss typically would not have been identified and diagnosed until 2 ½ to 3 years of age. Since the initiation of newborn hearing screening and EHDI programs, the average age confirmed hearing loss has decreased to 2-3 months of age.[9, 10]

7) Newborn hearing screening has become the standard of care in the United States. While about 95% of all newborns are screened for hearing loss shortly after birth, only 54% of these babies actually received the recommended hearing evaluation; the remaining 46% are "lost to the system." [11, 12]

8) When deaf children are not identified early and given appropriate services, additional special education services beyond what would have otherwise been required can cost an additional $500,000 for the local school district.[13]

9) Approximately 2.5 million, or 5.4%, of all school-age children, have mild or unilateral hearing loss. Over one-third of these children are projected to fail at least one grade and/or will require additional educational support, costing the educational system over $5.5 billion.[14]

National Recommendations on Early Hearing Detection and Intervention

10) The Joint Committee on Infant Hearing and U.S. Public Health Service's Healthy People 2010 health objectives recommend that all newborns be screened for hearing loss by 1 month of age, have diagnostic follow-up by 3 months, and receive appropriate intervention services by 6 months of age. [15] [16]

11) A National Institutes of Health (NIH) Consensus Panel in 1993 recommended hearing screening for all newborns. The consensus report concluded that the best opportunity for achieving this goal is provided by the development of hearing screening programs for newborns in hospital nurseries or in birthing centers, prior to discharge.[17]

Methods and Costs for Early Hearing Detection and Intervention Services

12) Advances in technology for newborn hearing screening at most birthing hospitals have allowed for cost containment, with current charges ranging from $25 to $60. The cost of identifying a newborn with hearing loss is less than one-tenth the cost of identifying newborns with PKU, hypothyroidism, or sickle cell anemia, which are screened for in nearly every state.[18]

13) Two types of electrophysiologic procedures are used to screen newborns, alone or in combination:

- **Auditory brainstem responses (ABR)** are measured by placing sensors on the baby's head. Sound is then introduced to the baby's ears through tiny earphones while the child sleeps. A computer records brainwave activity to evaluate whether the auditory system is responding to sound. This test is painless and takes only about 5 minutes.
- **Otoacoustic emissions (OAE)** are faint sounds produced by most normal inner ears. The sounds cannot be heard by people, but can be detected by very sensitive microphones that are placed in the ear canal. During testing, a tiny flexible plug is inserted into the baby's ear and sound is then projected into the ear through the plug. A microphone inside the plug records the otoacoustic emissions that the normal ear produces in response to the incoming sound. Testing is painless, takes about 5 minutes to complete, and can be done while the baby sleeps.

14) Early intervention services provide families with support and resources to make informed decisions about the treatment and management of hearing loss in children.[19] Families must be provided with complete and unbiased information regarding all available communication methods. This information should be presented in a straightforward manner that will facilitate decision making and lead to desired family outcomes. [20]

15) A variety of communication methods are available and are selected by the family based on the needs of their child and family. Communication methods include:

- ⇨ **Listening and Spoken Language** (also referred to as Auditory-Verbal or Auditory-Oral) – The infant or young child is fitted with hearing assistive devices and is exposed to the language of the home through listening and talking, leading to spoken language in the home, school, and among peers.
- ⇨ **Cued Speech or Cued Language** – This method utilizes specific hand shapes and placements around the face to clarify the ambiguity of lip reading.
- ⇨ **American Sign Language** (ASL) – The infant or young child is exposed to language through vision which leads to signed language in the home, school, and among peers. ASL's grammatical structure is different from English.
- ⇨ **Total Communication** – This method represents the simultaneous use of spoken language and English-based signed language.

Benefits of Early Hearing Detection and Intervention

16) Infants identified with hearing loss can be fit with amplification at as young as 4 weeks of age. With appropriate early intervention, children with hearing loss can be mainstreamed in regular elementary and secondary education classrooms.[21] Recent research has concluded that children born with a hearing loss who are identified and given appropriate intervention before 6 months of age demonstrated significantly better speech and reading comprehension than children identified after 6 months of age.[22] [23]

17) Even mild hearing loss can significantly interfere with the reception of spoken language and education performance. Research indicates that children with unilateral hearing loss (i.e., loss of hearing in one ear) are ten times as likely to be held back at least one grade compared to children with normal hearing.[24] [25] [26] Similar academic achievement lags have been reported for children with even slight hearing loss.[27] Children with mild hearing loss miss 25% – 50% of speech in the classroom and may be inappropriately labeled as having a behavior problem.[28]

18) Without EHDI programs, the average age of identification for hearing loss was over 3 years of age. More severe hearing impairment, but not later diagnosis, has been correlated to poorer language outcomes at 7-8 years of age.[23]

19) Recent clinical studies indicate that early detection of hearing loss followed with appropriate intervention minimizes the need for extensive habilitation during the school years and therefore reduces the burden on the IDEA Part B program.[29]

20) A study conducted by Gallaudet University which examined children over a 30 year period found that half of the children with hearing loss graduated from high school with a grade 4 reading level or less.[30]

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