



## **Early Hearing Detection & Intervention (EHDI)**

### **FACTS ON HEARING LOSS IN CHILDREN IN THE U.S.**

- Approximately 3 in 1,000 babies are born with permanent hearing loss, making hearing loss one of the most common birth defects in America.<sup>1</sup>
- The majority of children with hearing loss are born into families who have little or no experience with hearing loss.<sup>2</sup> Almost half the children with hearing loss in the US are from racial/ethnic minority populations.<sup>3</sup>
- Late identification of hearing loss or lack of early intervention services can negatively impact speech and language development, academic achievement and social-emotional development.<sup>4</sup> The most critical time for stimulating the hearing centers in the brain is during the first few months of life.<sup>5</sup>
- 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.<sup>6, 7</sup>
- 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.<sup>8</sup>
- Children with mild or unilateral hearing loss can benefit from early intervention services. Left undetected, mild or unilateral hearing loss can result in delayed speech and language acquisition, social-emotional or behavioral problems, and lags in academic achievement.<sup>9, 10, 11, 12</sup>

### **FOLLOW-UP AND TRACKING**

- Newborn hearing screening has become the standard of care in the United States. While 92% 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."<sup>13, 14</sup>
- Because the majority of EHDI programs rely on voluntary reporting from audiologists and physicians, not all cases of identified hearing loss are reported, further impeding follow-up efforts.<sup>15</sup>
- Mandatory reporting and effective tracking systems facilitate referrals, appropriate follow-up care, and help establish linkages between hearing screening, early intervention services, and seamless transition into the education system.<sup>16</sup>
- Without effective tracking systems, many of these children will not receive the necessary early intervention services. Children who receive early intervention services are more likely to demonstrate better communication, academic and social outcomes.<sup>17</sup>
- Nearly 40% of children identified with hearing loss and their families are not referred to the Part C early intervention system and may not be aware of the broad array of services and funding available to them. Part C is the primary source for families to link to other medical, audiologic and intervention services.<sup>18, 19</sup>

## **PRIVACY**

- Information about screening, diagnosis and the provision of early intervention, and family support services can be exchanged securely and legally among hospitals, audiologists, physicians and Part C Early Intervention programs.<sup>20</sup>
- HIPAA, FERPA, and Part C regulations are incorrectly perceived as obstacles to efficient coordination and delivery of services. Memoranda of understanding and coordinated consent forms can easily incorporate the necessary elements of federal privacy laws.<sup>21</sup>

## **EARLY INTERVENTION**

- Early intervention services provide families with support and resources to make informed decisions about the treatment and management of hearing loss in children.<sup>22</sup>
- Currently, only about half of the states have language in legislation or regulations that includes coverage for early intervention services to children with mild or unilateral hearing losses.<sup>23</sup>
- The spectrum of early intervention services include a combination of appropriate amplification devices (e.g. hearing aids, cochlear implants), family education, and communication development that have been selected by the family.<sup>24</sup>
- Families must be provided with complete and unbiased information regarding all available communication methods. This information should be presented in a straight forward manner that will facilitate decision making and lead to desired family outcomes.<sup>25</sup>
- 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.<sup>26</sup>
  - Cued Speech or Cued Language – This method utilizes specific hand shapes and placements around the face to clarify the ambiguity of lip reading.<sup>27</sup>
  - 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.<sup>28</sup>
  - Total Communication – This method represents the simultaneous use of spoken language and English-based signed language.<sup>29</sup>
- Early intervention services should be provided by qualified professionals who understand the needs of deaf or hard of hearing children and their families. A significant number of children with hearing loss are also born with visual, developmental and/or physical disabilities.<sup>30</sup>

## REFERENCES

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- <sup>2</sup> Deafness and Hearing loss. Disability Fact Sheet No. 3 January 2004, National Dissemination Center for Children with Disabilities Washington, DC. Available at [www.nichcy.org](http://www.nichcy.org).
- <sup>3</sup> Gallaudet Research Institute. Regional and National Summary Report of Data from the 2002-2003 Annual Survey of Deaf and Hard of Hearing Children and Youth. Washington, DC: GRI, Gallaudet University. 2003. Available at [http://gri.gallaudet.edu/Demographics/2005\\_National\\_Summary.pdf](http://gri.gallaudet.edu/Demographics/2005_National_Summary.pdf).
- <sup>4</sup> Yoshinaga-Itano C., Sedey A.L., Coulter B.A., and Mehl A.L. Language of early and later-identified children with hearing loss. *Pediatrics*. 1998; 102:1168-1171.
- <sup>5</sup> Sharma A., Gilley P.M., Dorman M.F., and Baldwin R. (2007). Deprivation-induced cortical reorganization in children with cochlear implants. *International Journal of Audiology*, 46(9), 494-9.
- <sup>6</sup> Hoffman, J., and Beauchaine, K. (2007, Feb 13). Babies with hearing loss: Steps for effective intervention. *The ASHA Leader*, 12(2), 8-9, 22-23.
- <sup>7</sup> Harrison, M., Roush, J., & Wallace, J. (2003). Trends in age of identification and intervention in infants with hearing loss. *Ear and Hearing*, 24, 89-95.
- <sup>8</sup> Bess, F., Dodd-Murphy, J. & Parker, R. Children with minimal sensorineural hearing loss: Prevalence, educational performance, and functional status. *Ear and Hearing*, 1998; 19(5) 339-354. Approximately 2,484,000 have mild or unilateral hearing loss. Of these, 919,080 (37%) will be projected to fail at least one grade. Assuming an average cost of \$6000 to educate a child for one year, the total expenditure for grade repetition exceeds \$5.5 billion (919,080 x \$6000 = \$5,514,480,000).
- <sup>9</sup> Yoshinaga-Itano C., Sedey A.L., Coulter B.A., and Mehl A.L. Language of early and later-identified children with hearing loss. *Pediatrics*. 1998; 102:1168-1171.
- <sup>10</sup> Bess F. The minimally hearing-impaired child. *Ear and Hearing*, 1985; 6:43-47.
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- <sup>12</sup> Oyler R., Oyler A., and Matkin N. Unilateral hearing loss: Demographics and educational impact. *Language, Speech and Hearing Services in Schools*. 1988; 19: 201-209.
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- <sup>15</sup> Ross, D., Holstrum, W.J., Gaffney, M. Green, D., Oyler, R., and Gravel, J.
- <sup>16</sup> NCHAM.
- <sup>17</sup> NCHAM.
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<sup>26</sup> Alexander Graham Bell Association for the Deaf and Hard of Hearing. *Communication Options*. Available at: [http://www.agbell.org/DesktopDefault.aspx?p=Communication\\_Options](http://www.agbell.org/DesktopDefault.aspx?p=Communication_Options).

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

<sup>29</sup> Ibid.

<sup>30</sup> American Speech-Language-Hearing Association. (2008). Service Provision to Children Who are Deaf or Hard of Hearing, Birth to 36 Months [Guidelines]. Available at [www.asha.org/policy](http://www.asha.org/policy).