



Congenital Hearing Loss

Severe to profound hearing loss is the second most common congenital disability in the United States (March of Dimes, 1990). If mild to moderate hearing loss is included, hearing impairment becomes the most common newborn disability.

The average age for identification of hearing loss in children in the United States is two and a half years old. Mild and moderate hearing losses often are not detected until the child's speech is delayed or difficult to understand. Since speech and language develop between birth and two years, even a mild hearing loss can have serious effects on a child's speech, language and cognitive development.

In Colorado, the rate of bilateral congenital hearing loss requiring intervention was conservatively estimated to be at least 1 in 500 newborns⁽¹⁾. This rate is higher than the rates of all genetic disorders commonly screened at birth combined.

INTERVENTION

Intervention typically involves amplification and specific strategies to promote the development of speech, language, communication and auditory skills. Special education services

may be required. Research conducted at the University of Colorado indicates that infants who are identified by six months of age exhibit language skills that are on the average within the normal range at three years of age. The Colorado researchers have demonstrated that the age of identification, not the method used to teach language, has the greatest impact on all areas of development, including personal social development⁽²⁾.

NEWBORN HEARING SCREENING

Through advances in technology, newborns can now be screened for hearing loss before discharge from the hospital. Prior to this technology only about half of all congenital hearing loss was detected in infancy, primarily by screening only those infants who met specific high-risk criteria.

ECONOMIC COSTS

Colorado researchers have also estimated the costs and benefits of newborn hearing screening. The cost of screening a single newborn ranges from \$18 to \$33. However, many babies must be screened in order to identify one with a hearing loss. The total cost of the accumulated screenings needed to identify the one with a hearing loss is

estimated to be about \$9,600. The costs of screening compare favorably with the costs involved with later identification of hearing loss in a child. Depending upon the level of intervention required, those costs can range from \$700 per year for itinerant special education services to \$33,000 per year for residential placement.



COLORADO NEWBORN HEARING SCREENING

Colorado has been a leader in promoting and implementing newborn hearing screening. Between 1992 and 1996, 41,796 newborns were screened in Colorado. This screening resulted in the identification of 126 infants with hearing loss.

During this period, an additional 17 children over the age of 18 months were identified

with significant hearing loss. All 17 were born at hospitals not participating in newborn screening.

The Colorado Newborn Hearing Screening Project was founded in 1991 as a collaborative effort to promote, support and facilitate mass hearing screening of newborns in Colorado. With the Project's assistance, 26 hospitals, which have from 40 to 4,000 births per year, voluntarily began to screen newborns.

On May 7, 1997, The Colorado Legislature passed a law requiring 85% of newborns to be screened prior to hospital discharge. The goal of this legislation is to help sustain current programs and to encourage the development of comprehensive systems of screening, diagnosis and intervention. The feasibility, cost effectiveness and developmental benefits of newborn hearing screening have been well established through Colorado's innovative programs and legislation.

REFERENCES

- (1) Mehl, AL & Thomson, V. Newborn hearing screening: the great omission. *Pediatrics* 101:(1) <http://www.pediatrics.org/cgi.content/full/104/1/e4> January 1998.
- (2) Yoshinaga-Itano, C, Sedey, A, Coulter, D & Mehl, A. Language of early and later identified children with hearing loss. Submitted for publication.

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