

# **Impact of Early Detection and Intervention of Hearing Loss**

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- Why Universal Newborn Screen?
- Impact of Early Detection and Intervention
- UNHS, JCIH, EDHI
- Advocacy at Local, State, and National Level



**Objectives**

- Heelstick Prick
  - Test for a specific number of conditions
    - Varies state-to-state what conditions are included
      - Example: Indiana tested for 44 conditions (including sickle cell anemia and hearing loss)
        - Babies born at home must be tested within one week after birth
      - [NBS State-By-State Interactive Map](#)
    - Florida: January 2011 – voted to add SCID (Severe Combined Immunodeficiency) to conditions tested for at birth.
      - Severe defect in T cell production
      - Handout: Newborn Screen Disorders – State-by-State breakdown

# Universal Newborn Screen

- Every day in the US 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. (National Center on Hearing Assessment and Management)
- Until the 1990s, children born with permanent hearing loss typically would **not** have been **identified and diagnosed** until **2½ to 3 years** of age. Since initiation of newborn hearing screening and EHDI programs, the average age **confirmed hearing loss** has **decreased** to **2-3 months** of age. (J. Hoffman & K. Beauchaine; M. Harrison, J. Roush, & J. Wallace)

## Universal Newborn HEARING Screening (UNHS)

- 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. (J. Johnson, et al., 1993)
- Approximately **2.5 million**, or 5.4%, of all school-aged children, have **mild** or **unilateral hearing loss**. Over **1/3** 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**. (J. Hoffman & K. Beauchaine, 2007)

## Universal Newborn HEARING Screening (UNHS)

- 1969
  - Formed: audiology, otolaryngology, pediatrics and nursing.
- 1972
  - First delineated the first **high-risk factors** for hearing loss and recommended following infants with these high risk factors: history of hereditary childhood hearing impairment, congenital perinatal infection such as rubella or other nonbacterial fetal infection like cytomegalovirus, and herpes; craniofacial anomalies, birth weight less than 1500 grams and a bilirubin level greater than 20.
- 1982 & 1994
  - Revised: More risk factors for HL added
- 2000
  - Recommends universal screening of hearing loss before hospital discharge and identifies Principles and Guidelines for hospital and state level programs.

## Joint Committee on Infant Hearing (JCIH)

- Basic EHDI Components
  - Newborn Hearing Screening
  - Pediatric Diagnostic Audiological Evaluation
  - Early Intervention



**Early Hearing Detection and  
Intervention Program (EHDI)**

- Maternal and Child Health Bureau
  - Early Hearing and Detection Intervention (EHDI) Grants
- Florida Department of Health – Newborn Screening Advisory Committee
- UM – Mailman Center for Child Development – Department of Audiology and Speech Language Pathology

**Advocacy**

- Indiana Government website
  - <http://www.in.gov/isdh/20215.htm>
- National Newborn Screening & Genetics Resource Center
  - <http://genes-r-us.uthscsa.edu/>
- National Center on Hearing Assessment and Management.
  - <http://www.infanthearing.org/resources/fact.pdf>
- 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
- 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.
- Joint Committee on Infant Hearing. (2007). Year 2007 position statement: Principles and guidelines for early hearing detection and intervention. Available at [www.asha.org/policy](http://www.asha.org/policy).
- Johnson JL, Mauk GW, Takekawa KM, Simon PR, Sia CCJ, Blackwell PM. Implementing a statewide system of services for infants and toddlers with hearing disabilities. *Seminars in Hearing*. 1993;14:105-119.
- 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.

## References