

ENT

NEWBORN HEARING SCREENING - ASSESSMENT AND INTERVENTION

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Abstract: *Congenital hearing loss is one of the most common birth defects. The incidence (1-2 cases per 200 infants) is considerably higher in infants in neonatal intensive care units. It is an established fact that detection and intervention within the first six months of life is crucial for and often associated with favourable developmental outcomes. The identification and remediation of all newborns with hearing loss before 6 months of age has now become an attainable realistic goal in almost all the developed countries. Considering the constraints in a developing country like ours, a two tier, centralized newborn hearing screening program is successfully implemented in Ernakulam District, Kerala. It is the practicability of this program that makes it relevant for replication in other cities of our country, making it a model screening program for any developing country.*

Keywords: *Disability, Hearing loss, Universal newborn hearing screening.*

Points to Remember

- *The incidence of hearing loss is 1-3 per 1000 births and 1-2 per 200 infants in NICU.*
- *All newborns should be screened for hearing loss before discharge from hospital or at the first immunization visit.*
- *Identification and remediation before 6 months of age is associated with near normal speech and language development.*
- *The concept of centralized cost effective 2 tier screening protocol successfully implemented in Ernakulam District, Kerala is worth replicating.*

References

1. Parving A, Hauch AM, Christensen B. Hearing loss in children: epidemiology, age at identification and causes through 30 years [in Danish]. *Ugeskr Laeger* 2003; 165(6):574-579.
2. Van Straaten HL, Tibosch CH, Dorrepaal C, Dekker FW, Kok JH. Efficacy of automated auditory brainstem response hearing screening in very preterm newborns. *J Pediatr* 2001; 138(5):674-678.
3. Yoshinaga-Itano C, Coulter D, Thomson V. Developmental outcomes of children with hearing loss born in Colorado hospitals with and without universal newborn hearing screening programs. *Semin Neonatol* 2001; 6(6):521-529.
4. AAP. Joint Committee on Infant Hearing 1994 position statement. *Pediatrics* 1995; 95:152-156.
5. Davis A, Wood S. The epidemiology of childhood hearing impairment: factors relevant to planning of services. *Br J Audiol* 1992; 26:77-90.
6. Watkin PM, Baldwin M, McEnery G. Neonatal at risk screening and the identification of deafness. *Arch Dis Child* 1991; 66:1130-1135.
7. Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs. *Pediatrics* 2007; 120:898-921.
8. Barsky-Firsker L, Sun S. Universal newborn hearing screenings: a three year experience. *Pediatrics* 1997; 99(6):95-99.
9. Downs MP. Universal newborn hearing screening - the Colorado story. *Int J Pediatr Otorhinolaryngol* 1995; 32:257-259.

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10. Mason JA, Herrmann KR. Universal infant hearing screening by automated auditory brainstem response measurement. *Pediatrics* 1998; 101:221-228.
11. D' Agrstino JA, Austin L. Auditory Neuropathy: a potentially under recognized neonatal intensive care unit sequel. *Adv Neonatal Care* 2004; 4:344-353.
12. Paul AK. Early Identification of Hearing Loss and Centralized Newborn Hearing Screening Facility - The Cochin Experience. *Indian Pediatr* 2011; 48:356-359.
13. Paul AK. Centralized Newborn Hearing Screening in Emakulam, Kerala. *Indian Pediatr* 2015; 53:15-17.
14. Joint Committee on Infant Hearing; American Academy of Audiology, American Academy of Pediatrics; American Speech-Language-Hearing Association; Directors of Speech and Hearing Programmes in State Health and Welfare Agencies. Year 2000 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programmes. *Pediatrics* 2000; 106:798-817.
15. Boppana SB, Fowler KB, Pass RF, Rivera LB, Bradford RD, Lakeman FD, et al. Congenital Cytomegatovirus infection: association between virus burden in infancy and hearing loss. *J Pediatr* 2005; 146:817-823.
16. Pediatric Working Group and Fred H. Bess. Amplification for Infants and Children with Hearing Loss. *Am J Audiol* 1996; 5:53-68.
17. Arehart KH, Yoshinaga itnoc, Thomson V, Gabbard SA, Brown AS. State of the states: the status of universal newborn screening, assessment and intervention systems in 16 states. *Am J Audiol* 1998; 7:101-114.