

2017 Alabama Newborn Screening Conference



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Mythbusters: Universal Newborn Hearing Screening Edition

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Objectives

- Discuss myths associated with universal newborn hearing screening (UNHS) training
- Provide tips and resources for UNHS training
- Discuss research related to UNHS training

Myth #1

- On the job training for UNHS is sufficient

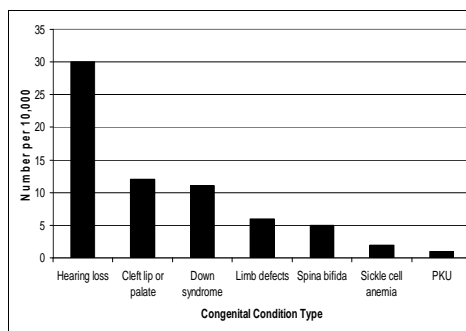


Hearing Loss Statistics

- 3 in 1,000 babies are born with hearing loss
- NICU
 - 1 to 2 babies in 100 births are born with hearing loss



#1 Birth Defect



<http://www.infanthearing.org>

Risk Factors for hearing Loss

- **Caregiver concerns***
 - about hearing, speech, language, development
- **Family history***
 - of permanent childhood hearing loss

JCIH, 2007
* = greater risk for delayed onset HL

Risk Factors for hearing Loss

- **NICU stay > 5 days or any of following (regardless of length of stay):**
 - ECMO assisted ventilation*
 - Ototoxic medications (gentimycin, tobramycin)
 - Loop diuretics (furosemide, Lasix)
 - Hyperbilirubinemia requiring exchange transfusion

Risk Factors for hearing Loss

- **In Utero infections**
 - CMV*, herpes, rubella, syphilis, toxoplasmosis
- **Craniofacial anomalies**

JCIH, 2007
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Risk Factors for hearing Loss

- **Physical findings (e.g. white forelock)**
- **Syndromes* involving hearing loss**
 - Neurofibromatosis, osteopetrosis, Usher, Waardenburg, Alport, Pendred, Jervell & Lange-Nielson

JCIH, 2007
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Risk Factors for hearing Loss

- **Neurodegenerative disorders**
 - Hunter syndrome
 - Sensory motor neuropathies (Friedrich ataxia, Charcot-Marie-Tooth)

JCIH, 2007
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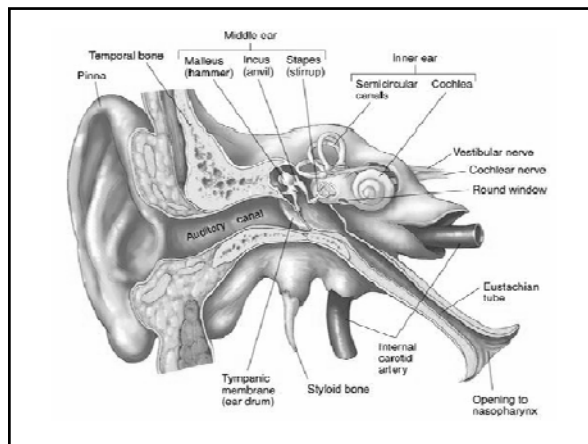
Risk Factors for hearing Loss

- **Culture positive postnatal infections associated with HL***
 - Herpes, varicella, meningitis
- **Head trauma (basal skull, temporal bone)***
- **Chemotherapy***

JCIH, 2007
* = greater risk for delayed onset HL

Testing Basics

- **Automated Auditory Brainstem Response Test (AABR)**
 - Measures the auditory nerve’s response to sound



Myth #2

- A screening refer/fail is bad



UNHS Basics

- Goal of the screening is to identify the need for additional testing



EDHI Goals

- 1-3-6
 - Screen hearing by 1 month of age
 - Diagnosis hearing loss by 3 months of age
 - Intervention by 6 months of age

Consequences of a Delayed Diagnosis

- Hearing loss = an invisible acoustic filter that distorts, smears, or eliminates incoming sounds

Consequences of a Delayed Diagnosis

- Impact on verbal language acquisition
 - We speak because we hear and we speak what we hear
- Destructive impact on the higher level linguistic skills of reading and writing.

Tips for newborn hearing screening

- Quiet Place to Screen
- Inspection the Ear
- Relaxed, sleeping baby
- Well-fed Baby
- Comfortable and Swaddled

Myth #3

- A refer/fail happens because there is debris in the ear canal and it will clear up on it's own



Reasons for Refers

- Baby screened too early
- Debris in ear canal or fluid in middle ear
- High Impedance
- Myogenic Noise
- Electrical Noise
- Baby may have hearing loss

Communication with parents

- Must be careful on how results of the screenings are relayed to parents
- Laugen (2013) found the screening experience was important to parents of babies that were diagnosed with hearing loss

Laugen, N.J. (2013). Providing information to families in newborn hearing screening follow-up: Professional Challenges. *Seminars in Hearing*, 34(1), 11-18.

Resources

Resources for Training

- National Center for Hearing Assessment and Management (NCHAM)
 - Interactive Web Based Newborn Hearing Screening Training Curriculum
 - <http://www.infanthearing.org/nhstc/index.html>

Additional Resources

- Frequently Asked Questions
 - http://www.infanthearing.org/infant_screening_course/nhstc_faqs.pdf
- Script for telling parents you are going to screen their babies hearing
 - http://www.infanthearing.org/infant_screening_course/whattosay-script.pdf

Additional Resources

- Script for if parents refuse the screening
 - http://www.infanthearing.org/infant_screening_course/whattosay-refuse-script.pdf

Additional Resources

- Scripts for communicating results to the parents
 - Pass Result
 - http://www.infanthearing.org/infant_screening_course/passing-script.pdf

Additional Resources

- Pass Result-High Risk for Hearing Loss
 - http://www.infanthearing.org/infant_screening_course/passing-script-highrisk.pdf

Additional Resources

- Refer Result
 - http://www.infanthearing.org/infant_screening_course/not-passing-script.pdf

Additional Resources

– Refer Result-High Risk for Hearing Loss

- http://www.infanthearing.org/infant_screening_course/not-passing-script-highrisk.pdf

Resources

Research

- **Gehring, C.E. & Jones, A. L. (2017). Information Given to Parents of Neonatal-Intensive Care Unit Graduates on Hearing. Journal of Early Hearing Detection and Intervention, 2(1), 29-39.**
- <http://digitalcommons.usu.edu/jehdi/vol2/iss1/4/>

Survey Question	Percentage
Child had a NBHS prior to hospital discharge	98.6%
Child Passed NBHS	91.9%
Child spent 5 or more days in the NICU	91.7%
Child spent less than 5 days in the NICU and had at least one other risk factor for hearing loss	8.3%
Was not told to monitor their child's hearing upon NICU discharge	79.5%
Was not told they would receive a letter regarding follow-up on their child's hearing**	84.2%
Was not told by professionals that their child had positive risk factors for hearing loss	74.5%

Research

- **Roberts, C.P. & Jones, A. L. (forthcoming). Measuring knowledge and understanding of universal newborn hearing screenings in nurses. Journal of Early Hearing Detection and Intervention**

Research

- **In general, the findings of this study suggest that nursing professionals do not feel they are adequately up-to-date concerning administering and interpreting UNHS testing.**
- **Study participants who completed this specific online training made improvements in their pre- and post-testing across both objective and subjective measures.**

Research

- This indicates that the present training model is an effective way to update professionals' current knowledge while expanding their overall understanding.

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