

# Just What Do Your Pediatric Audiologists Know?

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# California Infant Audiology Symposium, July 2009

- California Newborn Hearing Screening Program
- California Title V Program for Children with Special Needs
- Joint Committee on Infant Hearing (JCIH) 2007 Position Paper
  - Appropriate infant diagnostic test battery
  - Appropriate treatment for infants with hearing loss
- California Part-C Early Intervention Program
- California Speech-Language Pathology and Audiology Board Ethical Standards
- Auditory Neuropathy Spectrum Disorder and evaluation in infants
- Cochlear implant referrals

# Pre and Post Test

- Questions submitted by speakers
- All multiple choice
- 25 questions total
  - 3-5 questions per topic
- Identical questions pre and post test
- Pre given at opening
- Post given after final speaker

# Participants



- 74 Audiologists
- 5 “Non-audiologists”
- Demographic information included:
  - Type of Degree
    - MS, AuD, Ph.D., “other”
  - Where last degree was obtained
    - In residence CA
    - In residence other
    - Online
  - Years licensed

# Participants

- Self-Measures of Pediatric Knowledge and Experience
  - Scale 1 to 7, 1 = “Very Little” and 7 = “Pediatric Specialist”
  - Same scale for knowledge and experience on pre and post test



# Results

	Pretest	Post-Test
Average %	63.9%	80.7%
Average Score	16.0	20.2
High Score	24	24
Low Score	8	13
Mode	14	21
Median	16	20
Standard Deviation	3.1	2.5

# Results

- Pretest Passing Score:
  - 21/79
  - 26.6%
- Post-Test Passing Score:
  - 71/79
  - 89.9%



# Results

- No one question was exposed as a problem question
- Questions missed by  $\frac{1}{2}$  or more in pre-test
  - The national and California loss to follow-up statistics
  - The appropriate follow-up for a NICU infant referring on an inpatient hearing screen
  - How to report screening and diagnostic results
  - Benefits of California's Title V Program



# Results

- Questions missed by ½ or more in pre-test (continued)
  - Appropriate Early Intervention referral process
  - Communication outcomes most studied in children with hearing loss
  - Signs that must be present in a patient with Auditory Neuropathy Spectrum Disorder (ANSD)
  - Contraindications to cochlear implantation and ANSD
  - Normal tympanogram indications
  - Middle ear muscle reflexes in infants



# Results

- Questions missed by  $\frac{1}{2}$  or more in post-test
  - How to report screening and diagnostic results
  - Contraindications to cochlear implantation and ANSD



# Participant Demographics

AuD - 42	MS - 28	Ph.D. - 4
2 – In res. CA	18 – CA	2 – CA
4 – In res. OS	10 - OS	2 – OS
36 – Online		



# Results by Degree

- The winners...
- Au.D. in residence and Ph.D.!
  - Online Au.D. and Master Degree scored near equivalent, average 16.3 on pretest and 19.9 on post-test
  - Years of licensure indicated corresponding increase in scores as experience increased
  - Au.D. outscored Ph.D. in pretest, but Ph.D. outscored everyone post-test with average 23.3

# Self titled “Pediatric Audiologists”



- Pretest
  - 31 indicated they were “Pediatric Specialists”
  - 18 indicated maximum rating of experience with children
- Post-test
  - 23 indicated they were “Pediatric Specialists”
  - 44 indicated they were closer to being a Pediatric Specialist after the symposium

# Results



- 52.7% of participants believed they increased their knowledge of pediatric audiology after the symposium
- 92.4% improved their test scores
- 68.4% improved their test scores by 20% or more

# What now?

- Questions missed by most participants included state-specific, programmatic questions
  - While information may be available in print, providers are not trained in navigating state or federal programs



# What now?



- ANSD was the least known type of hearing loss
  - Tympanometry and acoustic reflex interpretation also initially presented as unknown
  - Anecdotally ABR bone conduction is not used enough clinically, but respondents indicated they knew it should be used



# What now?



- Skewed confidence in providers
  - For 1/3 of providers who rated themselves high pretest, self-measures of knowledge and experience DECREASED with presentations
  - For providers who rated themselves low pretest, self-measures increased to midline

# What now?

- Of the 31 that initially rated themselves as “Pediatric Specialists”, only 11 passed the pretest
- The remaining 10 who passed the pretest rated themselves between 3-5 on experience and knowledge
- 21 Pediatric Specialists did not change their self-measure, and only 1 still failed the post-test

# What now?

- This forum for teaching was effective in the short-term for learning
- EHDI programs need to offer specific training to providers for navigating state systems
- Further definition of “Pediatric Specialists” is necessary from national and state organizations

# Questions?

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