Hearing Screening Practices in Child Find

CDE Child Find Meeting
March 7, 2014

- FACILITATOR:
  - **Lisa Cannon, AuD, CCC-A**
    Educational Audiologist, Denver Public Schools
  - Audiology Coordinator, Colorado Dept of Education

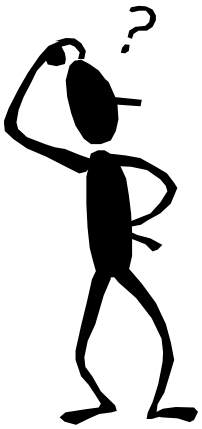
- EDUCATIONAL AUDIOLOGIST PANALISTS:
  - **Farrel Evans, MA, CCC-A, FAAA**, Mt. Evans BOCES
  - **Tara Guinn, AuD, CCC-A**, Denver Public Schools
  - **Debra Gwinner, AuD, CCC-A, FAAA**, Cherry Creek SD
  - **BJ James, MA, CCC-A**, Centennial BOCES; Morgan County, Weld RE8/RE-3J

Agenda

- 0-10 Overview of Guidelines
- 10-25 Survey of Colorado AU's CF Hearing Screening Practices
- 25-50 Panelist Audiologists
- 50-75 Question & Answer / Open Discussion

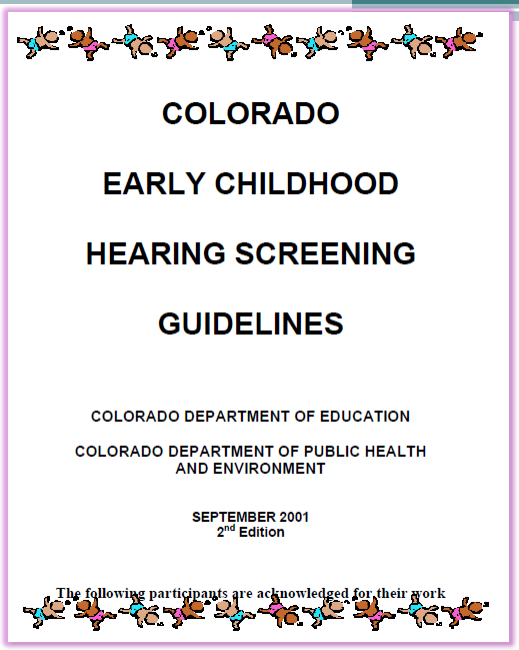
Why Do We Screen?

- To determine if further medical and/or audiological testing is needed
- To rule out hearing loss as a possible impact on a child's development and academic performance



State Guidance

- Colorado Infant Hearing Guidelines 🕮
- Early Childhood Hearing Screening Guidelines 🕮
- CDE Audiology Standards of Practice (school age) 🕮



COLORADO

EARLY CHILDHOOD

HEARING SCREENING

GUIDELINES

COLORADO DEPARTMENT OF EDUCATION

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

SEPTEMBER 2001
2nd Edition

The following participants are acknowledged for their work

Hearing Screening Components

- History
- Visual Inspection of the Ear (otoscopy if trained)
- Middle ear (immittance) Screening (tympanogram)
- Audiometric Screening

(PAGE 5 of Guidelines)

II. RECOMMENDED EARLY CHILDHOOD HEARING SCREENING PROCEDURES

SCREENING COMPONENTS	RECOMMENDATIONS		REFERRAL CONSIDERATIONS
HISTORY	Ask for information regarding the following: • Family history of hearing loss • Number of episodes of ear infections; tubes or other ear surgeries • Problems during pregnancy or delivery • Concerns regarding speech/language, developmental delay • Previous hearing screening or testing		This information should be part of the referral and follow-up process. Concerns noted through history should increase the importance of obtaining audiometry and immittance results
VISUAL INSPECTION OF THE EAR	Look for: • Structural defects • Drainage from the ear canal If trained in otoscopy, also look for: • Ear canal abnormalities • Foreign objects/tubes • Condition of the tympanic membrane		Any concerns should be noted, but not used to refer for medical attention and/or audiological attention if audiometry and immittance screenings are passed.
AUDIOMETRIC SCREENING	PROCEDURES FOR CHILDREN WHO CAN NOT RESPOND TO CONVENTIONAL PURE TONE SCREENING METHODS	PROCEDURE FOR CHILDREN WHO RESPOND TO TRADITIONAL PURE TONE SCREENING METHODS	All frequencies must be heard in both ears in order to pass the pure tone screening.
	Conduct one or more of the following as appropriate: • Sound Booth Visual Reinforcement audiometry (VRA) • Automated Otoacoustic Emissions The following procedures are conducted only upon recommendation of the audiologist • Auditory Brainstem Response (ABR/BSER) • Diagnostic Otoacoustic Emissions (OAE)	Utilizing conditioned play audiometry, conduct a screening utilizing a pure tone audiometer at the following frequencies and decibel levels: 20dBHL @ 1000, 2000 & 4000Hz.	
IMMITTANCE	PASS: Gradient (tympanometric width) value is less than 200 (daPa or mmH_20) NOT PASS: Gradient value is greater than 200 (daPa or mmH_20); then also record ear canal volume. If OAE is present, immittance not required. [Note: Immittance screening is not appropriate for infants under 6 months of age].		Referrals determined in conjunction with other findings and duration of conditions.

Important Notes:

1. Parent consent should be obtained prior to conducting hearing screening.
2. Children should be referred to an audiologist when hearing screening results cannot be obtained within two weeks of the initial Child Find screen.
3. All children, birth through 3rd grade, should have an annual hearing screening regardless of whether or not they passed newborn screening or family story of hearing loss.
4. All hearing screening programs should be developed and conducted in collaboration with an audiologist.

Audiometry

- Conventional pure tone screening
  - **20dB** @ 1000, 2000, 4000 Hz. Frequencies

ALL SOUNDS MUST BE HEARD IN BOTH EARS TO PASS!

- Non-Conventional OAE screening
  - As appropriate – automated pass/refer
    - **ONLY FOR CHILD WHO CANNOT PARTICIPATE IN CONVENTIONAL SCREENING!**

Audiometry: Developmental Level

- Play techniques should be attempted for 2.5-3 years and older - depends upon the (developmental) age of the child

What are OAE's?

- OAE's are sounds generated by the inner ear in response to sounds generated outside the ear canal
- OAE's are *not a hearing test;* however, OAE responses can typically be measured from normal hearing ears
- Typically appropriate for children from birth to developmentally under 3 years of age
  - Should only be used to screen children who cannot participate in pure tone screening with headphones
- Utilizes automated, preset criteria determined by an audiologist to measure OAE's at 1000-6000 Hz
- OAE's are extremely sensitive to noise and movement. It is important to ensure the environment is quiet and the child is still and quiet before beginning

PURE TONE AND IMMITTANCE SCREENING

FOLLOW - UP

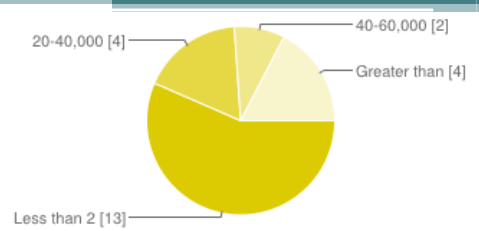
1. All children who do not pass audiometry and immittance screening should be rescreened within two to four weeks unless referred for immediate medical or audiological evaluation.
2. Children who do not pass the second screening should be managed according to the follow-up recommendations in the chart below.
3. Any concerns identified through history and/or visual inspection of the ear (structural defects, ear canal abnormalities, drainage, excessive wax) should be interpreted in conjunction with immittance and audiometric screening results. If pure tones and immittance are passed, the history/visual inspection concerns may be noted but should not be considered a basis for referral. If pure tones and/or immittance are not passed, then the history/visual inspection concern should be noted with the referral. It is important that these children be seen for hearing screening annually.

RESCEENING RESULTS	OUTCOME	REFERRAL	FOLLOW-UP
Audiometry - PASS Immittance - PASS	Normal	None	Routine annual screening
Audiometry – PASS Immittance – NOT PASS	Possible abnormal middle ear function	To audiologist	Monitor and refer to physician when necessary; if condition persists 3 months or more a medical referral is recommended
Audiometry - NOT PASS Immittance - NOT PASS	Possible abnormal middle ear function and hearing loss	To audiologist and/or physician depending upon significance of findings	Monitor and refer to physician when necessary; rescreen tympanometry and audiometry after medical treatment; refer back to physician if tympanometry is still abnormal
Audiometry - NOT PASS Immittance - PASS	Possible hearing loss	To audiologist	Management based upon audiologist's recommendations

Child Find Survey of Hearing Screening Practices

January 2014

Participants



- 22 total participants

Size of participating AU's:

- Less than 20,000: 13
- 20-40,000: 4
- 40-60,000: 2
- Greater than 60,000: 3

Participating AU's

- Adams 1
- Adams 14
- Adams 50
- Brighton
- Centennial BOCES
- Delta & Montrose
- Greeley
- Littleton
- Morgan County
- Mt. Evans BOCES
- Pueblo
- San Juan BOCES
- Southeast BOCES

- Academy 40
- Boulder Valley
- Colorado Springs Dist 11
- East Central BOCES

- Adams 12
- Cherry Creek

- Douglas County
- Jefferson County
- Denver

Who performs the hearing screening for Child Find?

- Audiologist Only: 50% (11)
- Combo Audiologist & Other: 32% (7)
- Technician or Other Only: 14% (3)
- Nurse Only: 4% (1)
  - Other may include: speech language pathologist, paraprofessional, technician, Child Find Coordinator

Who Performs?

- C/IFSP, C to B, B?
  - Generally the same person performing the screening in each situation
- Differences by size of district?
  - Slightly more likely to be audiologist only in the smaller AU's
  - Slightly less likely to be audiologist only in the rural AU's

When does hearing screening occur?

- Prior to developmental screening: 41% (9) *
- Other/Varies: 27% (6)
- During the developmental screening: 18% (4)
- After the developmental screening but prior to evaluation: 14% (3)
- After the developmental evaluation: 0

Who provides the training for non-audiologist screeners (if applicable) and how often?

- Audiologist: Performs training 100% (17)

- Annually: 7
- Semi-annually: 2
- Other: 8
  - Initial training with no scheduled follow-up (2)
  - Annually and then as needed (1)
  - As needed/varies (3)
  - Whenever a new person joins team (2)

What type of hearing screening is performed?

- OAE's and tympanometry: 1
- OAE's, tympanometry, CPA: 8
- OAE's, tympanometry, CPA or VRA/COR: 11
- OAE's, tympanometry, CPA, traditional: 1
- OAE's, tympanometry, CPA, VRA/COR, speech: 1

- CPA = Conditioned Play Audiometry
- VRA/COR = Visual Response Audiometry / Conditioned Oriented Response *(only performed in booth by audiologist)*

What type of screening OAE is used?*

- DPOAE Low 65-55: 9
- DPOAE High 70-70: 2
- TEOAE: 12

**23 responses because one participant answered two types used within the district or BOCES*

What referral criterion is used for tympanometry?

- Gradient only: 2
- Tympanometric peak only: 2
- Ear canal volume only: 0
- Gradient, tympanometric peak, & ear canal volume: 8
- Gradient and tympanometric peak: 1
- Gradient and ear canal volume: 3
- Ear canal volume and tympanometric peak: 6

How does the developmental evaluation process change when a child refers on hearing screening?

- Stop the evaluation: 2
- Continue with the evaluation and follow-up as needed: 12
- Other: 9

How does the developmental evaluation process change when a child refers on hearing screening?

Other:

- Part C: Continue with evaluation and follow-up as needed and Part B: Stop the evaluation until child is rechecked by audiologist and cleared to proceed or referred to physician or private audiologist for a diagnosis that will be treated/monitored before being cleared to proceed (2)
- Depends on primary area of concern (For example, motor only concern would be cleared to proceed with follow-up later but speech/language concern would have the process stopped) (1)
- Depends on hearing screening results (4)
- Discretion of screening team (1)

For students with identified educationally significant hearing loss, who attends the initial IEP meeting?

- Audiologist only: 4
- Teacher of the Deaf and Hard of Hearing only: 1
- Both TOD & Audiologist: 18

How often is communication occurring among participants in the hearing screening process?

- Daily: 6
- Weekly: 8
- Monthly: 2
- Other: 6
  - Not needed (1)
  - As needed (4)
  - If an issue occurs (1)

Top 6 challenges or issues encountered in the Child Find hearing screening process?

- Staffing, during both the school year and summer
- Poor follow-up by families in general and when a child does not pass the hearing screening but does not qualify for services
- Lack of information available other languages
- How to train and maintain non-audiologist screeners
- Funding
- High referral rate and time and audiology staff to meet the need

Q & A / Open Discussion