



Developing and Spreading a Statewide Protocol for Diagnostic Testing

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Disclosures

I have no relevant financial or nonfinancial relationships in the products or services described, reviewed, evaluated or compared in this presentation.

Agenda

- Discuss the recommended protocol for follow-up testing in Ohio.
- Explain how electronic reporting was used to establish baseline data of diagnostic testing among audiologists.
- Describe methods to implement statewide testing protocols using quality improvement methodologies.

Ohio's EHDI Program

- 129 birthing facilities
- 138,000-140,000 births per year
- 4,000 babies refer
- 200+ diagnostic audiologists
- Estimated 275 diagnostic evaluations conducted monthly
- Estimated 35- 50 babies diagnosed with hearing loss monthly

Electronic Reporting

- All audiologists report electronically.
- More detailed diagnostic information about types of tests performed, test results and hearing status.
- Reduce possibility of errors (data entry, mail, fax, etc.)
- Reduces time between diagnosis and referral for Early Intervention services.
- Allows monitoring of diagnostic trends and outcomes.

Testing Patterns

- Reviewed the types of tests used to conduct a follow-up evaluation, by audiologist, and the number of each test performed.
- Testing completed between November 2017 to February 2018
 - ABR by clicks and tone pips,
 - DPOAE, TEOAE
 - Tympanometry.

Types of Diagnostic Testing by Audiologist

<u>Audiologist</u>	DxABR	OAE	DPOAE	TEOAE	Tymp	Total
XXXXXXXXXX		2	2			4
XXXXXXXXXX	6		4		4	14
XXXXXXXXXX						
XXXXXXXXXX						
XXXXXXXXXX	2		4		4	10
XXXXXXXXXX	18		16			34
XXXXXXXXXX						
XXXXXXXXXX	54		14		14	82
XXXXXXXXXX	2			2		4

Total Frequencies Tests and Ranges of Tests

Wave V		500Hz		1000Hz		2000Hz		4000Hz	
Total	Range ^a	Total	Range ^a	Total	Range ^a	Total	Range ^a	Total	Range ^a
4	55	4	55-65	4	65				
		2	40	2	35	2	30	2	35
18	30								
32	20-100	31	20-80	31	15-90	32	15-90	32	15-90
2	30								
66	20-50 ^b							1	20
		6	20	6	20	6	20	6	20
10	35								
		10	20-60	10	20-40	10	20-60	10	20-50
24	20	2	30						
6	30-35 ^b	8	40 ^b					7	30 ^b
4	20	137	20-80 ^b	110	20-85 ^b	142	20-NR90 ^b	129	20-NR90 ^b
17	20	25	20					21	20

Undetermined Results

- Goal – reduce the number of evaluations with undetermined and unconfirmed results.
- Established a baseline for all reporting audiologists.
 - Families not returning for additional testing.
 - Increased loss to follow-up rate
- Facility based Improvement Strategies.
- Survey for audiologists with largest rates.

Percentages of Undetermined

Audiologists with 50 or more diagnostic evaluations							
Total Evaluations	Undetermined Evaluations	Percent of Evals that are Undetermined Results	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
65	18	27.7%	29.4%	31.3%	26.7%	23.5%	
108	21	19.4%	32.4%	10.3%	10.3%	25.0%	
182	11	6.0%	7.3%	7.0%	1.7%	10.3%	
73	23	31.5%	22.2%	42.1%	21.4%	42.1%	
57	4	7.0%	14.3%	0.0%	8.3%	0.0%	
61	3	4.9%	0.0%	6.3%	7.7%	9.1%	
160	50	31.3%	26.5%	27.1%	25.7%	44.2%	
68	2	2.9%	0.0%	10.0%	6.3%	0.0%	
72	4	5.6%	0.0%	4.8%	9.5%	8.3%	
62	11	17.7%	20.0%	35.7%	14.3%	5.3%	
114	4	3.5%	8.6%	4.2%	0.0%	0.0%	
60	3	5.0%	5.3%	4.5%	9.1%	0.0%	
96	17	17.7%	7.4%	20.0%	14.3%	80.0%	

Statewide Protocol for Diagnostics

- History of COACH (Coalition of Ohio Audiologists and Children's Hospitals)
 - 2015 taskforce
 - Formed to establish standardized diagnostic evaluation measures for infants who did not pass their newborn hearing screening.
 - Members
 - Audiologists who provide follow-up testing for newborn hearing screening both at Children's hospitals and in other settings, pediatric otolaryngologists, and the Ohio Department of Health EHDI program.

Approved by UNHS Subcommittee

Limited Diagnostic Protocol

1. Case History, external ear exam and otoscopy.
2. DPOAE or TEOAE.
3. 1000-Hz Tympanometry.
4. Click/Chirp (Air) Bilateral 60 dB nHL and 25 dB nHL.
5. If clicks or chirps are present in both ears at 25 dB nHL and OAEs and Tymps are normal, testing is complete.

Full Diagnostic Protocol

- Limited diagnostic + more.
- Air conduction tone bursts @ 4000 Hz and 1000 Hz first; switch ears and repeat.
- Proceed to 500 Hz and 2000 Hz.
- Bone conduction tone bursts – start with test frequencies not within normal limits.
 - If all frequencies are not within normal limits, start with 1000 Hz.

The Cincinnati Training

- Early Hearing Loss Detection: Protocols for Diagnostic Audiological Assessment Follow-up to Newborn Hearing Screening
- June 2017 – 3 day conference;
10 presentations
- 4 weeks of online preparation
 - Readings
 - Weekly chats

Moving the Training Online

- Worked with Cincinnati Children's Hospital Medical Center and the Ohio Speech and Hearing Professionals Board.
- 10 presentations - video-taped.
 - Placed on OhioTrain.
- Continuing education units offered.
- Comprehensive Handbook of Pediatric Audiology gifted so readings were available.

In–Person Regional Trainings

- Six areas around the state chosen.
- Children’s hospitals.
- Ohio-specific training.
- Introduced presentations on the OhioTrain Platform.
- Provided a syllabus and book agreement.

Syllabus and Book Agreement

- 13 book chapters + JCIH Position statement
- 12 weeks to complete the training
- Recommend reading the book chapters first and then viewing the presentation.
- Pre/Post test; Free CEUs
- One 30-minute conference call
- Complete the requirements – Keep the book

Quality Improvement

- Measuring change over time.
 - Undetermined results
 - Protocol usage
- Provide resources for facility improvements.
- Conference calls.
- Regional trainings.

Questions ???

Contact Information

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Ohio EHDI Presentations

'The Ripple Effect from a Team Approach in EHDI'

Presenter: Reena Kothari, ODH Staff

Date: Tuesday, March 5, 2019

Time: 10:15 AM-10:40 AM

Room: Davinci A/B

'Universal Newborn Hearing Screening (UNHS) Warehouse Project for Hospitals to View Hearing Screening Records'

Presenter: Mallory Minter-Mohr, ODH Staff

Date: Monday, March 4, 2019

Time: 2:15 PM-2:40 PM

Room: Narita A/B