Critical Community Collaborations: Ensuring EHDI in Time of Crisis

EHDI 2022 Virtual Conference

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Meet the Team

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Learning Outcomes

1. Attendees will be able to identify the impact that the COVID-19 pandemic had on infant diagnostic testing after referral on newborn hearing screening.
2. Attendees will be able to describe community collaboration and how partnerships between healthcare providers and EHDI staff can facilitate early identification.
3. Attendees will be able to evaluate evidence-based resources used to facilitate diagnosis of childhood hearing loss.

EHDI in Ohio

1 Screening → 3 Diagnosis → 6 EI Enrollment

0 Screening **Birth Hospital → 3 Diagnosis OP Care Center → 6 EI Enrollment HMG

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Ohio Department of Developmental Disabilities

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Community Collaboration in Ohio

2014

Initial Collaboration Meeting and Call to Action

2015

COACH Protocol Formulation and Refinement

2016

COACH Protocol Adoption

2017

Three-day Training

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2018/Beyond

Plans for Behavioral Guidelines

- Cincinnati Children's Hospital Medical Center
- Nationwide Children's Hospital
- Ohio Department of Health
- Ohio Audiologists & Providers
- UNHS Sub-committee
- NCHAM

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COVID-19 Timeline in Ohio

CRASH!

CATCH-UP

March 2020

Severe Restriction

OPs limited by Stay Safe Order 3/12 through 5/1

June 2020

Moderate Restriction

OPs limited by social distancing and infection control

September 2020

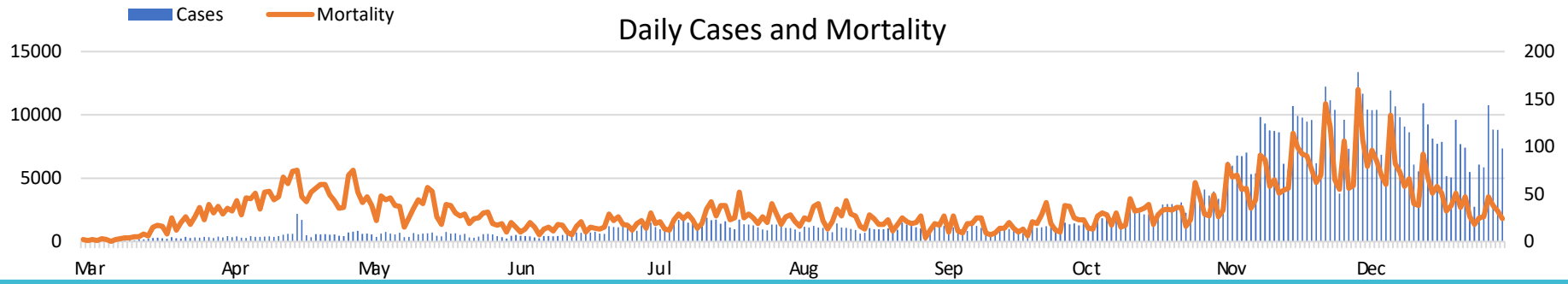
Residual Reticence

Increase in Cases and mortality rate

December 2020

Residual Reticence

Increase in Cases and mortality rate



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Audiology Work Group- 2020

- Goal: To provide evidence-based guidance to diagnostic centers regarding the implementation of triage/prioritization for the catch-up phase of diagnostic testing in Ohio.
- Expected Outcomes:

1. To ensure timely diagnosis (by 3 months of age or as soon as possible) .
2. To reduce loss-to follow-up that can occur as a result of interruption of typical clinical service delivery during national or global crises.

Community Collaboration

Audiology Work Group (Est. 2020)

- Holle Aungst, AuD- CCF Hillcrest Hospital
- JoLynn Blair, MA, CCC-A, Dayton Children's
- Ursula Findlen, PhD- Nationwide Children's
- Gina Hounam, PhD- Nationwide Children's
- Lisa Hunter, PhD- Cincinnati Children's
- Reena Kothari, AuD- Ohio Department of Health
- Prashant Malhotra, MD- Nationwide Children's
- Rachel Maynard, AuD- Adena Regional Medical Center
- Linda McGinnis, MA, CCC-A- Dayton Children's
- Susan Wiley, MD- Cincinnati Children's
- Carrie Wingo, AuD- Cincinnati Children's

Cleveland Clinic

ADENA Health System

dayton children's

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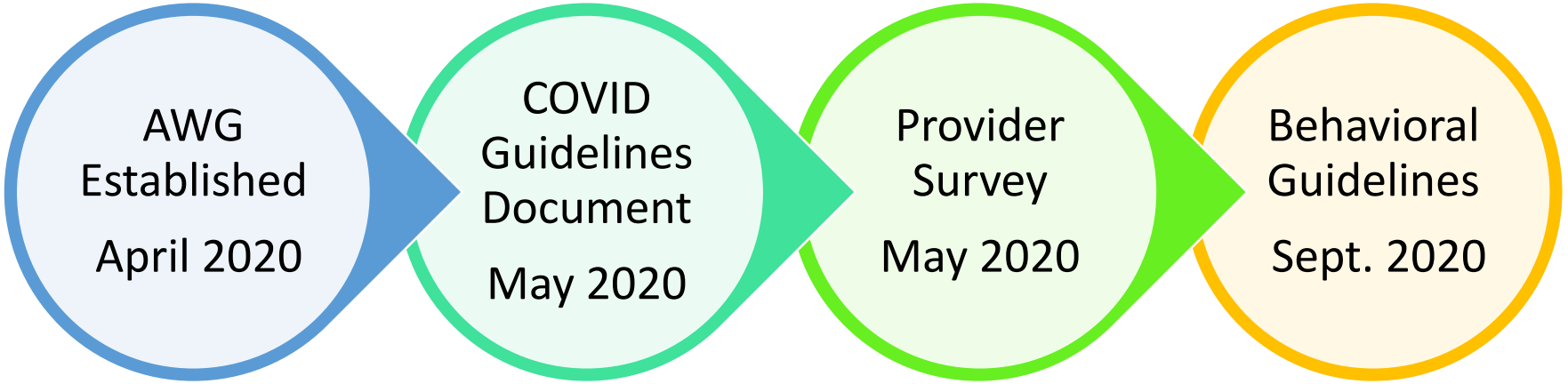
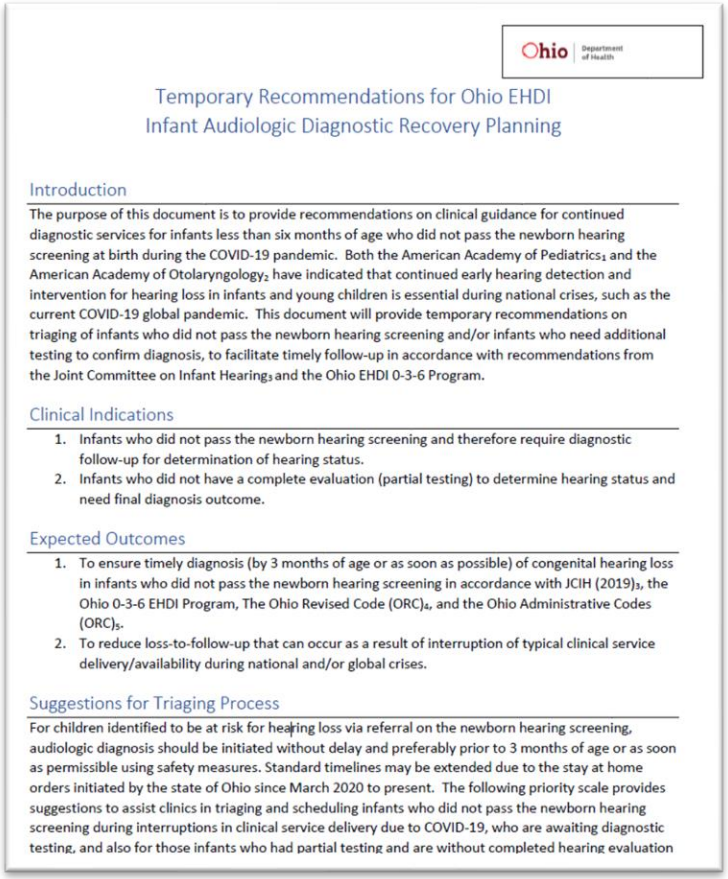
Workgroup Timeline



COVID Guidance Document



Ohio Department of Health

Temporary Recommendations for Ohio EHDI
Infant Audiologic Diagnostic Recovery Planning

Introduction

The purpose of this document is to provide recommendations on clinical guidance for continued diagnostic services for infants less than six months of age who did not pass the newborn hearing screening at birth during the COVID-19 pandemic. Both the American Academy of Pediatrics[1] and the American Academy of Otolaryngology[2] have indicated that continued early hearing detection and intervention for hearing loss in infants and young children is essential during national crises, such as the current COVID-19 global pandemic. This document will provide temporary recommendations on triaging of infants who did not pass the newborn hearing screening and/or infants who need additional testing to confirm diagnosis, to facilitate timely follow-up in accordance with recommendations from the Joint Committee on Infant Hearing[3] and the Ohio EHDI 0-3-6 Program.

Clinical Indications

1. Infants who did not pass the newborn hearing screening and therefore require diagnostic follow-up for determination of hearing status.
2. Infants who did not have a complete evaluation (partial testing) to determine hearing status and need final diagnosis outcome.

Expected Outcomes

1. To ensure timely diagnosis (by 3 months of age or as soon as possible) of congenital hearing loss in infants who did not pass the newborn hearing screening in accordance with JCIH (2019)[3], the Ohio 0-3-6 EHDI Program, The Ohio Revised Code (ORC)[4], and the Ohio Administrative Codes (ORC)[5].
2. To reduce loss-to-follow-up that can occur as a result of interruption of typical clinical service delivery/availability during national and/or global crises.

Suggestions for Triaging Process

For children identified to be at risk for hearing loss via referral on the newborn hearing screening, audiologic diagnosis should be initiated without delay and preferably prior to 3 months of age or as soon as permissible using safety measures. Standard timelines may be extended due to the stay at home orders initiated by the state of Ohio since March 2020 to present. The following priority scale provides suggestions to assist clinics in triaging and scheduling infants who did not pass the newborn hearing screening during interruptions in clinical service delivery due to COVID-19, who are awaiting diagnostic testing, and also for those infants who had partial testing and are without completed hearing evaluation

- Suggestions for Triaging Process
- Scheduling Guidance
- Other Considerations:
  - COVID-19 Transmission Risk
  - PPE and Precautions
  - Referral to Early Intervention
- Scheduling Surge Solutions

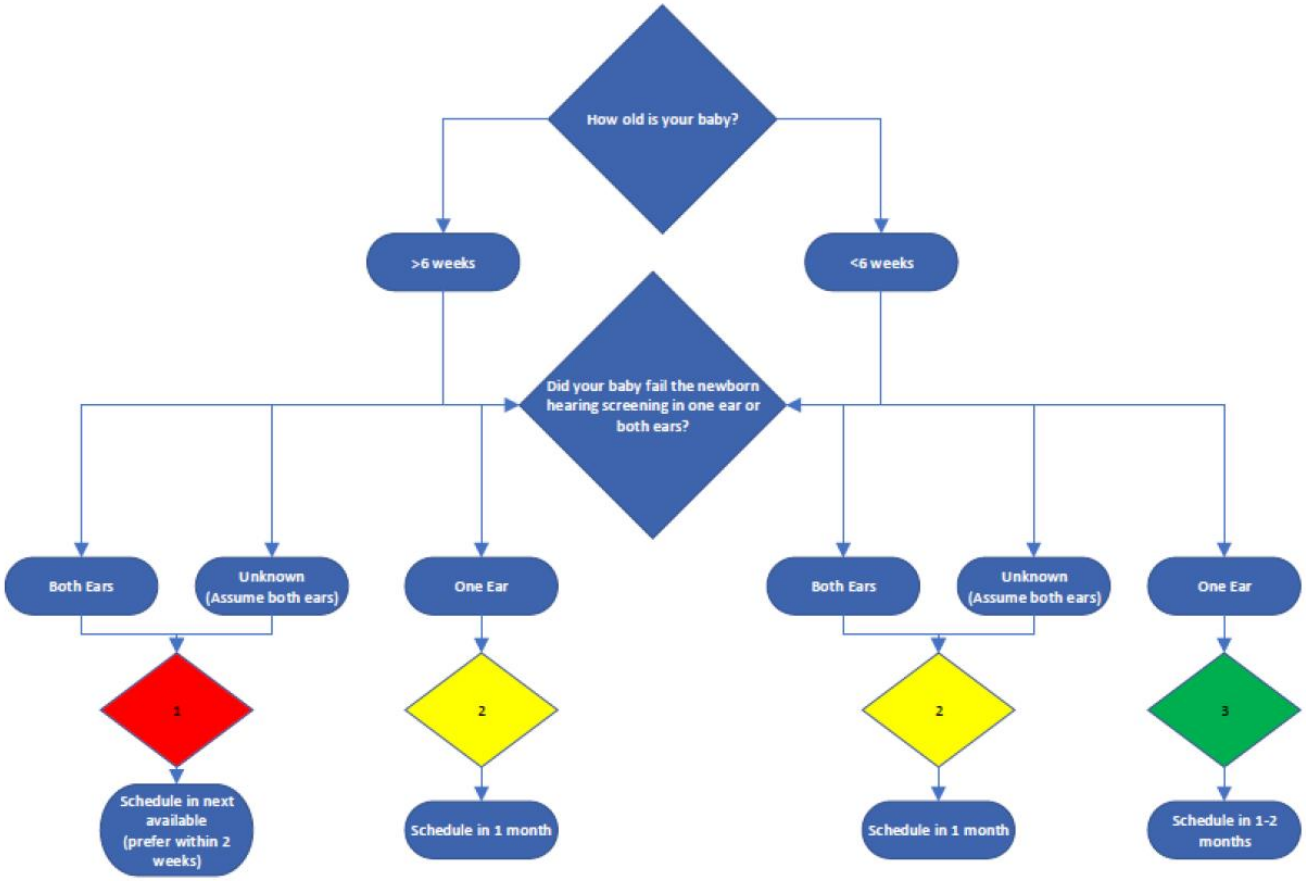
Triaging & Scheduling

Priority 1	Priority 2	Priority 3
▪ Bilateral referral > 6 weeks of age	▪ Bilateral referral < 6 weeks of age ▪ Unilateral referral > 6 weeks of age	▪ Unilateral referral < 6 weeks of age
▪ Schedule ASAP, preferably within 2 weeks	▪ Schedule within 1 month	▪ Schedule in 1-2 months

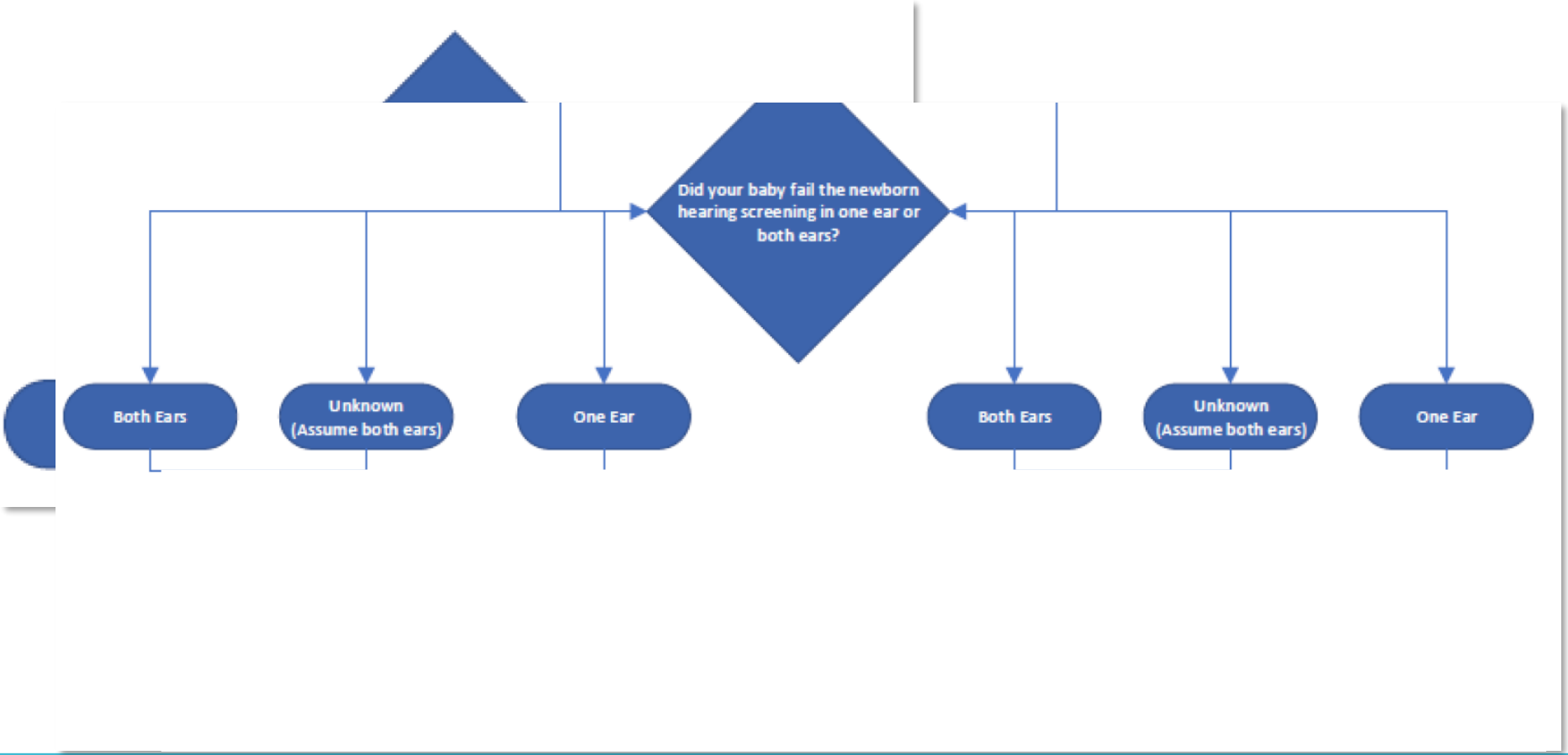
Considerations:

- Current age of infant must be taken into account- schedule older infants first.
- Associated Risk Factors- schedule infants with more risk factors first.
- If laterality of screening unknown, assume bilateral.

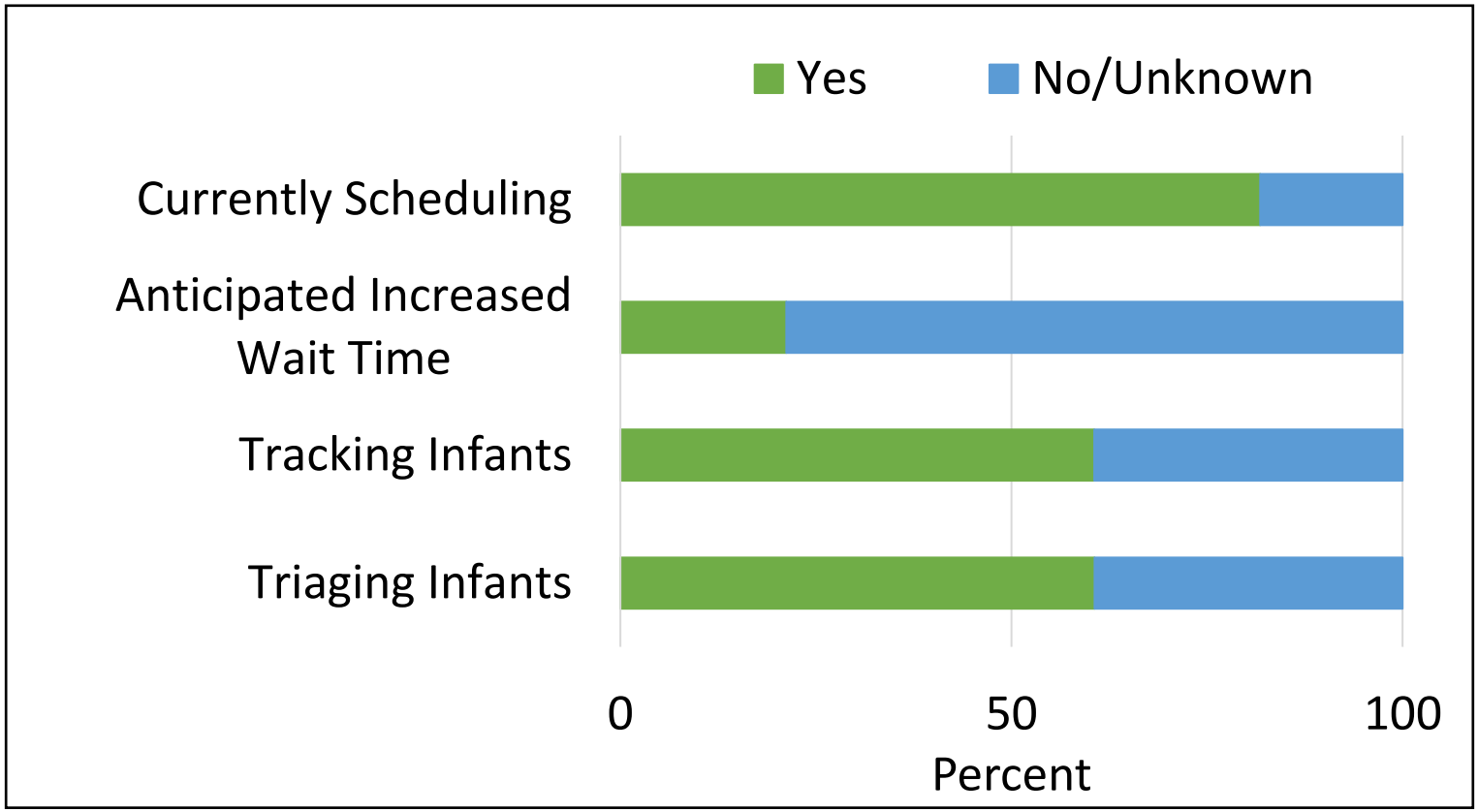
At-a-Glance Decision Tree



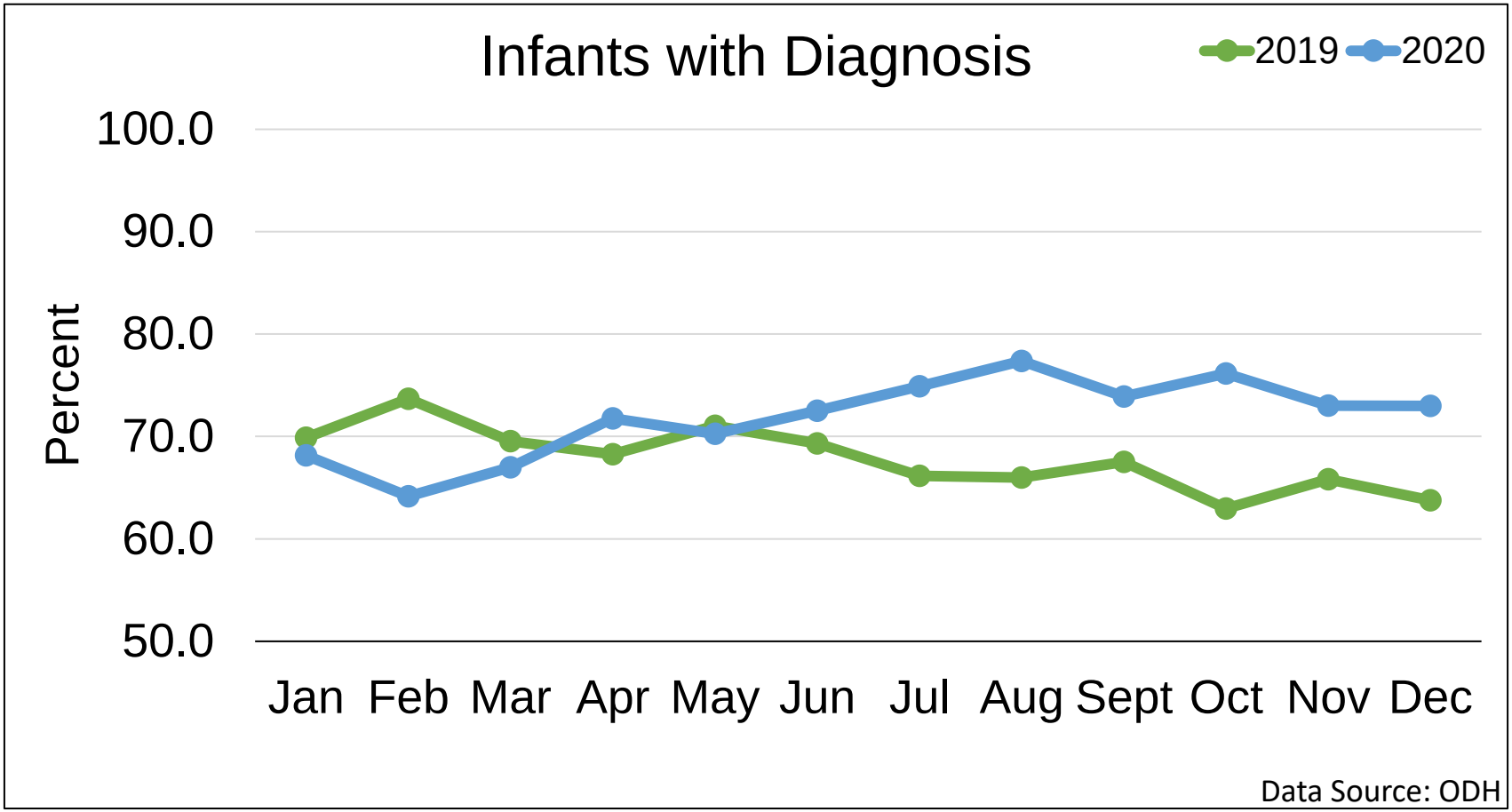
At-a-Glance Decision Tree



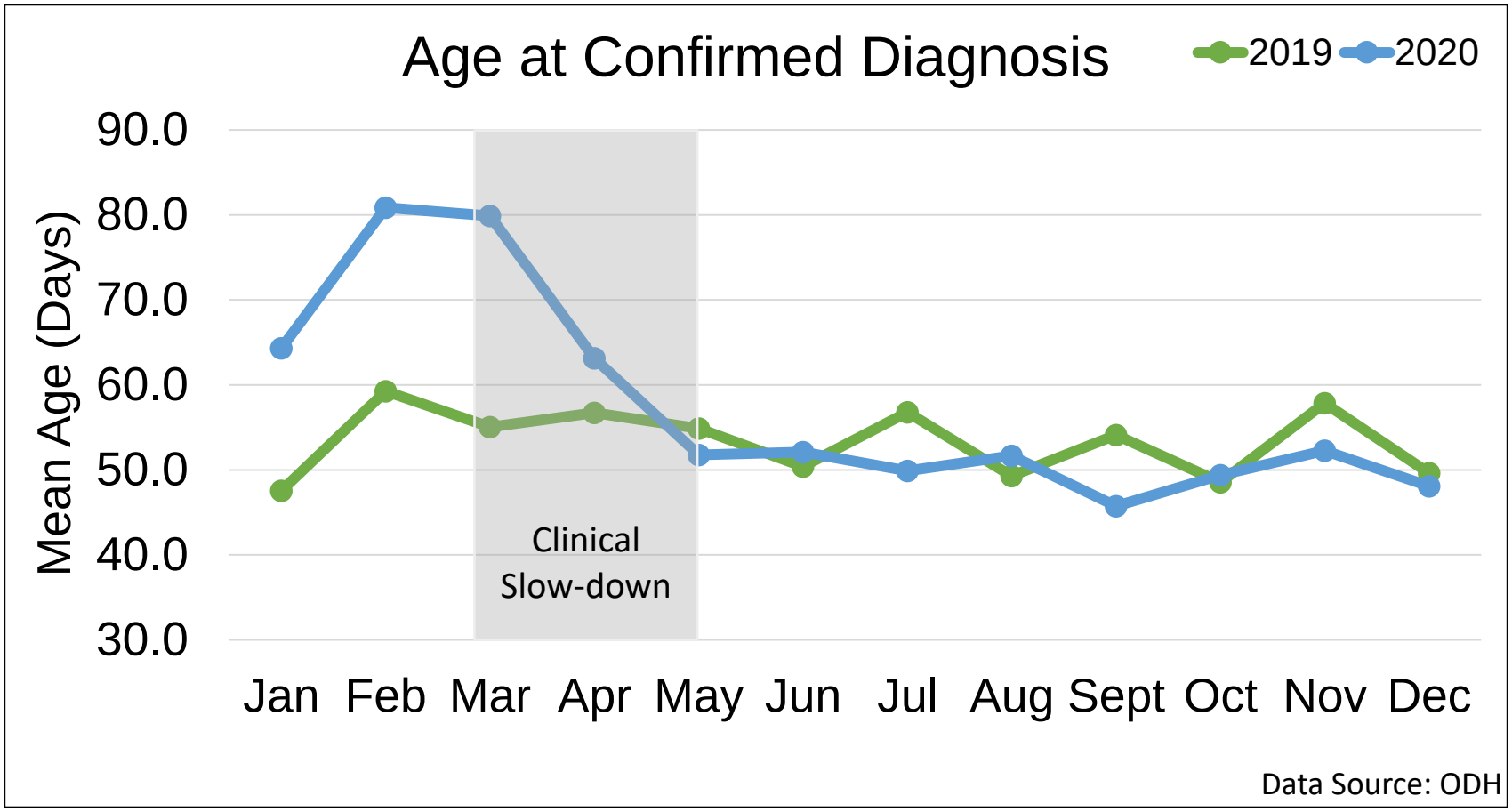
Provider Survey Results



EHDI Outcomes



EHDI Outcomes



EHDI Outcomes

Survey of audiology centers revealed two major factors:

- **Availability**
  - Most centers were open as of May 2020 and did not anticipate delays in scheduling infants.
  - Most centers prioritized ABR appointments over other services, increasing availability for UNHS referrals.
- **Prioritization**
  - Most centers used triaging to prioritize older infants.

- These factors were consistent with workgroup guidance.

EHDI Outcomes

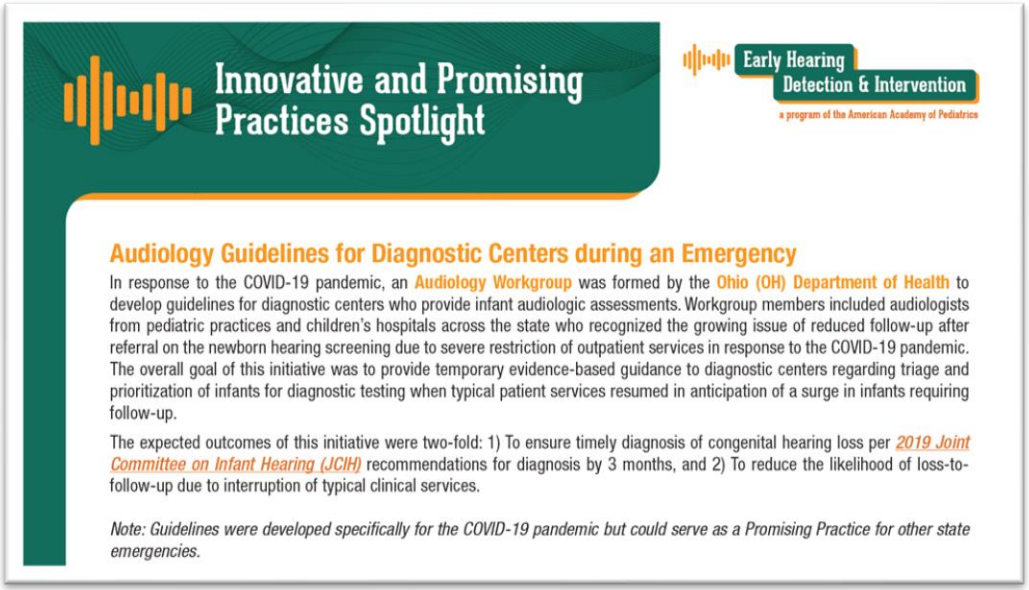
EHDI

is

Essential!

Evidenced-Based Guidelines

- COVID Guidelines may have facilitated reduction in expected loss-to-follow-up during a time of global crisis.
- Guidelines were adopted as an American Academy of Pediatrics EHDI Promising Practice in 2021.



Innovative and Promising Practices Spotlight

Early Hearing Detection & Intervention

a program of the American Academy of Pediatrics

Audiology Guidelines for Diagnostic Centers during an Emergency

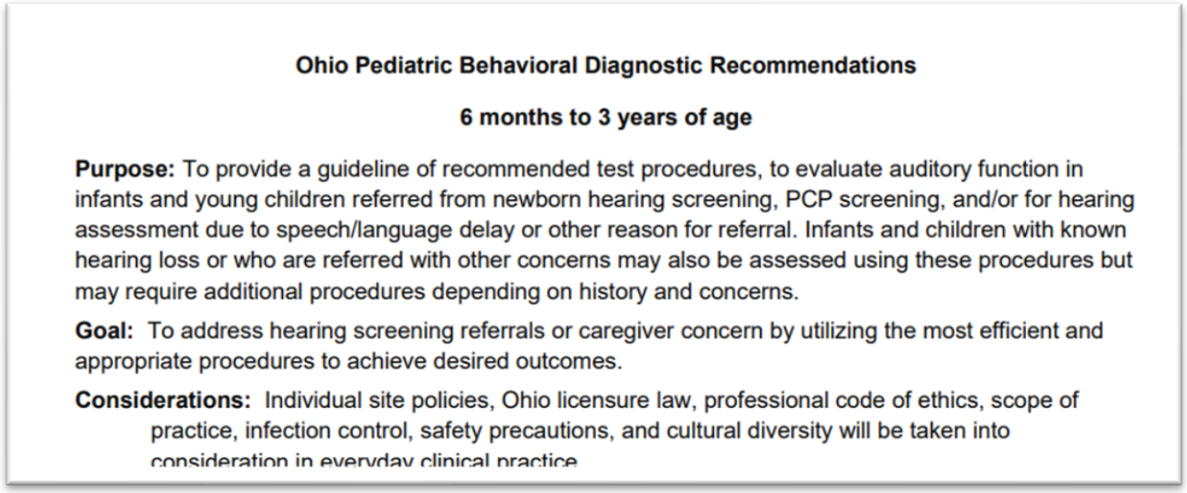
In response to the COVID-19 pandemic, an Audiology Workgroup was formed by the Ohio (OH) Department of Health to develop guidelines for diagnostic centers who provide infant audiologic assessments. Workgroup members included audiologists from pediatric practices and children's hospitals across the state who recognized the growing issue of reduced follow-up after referral on the newborn hearing screening due to severe restriction of outpatient services in response to the COVID-19 pandemic. The overall goal of this initiative was to provide temporary evidence-based guidance to diagnostic centers regarding triage and prioritization of infants for diagnostic testing when typical patient services resumed in anticipation of a surge in infants requiring follow-up.

The expected outcomes of this initiative were two-fold: 1) To ensure timely diagnosis of congenital hearing loss per *2019 Joint Committee on Infant Hearing (JCIH)* recommendations for diagnosis by 3 months, and 2) To reduce the likelihood of loss-to-follow-up due to interruption of typical clinical services.

Note: Guidelines were developed specifically for the COVID-19 pandemic but could serve as a Promising Practice for other state emergencies.

Evidence-Based Guidelines

- Additional resources provided by the workgroup, specifically Pediatric Behavioral Guidelines, may facilitate ongoing "catch-up" for infants still lost to follow-up who are older and cannot be evaluated using natural sleep ABR.



Ohio Pediatric Behavioral Diagnostic Recommendations

6 months to 3 years of age

Purpose: To provide a guideline of recommended test procedures, to evaluate auditory function in infants and young children referred from newborn hearing screening, PCP screening, and/or for hearing assessment due to speech/language delay or other reason for referral. Infants and children with known hearing loss or who are referred with other concerns may also be assessed using these procedures but may require additional procedures depending on history and concerns.

Goal: To address hearing screening referrals or caregiver concern by utilizing the most efficient and appropriate procedures to achieve desired outcomes.

Considerations: Individual site policies, Ohio licensure law, professional code of ethics, scope of practice, infection control, safety precautions, and cultural diversity will be taken into consideration in everyday clinical practice

Evidence-Based Guidelines

Table 1. Guidance Summary

Test	Purpose & Rationale	When to consider
History: Medical and audiologic	Determine parent/provider concerns and determine presence of risk factors for auditory disorders	Ob
Otoscopy and physical examination	Examine the outer ear for any anomalies (including malformation, ear pit, ear tag) Determine status of auditory canal and tympanic membrane (free of debris and foreign bodies, presence of PE tube or tympanic membrane perforation, etc.)	Ob
Behavioral Hearing Tests • Behavioral Observation (BO) (0-5 months developmental age) • Visual Reinforcement Audiometry (VRA 6 months-2½ years developmental age) • Conditioned Play Audiometry (CPA (2½ to 4 to 5 years developmental age)	BO does not provide MRLs and is useful only as a cross-check for physiologic tests, until VRA can be obtained. BO responses should not be recorded as thresholds of hearing sensitivity Assess peripheral hearing status (VRA and CPA) Ear-specific testing is required to assess for unilateral and asymmetric hearing loss. Inserts or TDH earphones are generally well tolerated (Weiss et al., 2016), but if not, sound field may be used to determine auditory access in the better ear, until ear specific data can be obtained. See Tables 2-4 for	Ob Ap de de Fo ob inf

Table 2. Normative Data for VRA with Inserts (Parry et al., 2002)

8 to 12 mos.	Frequency (Hz) Minimum response Level, dB HL			
	500	1000	2000	4000
Mean (SD)	16 (6)	13 (6)	7 (6)	6 (6)
Minimum	0	0	0	-5
Maximum	25	25	25	20

Table 3. Normative Data for VRA with Sound Field (Sabo et al., 2003).

Age Range (mo.)	Frequency (Hz) Threshold, dB HL, Mean (SD)				
	SAT	500	1000	2000	4000
6 to 8	14 (6)	19 (7)	19 (9)	19 (8)	23 (9)
9 to 11	13 (4)	17 (4)	15 (4)	16 (4)	19 (5)
12 to 17	12 (4)	17 (6)	14 (5)	15 (4)	19 (5)
18 to 35	11 (4)	16 (4)	15 (4)	15 (4)	17 (5)

The Next Adventure

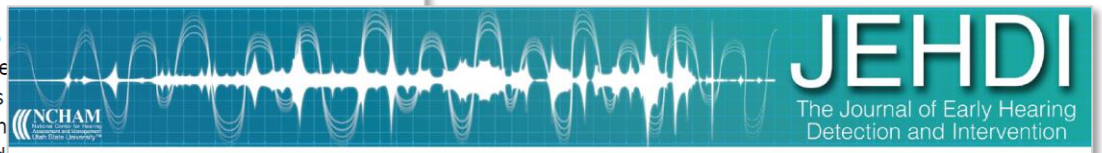
Audiology Work Group COACH Infant Diagnostic Revision

2016

Ohio Department of Health

Recommended Protocols for Diagnostic Audiological Assessment
Follow-up to Newborn Hearing Screening in Ohio

The Early Hearing Detection and Intervention (EHDI) Program at the Ohio
the Coalition of Ohio Audiologists and Children's Hospitals (COACH) forme
standardized diagnostic evaluation measures for infants who did not pass
Members of this taskforce included audiologists at Children's Hospitals an
follow-up for newborn hearing screening, pediatric otolaryngologists, and
EHDI program. A series of statewide stakeholder meetings identified the
audiologic protocols. The task force members have widespread knowledg
infant audiologic testing. Collaboration among the members provided ma
development of this standardized diagnostic evaluation process. This diag
3 months after birth, in which the diagnostic process should be completed
audiologists to comply with best practice for optimal universal hearing los
goals.



2019; 4(2): 1–44

Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs

The Joint Committee on Infant Hearing

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Abbreviations

AAA – American Academy of Audiology
AABR – Automated Auditory Brainstem Response
AAP – American Academy of Pediatrics
ABA – American Board of Audiology
ABR – Auditory Brainstem Response
AHRQ – Agency for Healthcare Research and Quality
ANSI – American National Standards Institute
ASHA – American Speech-Language-Hearing Association
ASL – American Sign Language

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Fostering Collaboration

Call To Action Email

Dear Colleague,

Please see the below letter asking for your participation in the Audiology Work Group.

February 2, 2022

Dear Pediatric Audiologist Partners,

As Pediatric audiologists, we have an amazing opportunity to impact a child's outcomes in their community. However, we also face challenges every day to reach the best outcomes for all. And despite our best efforts, missed opportunities still exist and the results can be devastating.

COACH, or the Coalition of Ohio Audiologists and Children's Hospitals, was established in 2014 with the goal of improving diagnosis of congenital hearing loss in Ohio. The original COACH Team created Recommended Protocols for Diagnostic Audiological Assessment Follow-up to Newborn Hearing Screening in Ohio to ensure infants in Ohio have access to equitable, evidence-based care. This protocol was endorsed by the Ohio Department of Health's Infant Hearing Screening Subcommittee in January 2017. As a result, improvements in assessment based on reported test results have become a reality in our state! The core group began welcoming additional members to the Audiology Work Group to derive the Ohio Behavioral Diagnostic Recommendations in 2020.

24 Audiologists from 11 different organizations involved in Revision Group!

Conclusions

- **Community collaboration** among EHDI Stakeholders has allowed for the formulation of multiple evidence-based guidance documents to improve outcomes for infants who are Deaf or Hard of Hearing.

Conclusions

- Community collaboration allows for different stakeholders across the EHDI Journey to share their expertise and facilitate positive change.
  - Volunteers can be very productive working collectively in partnership with their EHDI program.
  - Collaboration and positive change takes time, but the ultimate payoff is worth it!

References

- Joint Committee on Infant Hearing (2019) Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Program
- Ohio Department of Health COVID-19 Guidelines
- AAP EHDI Promising Practice
- Ohio Department of Health COACH Infant Diagnostic Protocol
- Ohio Department of Health Pediatric Behavioral Guidelines

Thank you!

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