



EHDI and Universal cCMV Screening

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Key Objectives



Discuss process, framework, and timeline for audiology and vestibular monitoring for cCMV

Review how universal cCMV screening has impacted EHDI follow-up in Minnesota

Describe key lessons learned to date

Audiology Guidelines for Infants with cCMV



—EARLY HEARING DETECTION AND INTERVENTION—

SECTION 4: AUDIOLOGY GUIDELINES FOR INFANTS WITH CONGENITAL CYTOMEGALOVIRUS

A section of the Early Hearing Detection and
Intervention (EHDI) Guidelines for Audiologists

Last Revision Approved: December 2022

MN audiology workgroup
created a draft protocol
(Oct 2022)



Guideline review by
colleagues / feedback



Workgroup discussion &
minor edits (Nov 2022)

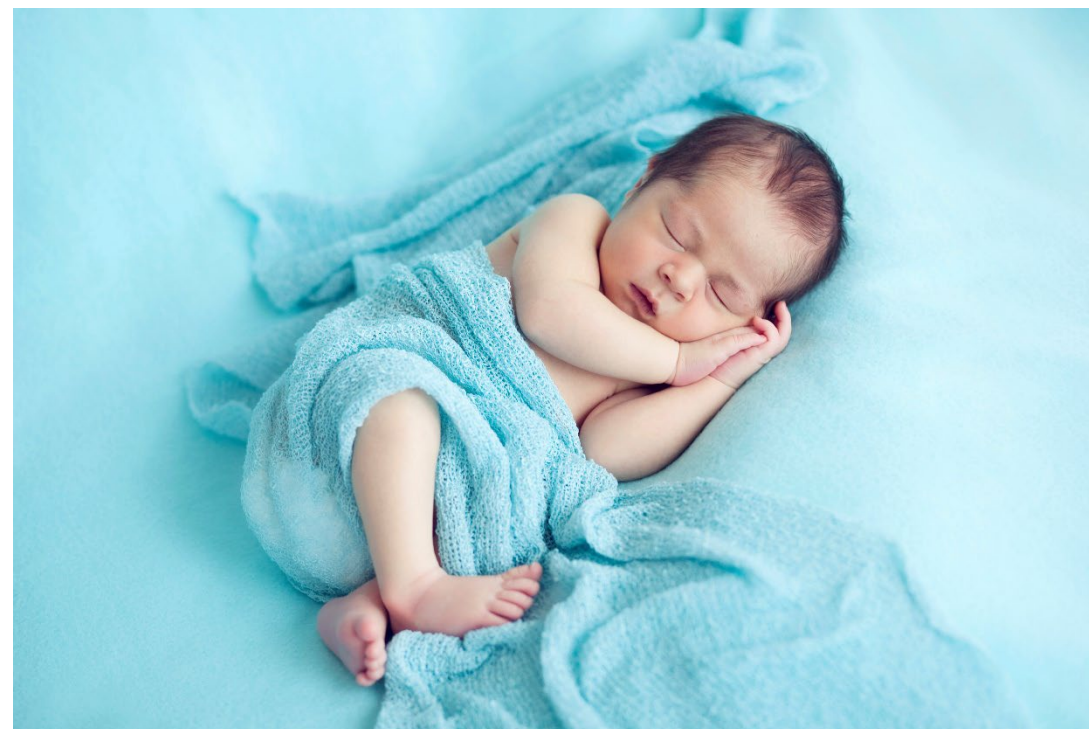


EHDI Advisory Committee
approved guidelines (Dec
2022)

Initial Diagnostic Audiology Assessment

- **By 1 month**

- Auditory Brainstem Response (ABR) by 1 month of age *or*
- no later than 1 month after cCMV confirmed with urine test
- Regardless of birth screen result



2nd Diagnostic Audiology Assessment



- **By 4-5 months of age**

- Auditory Brainstem Response (ABR)
- Vestibular function screening
 - Review child's motor milestones (see Centers for Disease Control and Prevention (CDC) Milestone Checklists)

Monitoring Audiology Visits **Up to Age 2 Years**

- **Every 3 months**
 - Typical test battery for child's age/skills
 - Limited test battery options for monitoring of infants with typical hearing thresholds.
 - Ear-specific procedures
 - Vestibular function screening
 - Review child's motor milestones



Monitoring Audiology Visits **Age 2 to 6 Years**



- **Every 6 months**

- typical test battery for child's age/skills
- Limited test battery options for monitoring of children with typical hearing thresholds.
- Ear-specific procedures
- Vestibular function screening
 - Ex: one leg standing screen

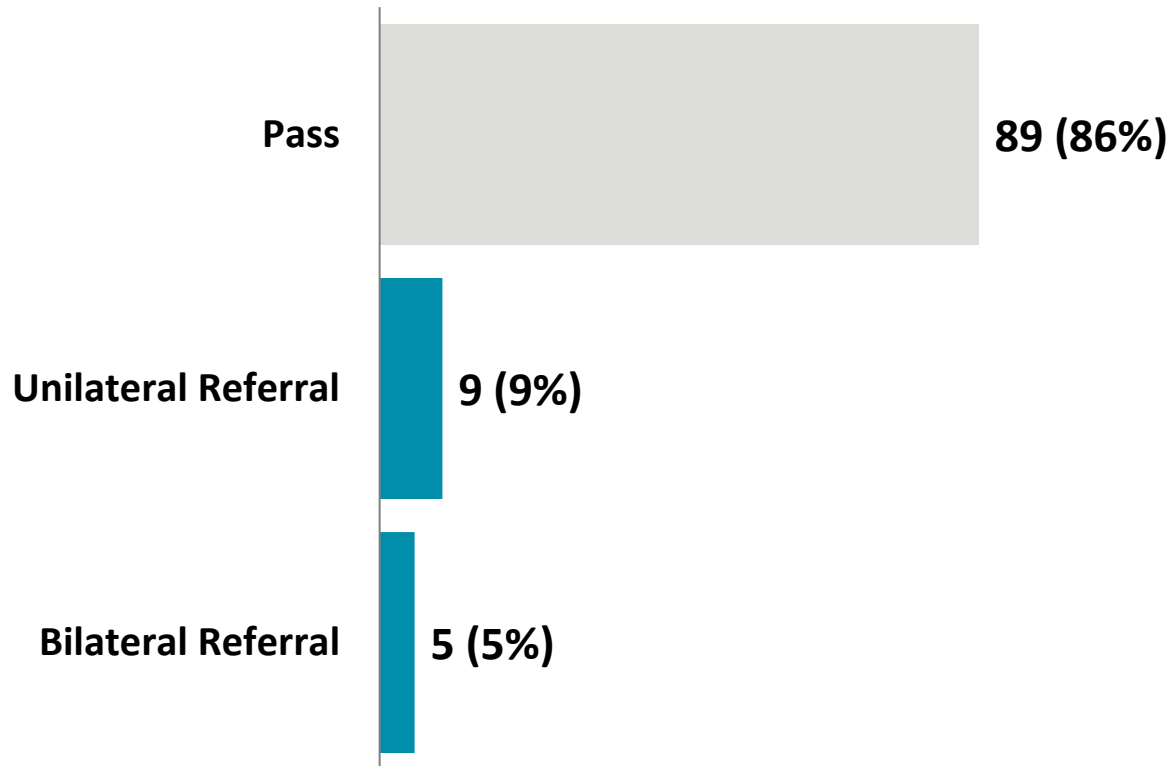
Monitoring Audiology Visits **Age 6-10 Years**

- **Test every 12 months**
- use a typical test battery for child's age/skills
- ear-specific procedures
- Vestibular function screening:
 - Consider the Pediatric Dizziness Handicap Inventory for Caregivers (pDHI-PC) (McCaslin, et al., 2015)



cCMV & Birth Hearing Screen

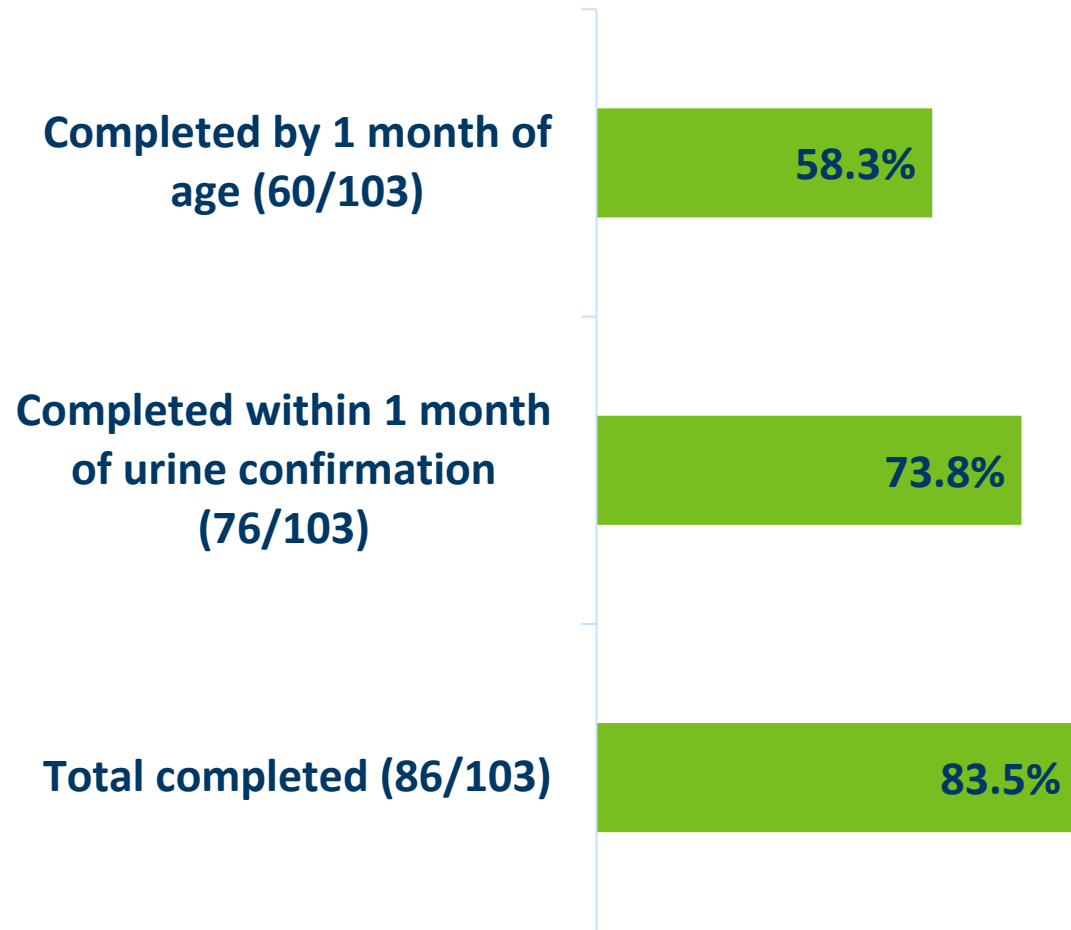
14% of cCMV cases had a **refer result** on their birth screen



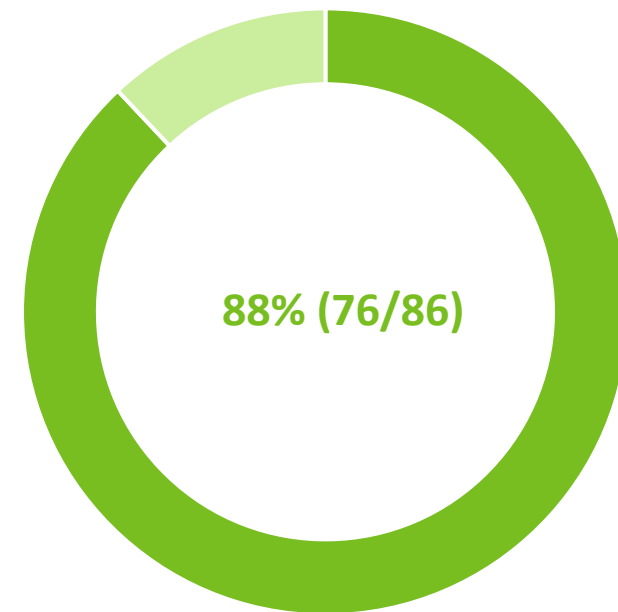
Feb 6 – Sept 2, 2023 (103 infants)



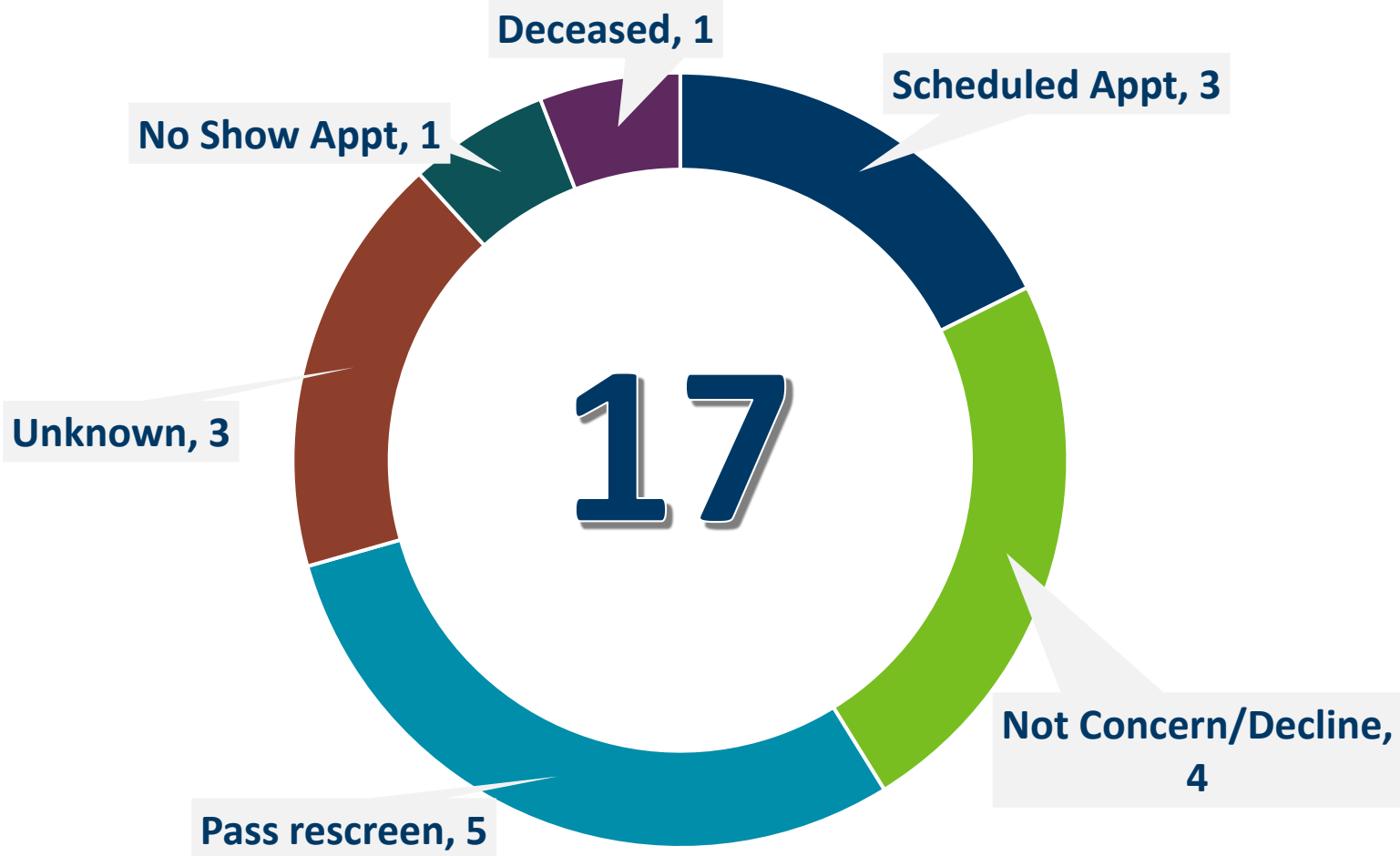
Timeliness of 1st Diagnostic Audiology Assessment



88% of 1st diagnostic assessments reported are completed by 1 month (of age &/or urine confirmation)



Diagnostic Audiology Assessment Not Completed



cCMV & Audiology Assessment

Audiology Appointment Information



Scheduling correct audiology visit type has needed additional support

ABR screen vs ABR diagnostic assessment

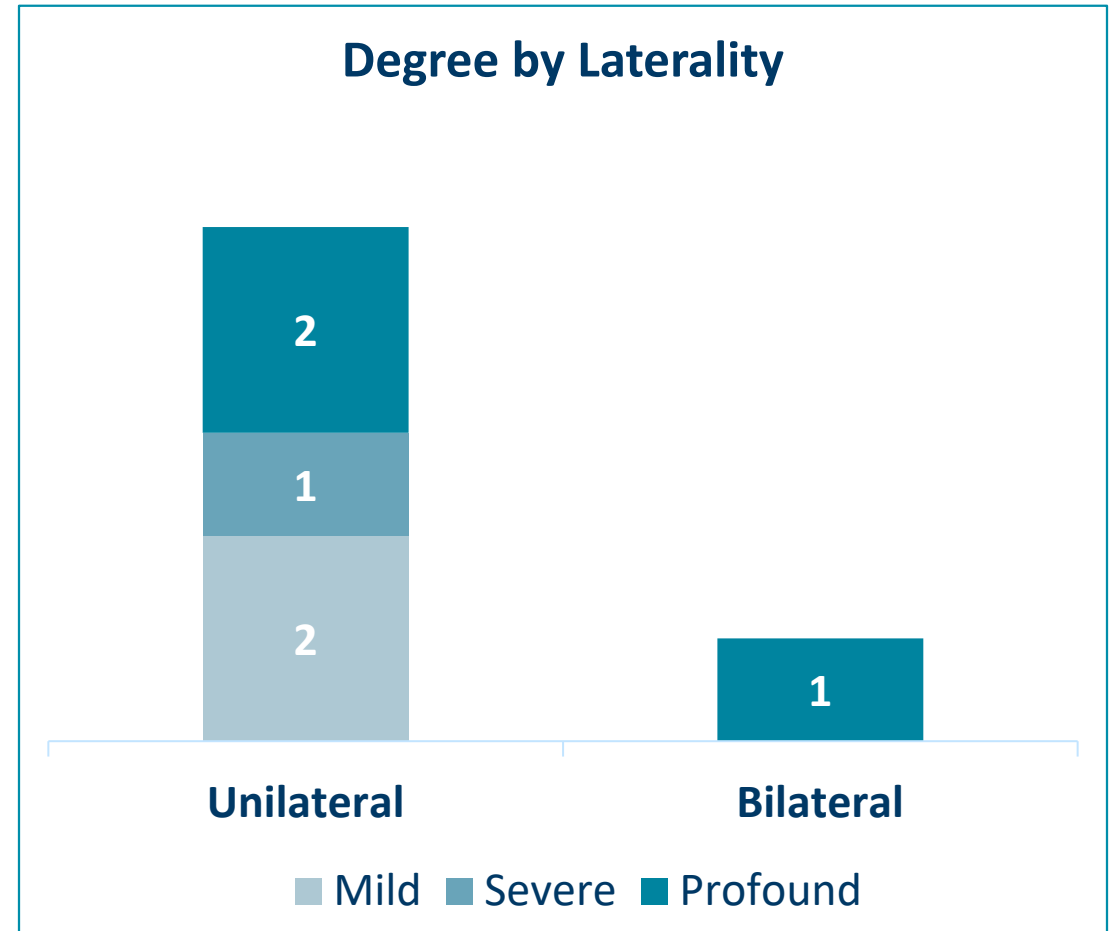
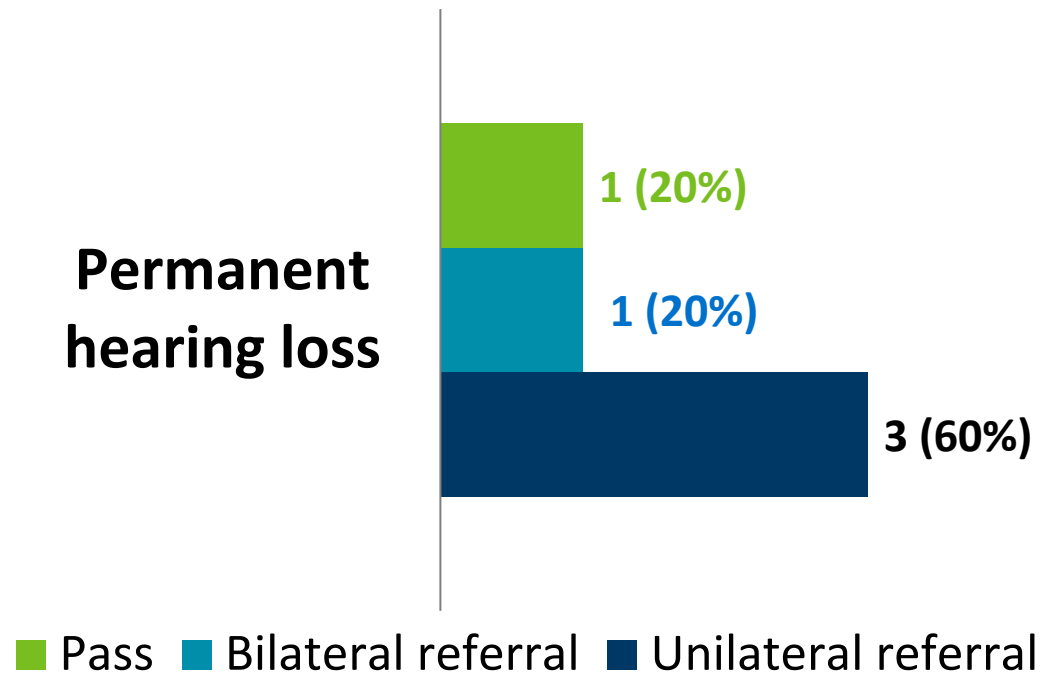
Having CMV specifically noted in the referral helpful

MDH will check for audiology appointment and call to make sure it is a full assessment

Use all tools that we can to help provider have what they need to know so family receives comprehensive/coordinated audiology care

Initial Diagnostic Audiology Assessment

1 of 5 newborns with **permanent hearing loss** **passed** their newborn hearing screen



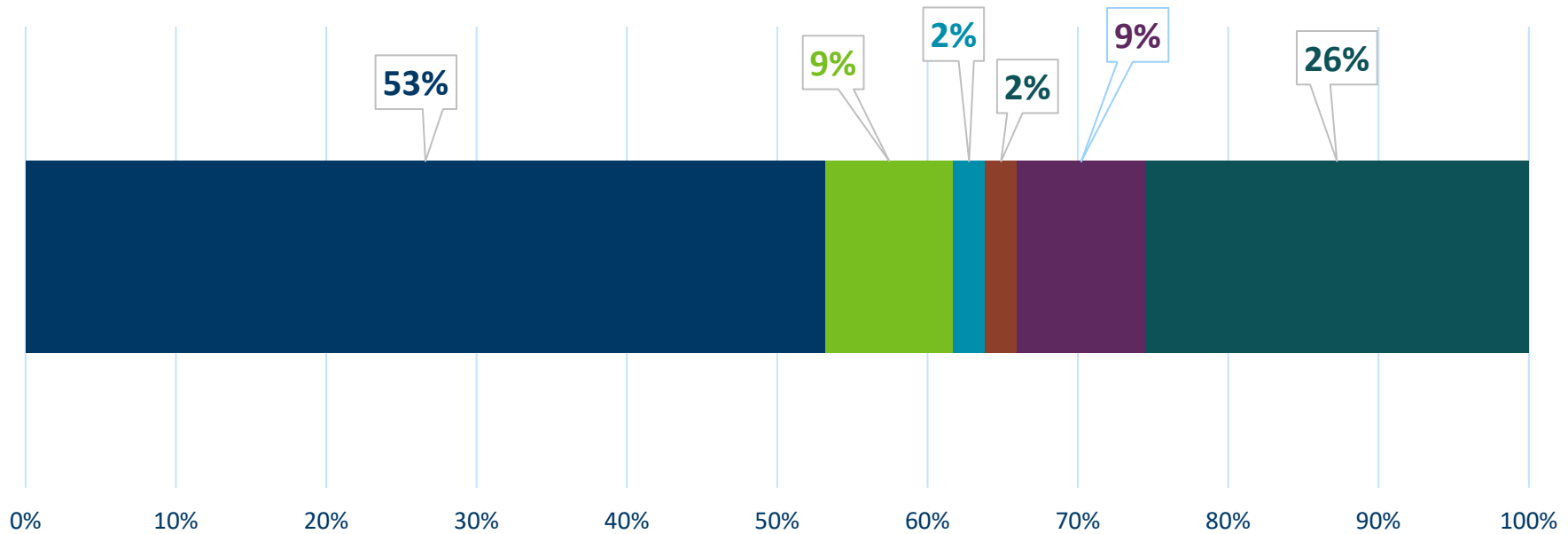
Initial Diagnostic Audiology Assessment

**7 non-permanent
hearing loss**

1 unilateral
refer on
birth screen

6 bilateral
pass on
birth screen

2nd Diagnostic ABR



■ Completed (25)

■ Not Completed- Insurance/transportation Issue (1)

■ PENDING - Scheduled (4)

■ Not Completed- No Show (4)

■ Not Completed - Delayed Initial (1)

■ PENDING - Not checked (12)

Feedback – Audiologists

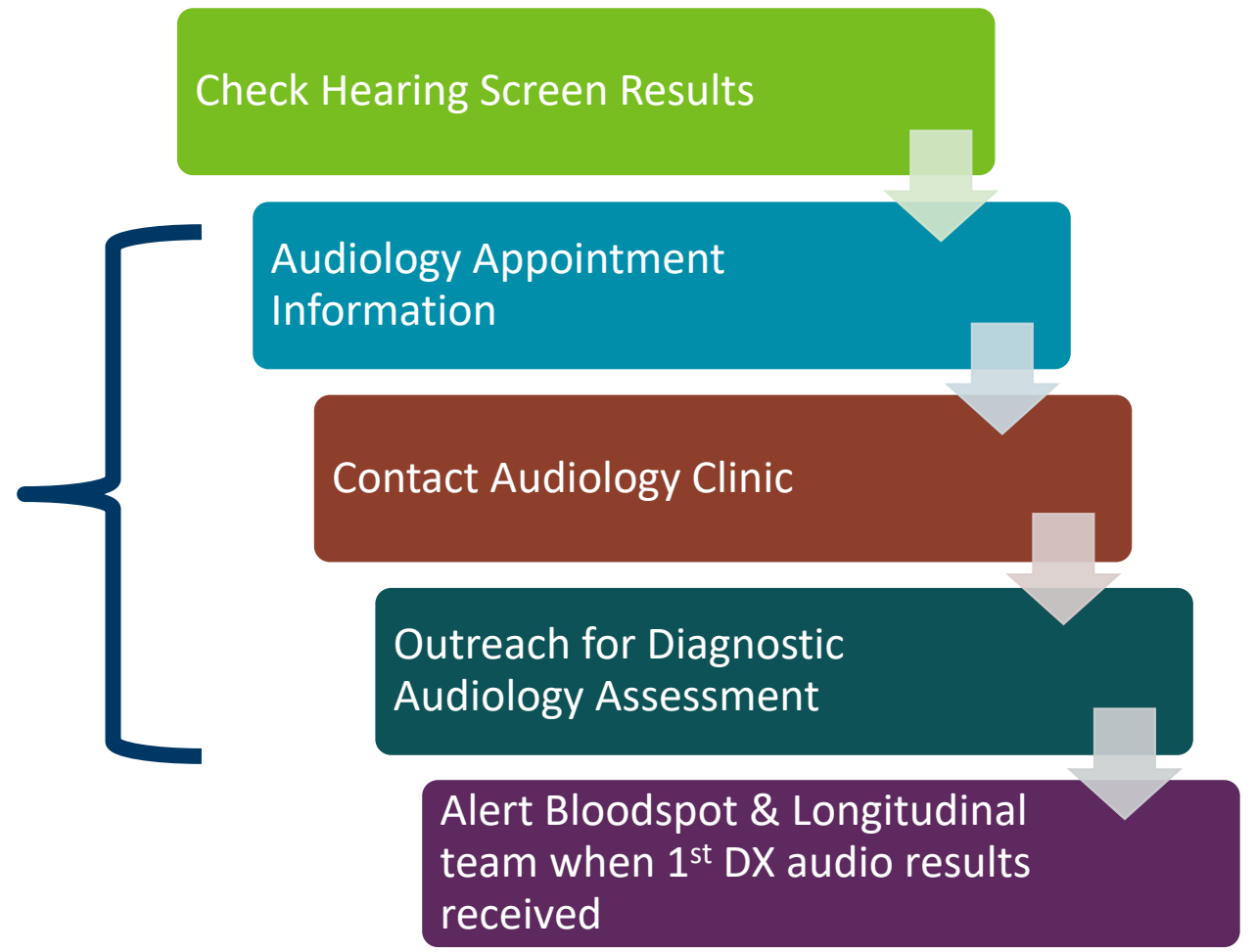
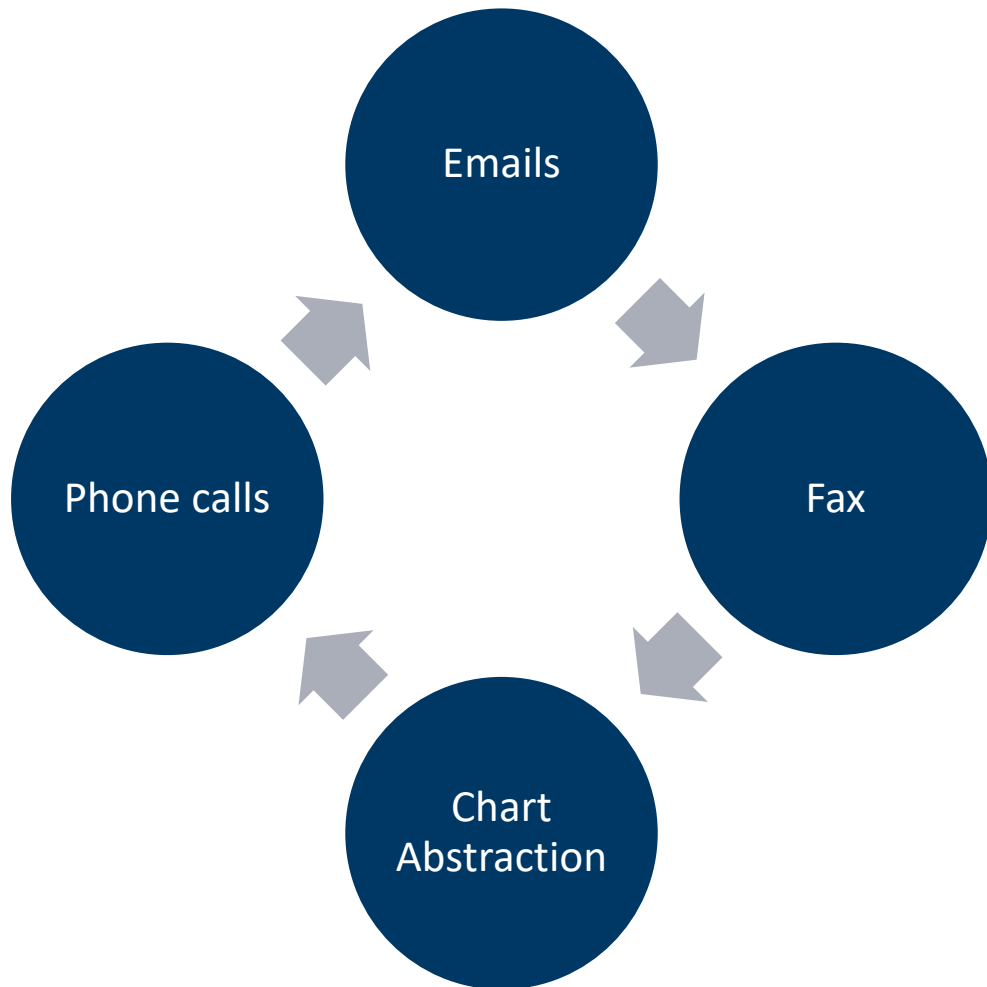
Initially it felt like a large increase in diagnostic ABRs but it is actually going well.

We have a call center specialist and audiology assistant working the referrals as urgent, so we have been able to get the babies in pretty quickly.

Frustration all around when audiology appointments are not scheduled correctly.

We are at the repeat/second ABR phase of follow up and we are finding that PCPs really do not understand the need for increased follow up and are expressing this to their families.

POC/EHDI Follow-Up



Impact on EHDI Outcomes



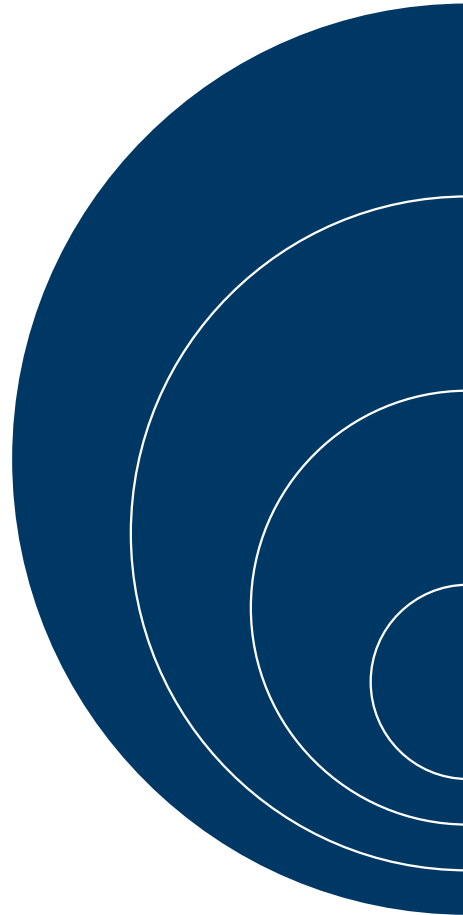
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all infants with a REFER hearing screen & cCMV had a complete diagnostic assessment

1

No difference in screen rate overall

Lessons Learned & Looking Forward



Conversations with audiology clinics are vital
How active does the hearing follow-up need to be after initial diagnostic assessment vs passive follow-up? What about after 2nd assessment?
Internal communication and timing adjustments
Too early to really see impact on statewide EHDI numbers

Thank you! Questions?



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EHDI must be at the cCMV table

21-day window for detection of CMV fits well within and supports EHDI's 1-3-6 goals

Monitoring for audiologic change is critical for infants with cCMV & follow-up on risk factors is already part of most EHDI Systems

Early identification of cCMV may help provide families with answers, important information regarding potential/or identified hearing differences, and time to explore language opportunities

EHDI advisory committee can take an active role

Audiology Assessment & Monitoring Recommendations

Initial Diagnostic Audiology Assessment

- Auditory Brainstem Response (ABR) by 1 month of age or no later than 1 month after cCMV confirmed with urine

2nd Diagnostic Audiology Assessment

- ABR by 4-5 months of age
- Review of vestibular function motor milestones**

Monitoring Audiology Visits up to age 2 years

- Every 3 months using typical test battery with ear-specific procedures for age/skills
- Review of vestibular function motor milestones**

Monitoring Audiology Visits age 2 to 6 years

- Every 6 months using typical test battery with ear-specific procedures for age/skills
- Complete vestibular function screening***

Monitoring Audiology Visits age 6-10 years

- Every 12 months using typical test battery with ear-specific procedures for age/skills
- Complete vestibular function screening***

