

Addressing Disparities in Hearing Health Care through Mobile and Tele-Audiology

2024 Early Hearing Detection and Intervention (EHDI) Conference
Denver, CO



Georgia
Mobile
Audiology

Presenters: Monica Glapion, M.S., CCC-A and Sarah Jones, Au.D., CCC-A

DISCLOSURES

- Monica Glapion and Sarah Jones are both employed by the Georgia Department of Education and work within the Georgia Mobile Audiology Program.

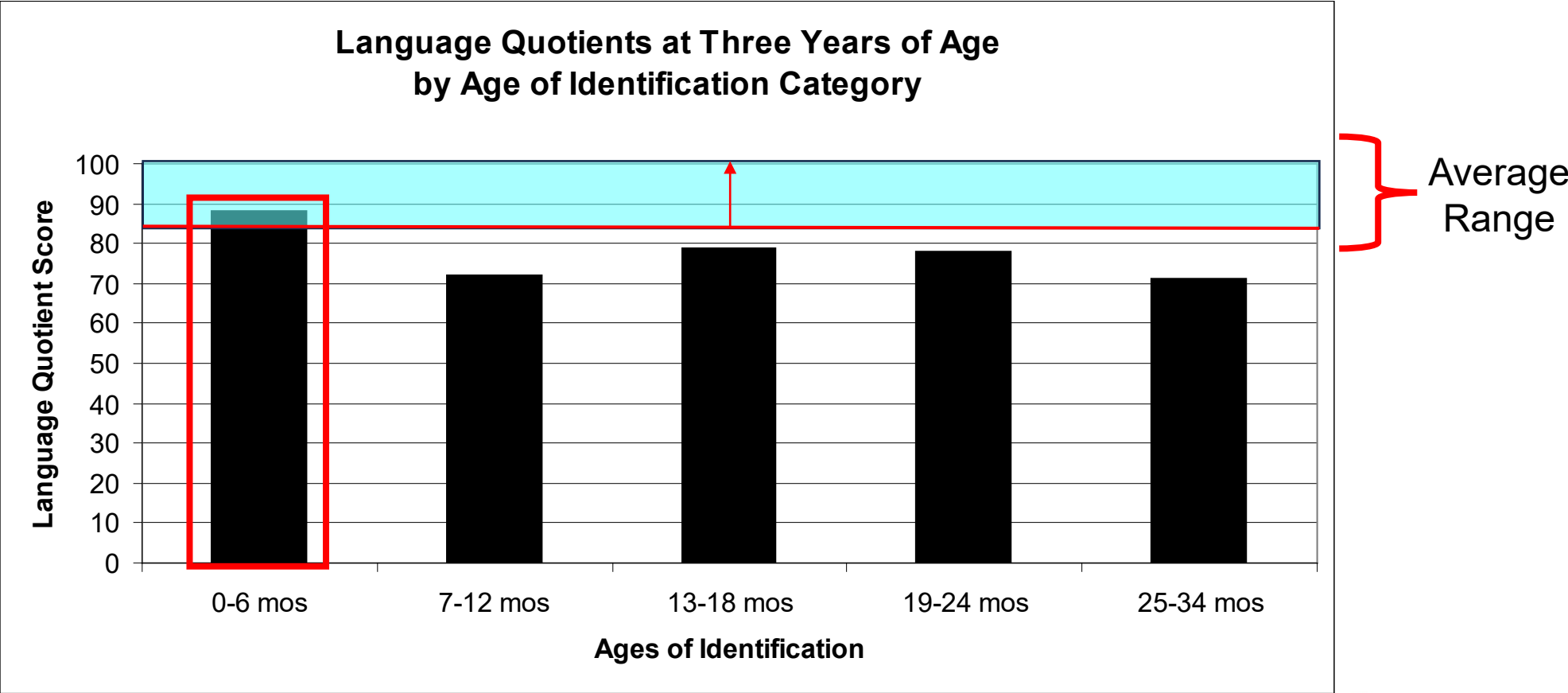
Learning Objectives

1. The participant can explain the relationship between early diagnosis/intervention and language and literacy outcomes.
2. The participant will identify obstacles to access to hearing health care in their state.
3. The participant will describe strategies for implementing mobile and tele-audiology services in their states.

What we knew...

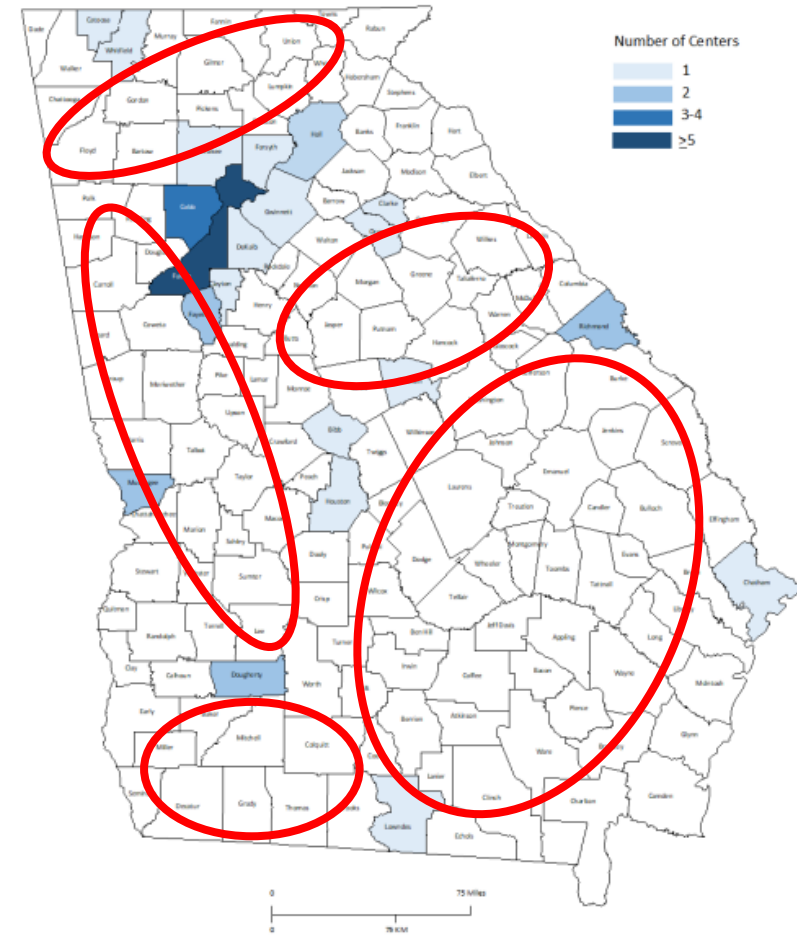
- Research data shows that children who are identified and receive services earlier have better outcomes in language, literacy, and academics.¹
 - 1 month, 3 months, 6 months benchmarks²
 - Lifetime educational cost savings of \$115,600 per child over the course of the child's educational career.³
- Research on Georgia's children who are DHH show that children in (a) rural areas; (b) families who speak a language other than English; and (c) families in low-income geographic areas are disproportionately represented because they are late identified .⁴
- **“Zip code lottery”** – depending on where you live & income level determines your access to audiology services, especially for children ages 0-5 years of age.

Effects of Age of Identification on Language Development⁵



Pediatric Audiology Services in Georgia 2019 ⁶

Hearing Diagnostic Centers

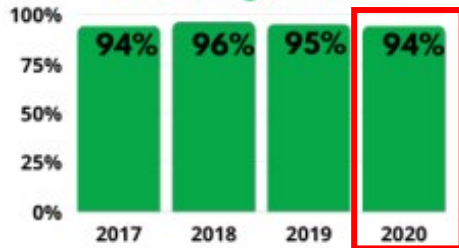


July 2019
EhDI - Maternal and Child Health

GEORGIA DEPARTMENT OF PUBLIC HEALTH

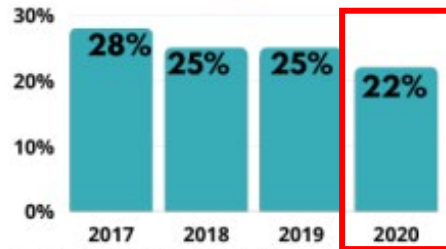
2021 DHH Language and Literacy Dashboard

By 1 Month Newborn Hearing Screening/Rescreen



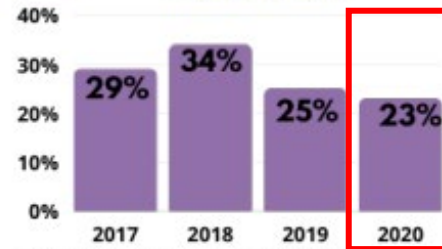
115,255 of 122,889 babies born in 2020 were reported as being screened by 1 month of age.*

By 3 Months Diagnosis



658 of 3,046 babies born in 2020 who were referred for a full diagnostic were reported as having one by 3 months of age.*

By 6 Months Enrolled in Early Intervention



47 of 205 eligible babies born in 2020 & diagnosed as DHH were reported as having been enrolled in Part C Early Intervention services before 6 months of age.*

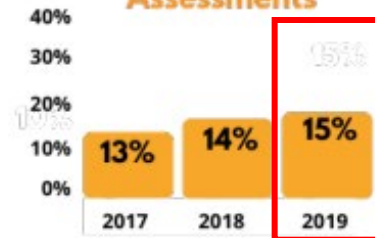
3 Years Transition Meeting

Data Not Available at this time

3 to 5 Years Preschool Services Language Assessments

Data Not Available at this time

5 to 8 years School Instruction Literacy Assessments



20 of 130 children in SPED with primary eligibility of DHH were reading on grade level by the end of 3rd

State of Georgia in 2020⁷

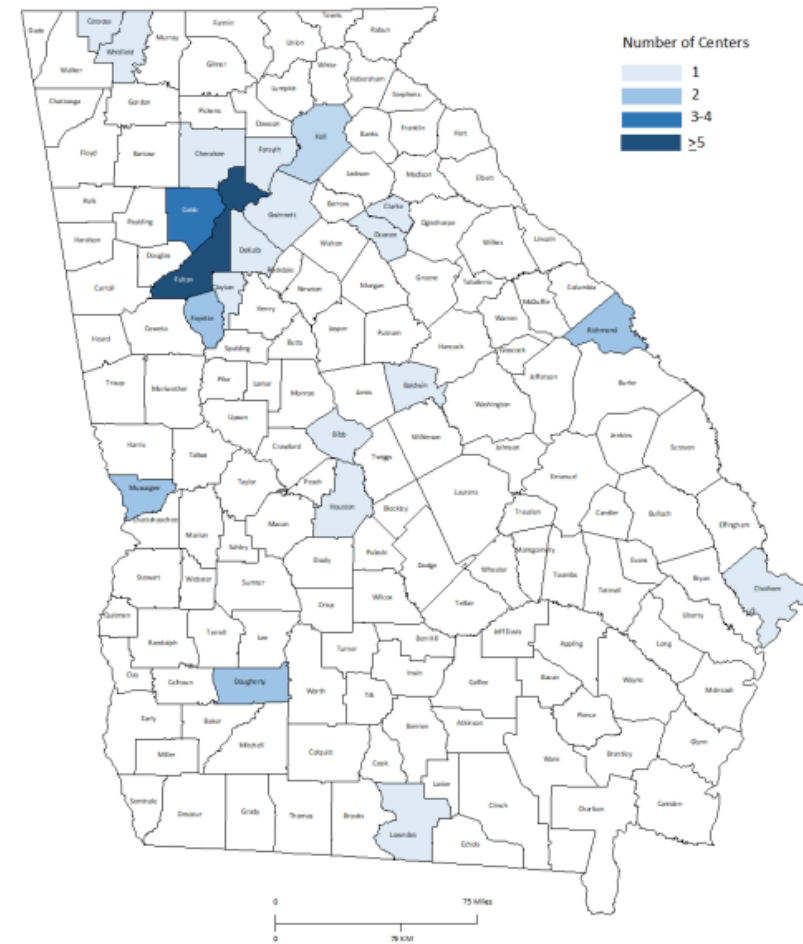
We hypothesize that this downward trend can be attributed (at least in part) to the COVID-19 pandemic.

What did we do?

- Important to note that “**we**” refers to multiple agencies and individuals throughout the state working together.
- Language and Literacy Report and Legislation (**OCGA § 30-1-5**)⁸
- Concentrated effort to recruit and hire pediatric audiologists, parent navigators/test assistants throughout the state.
- “Roadshow Tour” of audiology services throughout the state.
- **Tele-Clinics**: Diagnostic ABR testing to infants.
- **Mobile Clinics**: Mobile Audiology Booth, RESA partners.
- Guidance and resources for hearing health through the state.

Roadshow Tour⁶

- Targeted rural areas in the state that had the biggest need for diagnostic testing.
- Met with Georgia Department of Public Health (GA DPH) community partners, including district EHDI coordinators.
- Met with school systems and local providers.



July 2019
EHDI - Maternal and Child Health

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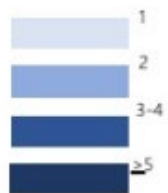
Tele-Clinics

Infant Diagnostic Testing



2022-2023 Infant Hearing Diagnostic Centers

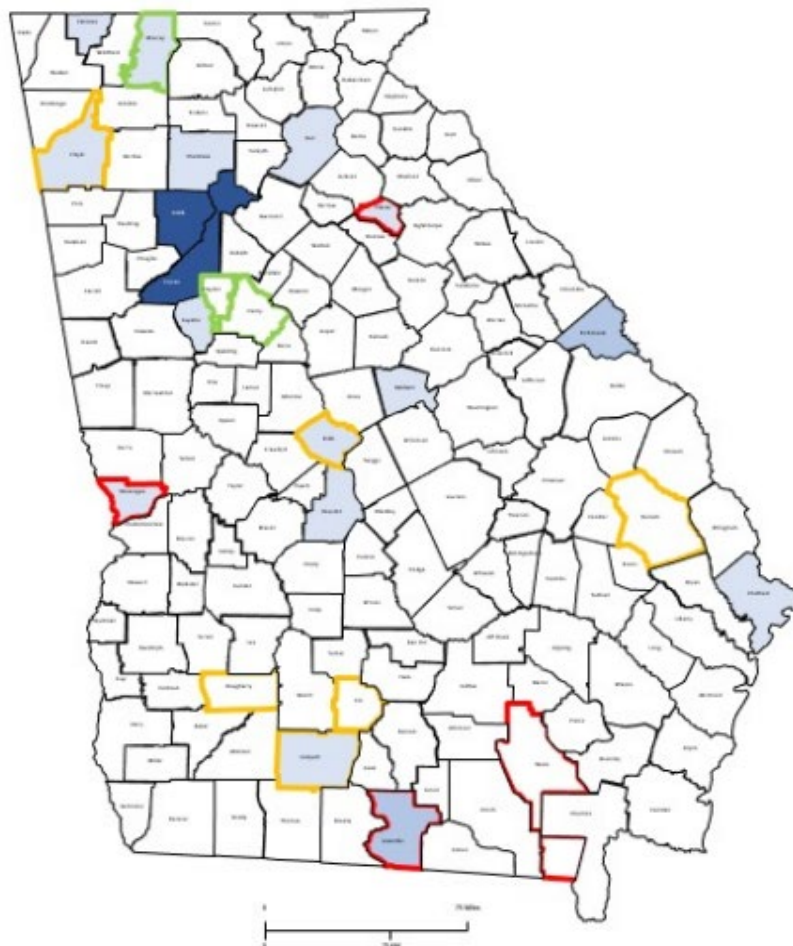
Number of Centers



Teleaudiology Site 

Mobile Site 

Teleaudiology and Mobile Site 



Tele-Clinics⁹

- Tele-Clinics were birthed out of the COVID-19 pandemic.
- Our road tour gave us a lot of information about what areas of the state were in the most of need of services.
- We focused the creation of our clinics in these areas.
 - Primarily rural areas, +150 miles from Metro Atlanta.
- Need is not the only consideration.
 - Important that local providers are in these area for case management after diagnosis.
- All tele-ABR clinics are done in partnership with the **GA DPH/district EHD coordinators**.

Tele-Clinics

Audiology Test Assistant with family at roving site

Family/Patient at roving site

Audiologist: Stationary Location, remotes into TA's computer

The screenshot shows a tele-clinic session. On the left, a window displays the 'Hearby' software interface, which includes a 'Test' tab with various parameters and waveforms. The interface shows 'Right Ear (stimulus in dB HL)' and 'Left Ear (stimulus in dB HL)' with corresponding waveforms. There are also sections for 'Algorithm', 'Masking Level', 'Fidelity', and 'Level (dB HL)'. On the right, a video feed shows a test assistant (TA) wearing a white lab coat and glasses, interacting with a family (two women and a child) who are also wearing masks. The TA is holding a device, likely a hearing aid or testing equipment. The family is seated and looking towards the TA. The video feed is labeled 'Vivo'. Below the video feed, there is a smaller video feed of the audiologist, Melanie Morris, wearing glasses and a dark top. The audiologist's video feed is labeled 'Melanie Morris'. The audiologist's screen also shows a 'Georgia Mobile Audiology' logo in the background.



Tele-Clinics: It's all about creativity

Mobile Clinics

Behavioral Testing



Mobile Diagnostic Booth: “Sunny”



The inside of the truck looks like an office. There are chairs, small tables, and computers.

Sunny: Comprehensive Testing Suite

Audiometer: Fully equipped of air, bone, and speech testing.

Tympanometer: Allows us to measure middle ear status and cross check conductive losses.

Visual Reinforcement Audiometry: Allows us to test younger and developmentally delayed children.

Otoacoustic Emission (OAE) Testing: To cross check behavioral results and screenings.

Local Partnerships

- To increase our impact, we have also partnered with local Regional Education Service Agencies (RESAs) and community partners to provide diagnostic testing.
- Again, this is about being creative.
- Is there a local audiologist with an unused sound booth?
- Is there a university near by with equipment that they can no longer use?
- Testing at other sites allows us to test more students as we can use the mobile unit in other parts of the state.



Parent Navigation

What happens after
diagnosis?

Parent Navigation

- GMA works with a sister program, *DHH Family and Community Engagement*, to provide support and guidance before and after diagnosis.
- Parent Navigators help instill the importance of “**language nutrition**” for families.
- Shameless Plug: Come to **Capital Room 4 today at 2:25pm** to learn more two about Parent Navigation from these two!



What do Parent Navigators Do?

Parent Education

Care Coordination

Emotional Support and Guidance

Connections to Healthcare Providers

Connections to Federal, State, Regional and Local Resources

Connections to other DHH Families

Supports to Local School Systems

Audiology Assistance for Infant and School Clinics

Connections to Transportation Assistance

Referrals to Early Intervention Programs

Referrals to Advocacy Services

Community Engagement

Our Impact

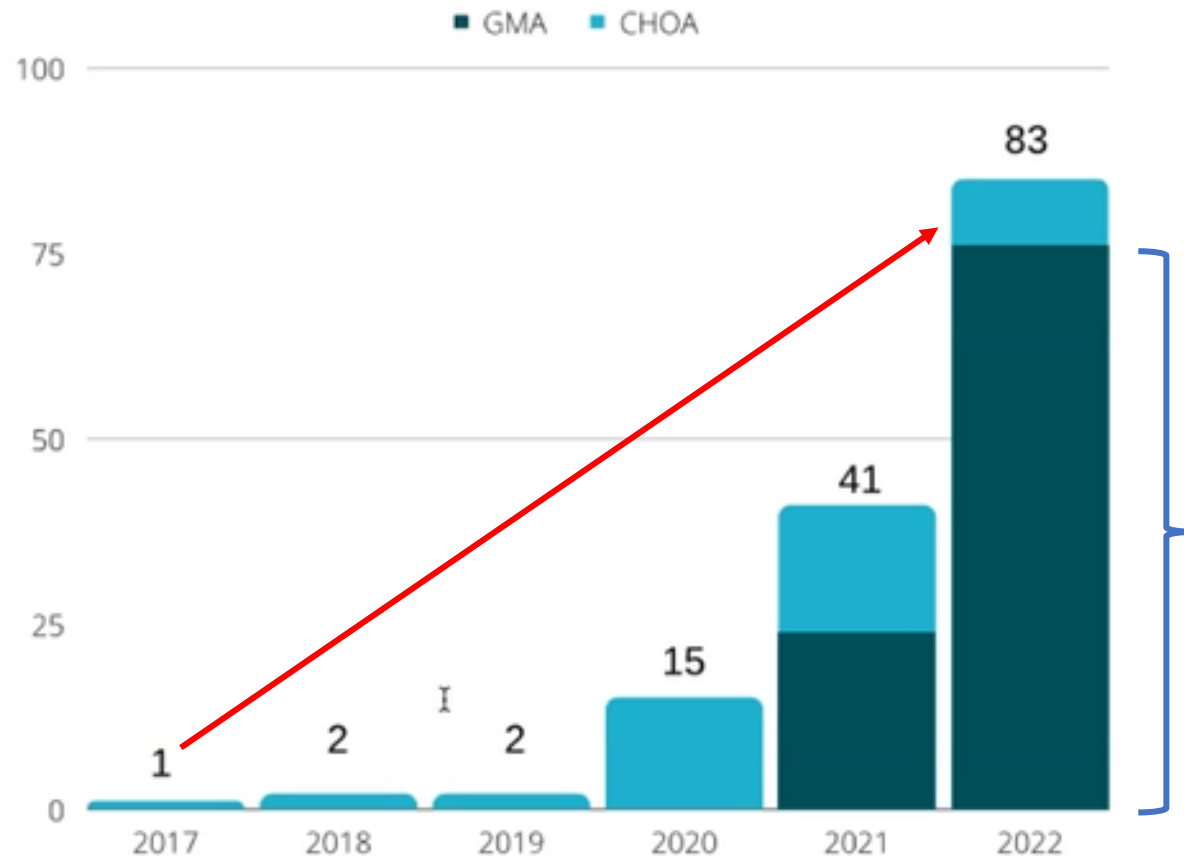
Why it's all worth it!



Tele-audiology Services in Georgia¹⁰

Teleaudiology Diagnostics Explodes in the State of Georgia

of Infants Served via Teleaudiology quadruples from 2020 to 2022

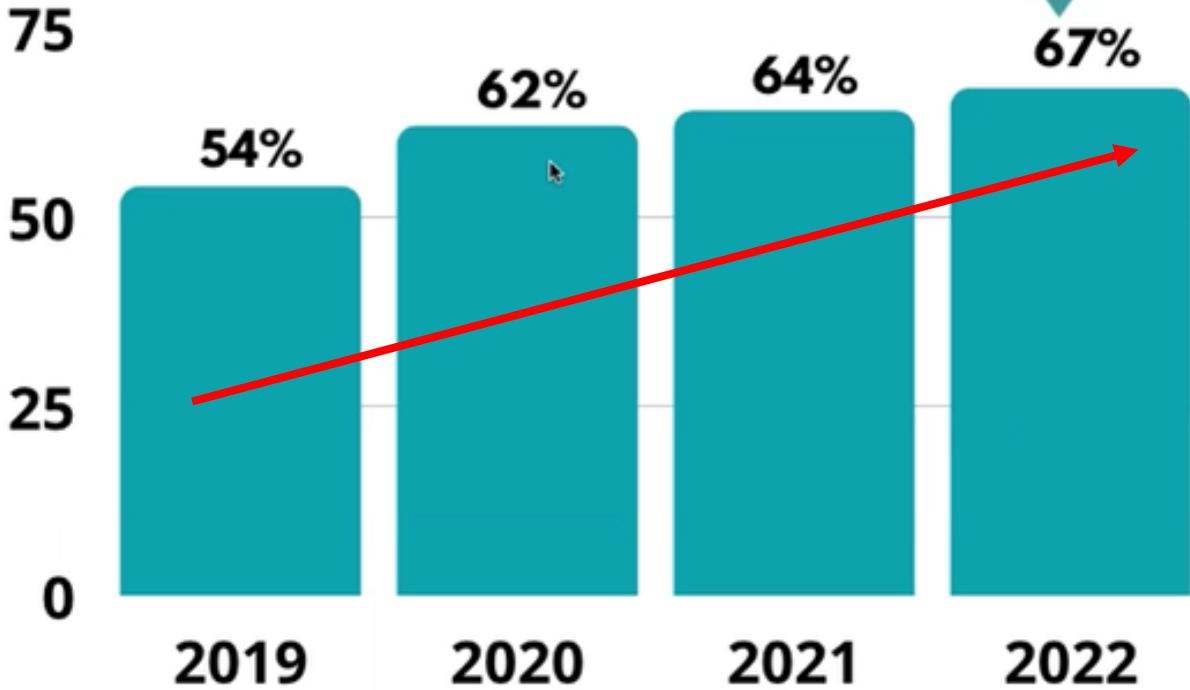


Source: Georgia DPH EHDI Teleaud and GTID Assignments for Year 5 as of 8-25-23. 2022 Data Preliminary.

Percent Diagnosed 3 months¹¹

Percent Diagnosed Before 3 Months of Age among those Identified with Hearing Loss Increasing Substantially

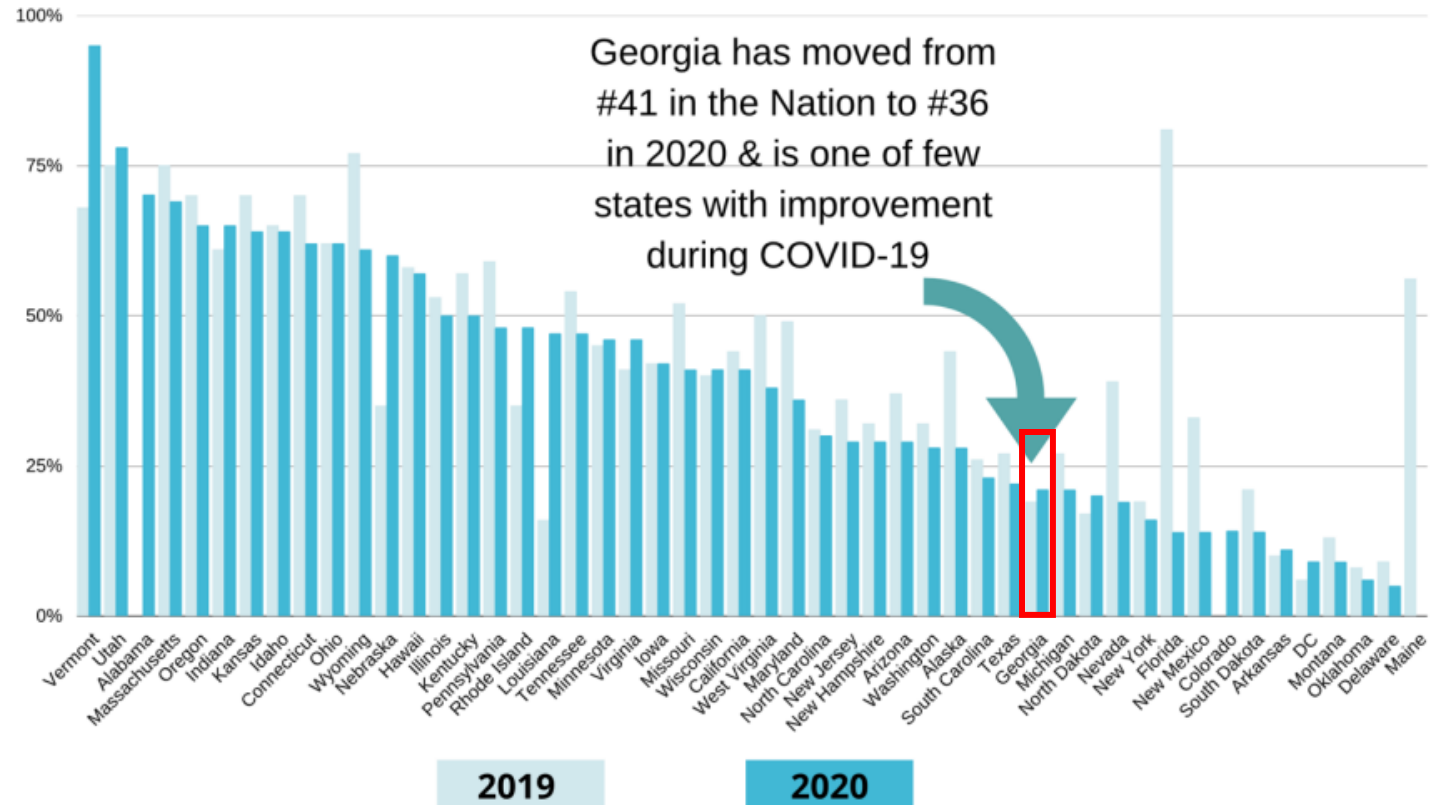
135 of the 203 babies identified with permanent hearing loss were diagnosed before 3 months of age in 2022



Source: Georgia Department of Public Health; 2019-2022 HSFS Data for GaDOE PHIP Request as of 8-29-2023. 2022 Data Preliminary.

Georgia Has Improved for On-Time Diagnosis But Remains One of Lowest States

% of Babies Not Passing Newborn Hearing Screen with Documented Diagnosis by 3 Months of Age



**On-Time
Diagnosis¹²**

Source: 2020 CDC EHDI Hearing Screening & Follow-up Survey (HSFS). Includes cases of normal hearing and hearing loss. Alabama and Mississippi did not report in 2020.



Our Impact

- In partnership with the **GA DPH/EDHI** and local RESAs, GMA has seen ~800 families to date.
 - 500+ diagnostic evaluations completed and over 300 screenings.
- We have diagnosed infants as young as 5 days via tele-clinics.
- In partnership with the **University of Georgia** started the first pediatric audiology symposium in Georgia.
- Creation of Georgia Educational Audiology Advisory Committee.
- In partnership with, **GA DPH** and **Access to Language**, created online training modules for newborn hearing screening, pure-tone screening, parent navigation, and tele-ABR clinics.
- Creation of resource map of all pediatric audiology services in the state.
- In partnership with **GA DPH**, provided, training and education for local hospitals.

What Can YOU Do?

1. Find your “team.”
2. Know your state.
3. Create partnerships.
4. Start small.
 - What is achievable for your state RIGHT now?
 - Road Tour
 - Trainings and resources
 - Mobile Clinics at established sites
5. Dream BIG!



Contact Information

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**References for presentation available upon request