

# Improving EHDI Diagnostic Outcomes through Inter-agency Collaboration

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# Learning Objectives

1. The participant will be able to describe strategies for initiating a partnership between two state governmental agencies (i.e., Department of Education and Department of Public Health).
2. The participant will be able to identify at least three different areas for collaboration between state agencies to improve D/HH outcomes and to improve prompt access to audiological care across a large geographical region.
3. The participant will be able to identify potential obstacles for collaboration between state agencies.



# Georgia in Review

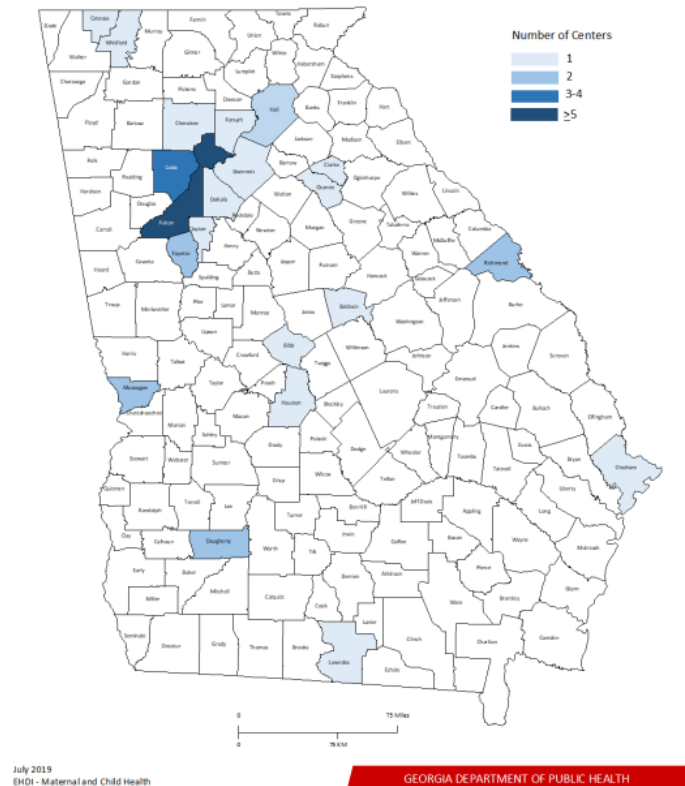


## Georgia By the Numbers

- Geographically, Georgia is the largest state east of the Mississippi River.
- By population, the 8<sup>th</sup> largest state in the US with ~11 million people.
  - 23% or ~2.5 million are 18 and under
  - 5.8% or ~630,000 are 5 and under
- More than half of Georgian's live outside of Metro Atlanta.
- In 2019, only 21 counties (13%) provided diagnostic audiology services to infants and children.
  - Nine of these counties are in the Metro Atlanta area.

# Audiology Services in Georgia

Hearing Diagnostic Centers

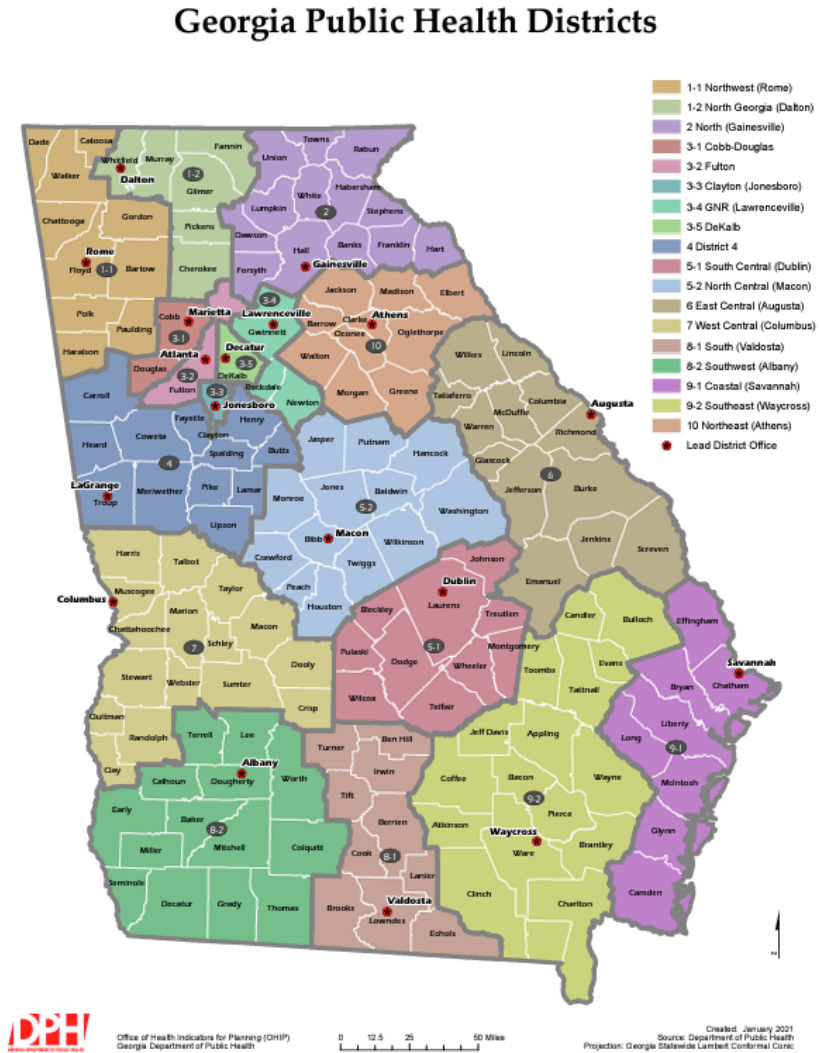


- According to ASHA, Georgia ranks 46<sup>th</sup> in ASHA-certified audiologist-to-population ratio, per 100,000 residents
- Of note, there is no graduate level audiology program in the state
- There is a large distance between more remote areas and diagnostic centers



# GA EHDI districts

- 18 districts, each with their own EHDI coordinator
- 3 contract audiologists
  - Dalton, GA
  - Fulton County, GA
  - Gainesville, GA



# What we knew...

- Research data shows that children who are identified and receive services earlier have better outcomes in language, literacy, and academics
  - 1 month, 3 months, 6 months benchmarks
  - Lifetime educational cost savings of \$115,600 per child over the course of the child's educational career
- Research of 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.
- “**Zip code lottery**” – depending on where you live & income level determines your access to audiology services, especially for children ages 0-5 years old

# Legislation in Georgia

- Georgia Commission of the Deaf and Hard of Hearing GA Code § § 30-1-1 – 30-1-6
  - Established in 2018
  - 12 members report to governor
  - Purpose is to advocate on behalf of D/HH individuals by working to ensure equal access to the “services, programs, and opportunities available to others.”
    - Public awareness
    - Advise of legislation
    - Work with government and private agencies to promote economic development for D/HH individuals
    - Assist families of children who are D/HH
  - Created Language and Literacy Report (QR Code)





# Georgia's Language & Literacy Law

- **OCGA § 30-1-5** : Requires the Georgia Commission for the Deaf and Hard of Hearing (D/HH) to “submit an annual report to the Governor and General Assembly on the **language and literacy outcomes for DHH children** birth to third grade in the state of Georgia.”
- Key deliverables in the report include:
  - Establishment of a stakeholder advisory committee
  - Establishment of a multi-agency task force
  - Georgia Testing Identifier Number (GTID) for those diagnosed with permanent hearing loss
  - Resources for professionals (web and print)
  - Creation of Developmental Milestones for children who are D/HH (English and ASL)
  - Biannual Language and Literacy Assessments (English and ASL)
  - Birth to Literacy Plan for D/HH children- including key transactions on the child’s path to literacy
  - Interagency Collaboration and Data Sharing

# Georgia Mobile Audiology

- **Established** by Georgia's Department of Education's Division of State Schools Outreach
- **Funded** by GA State Legislature
- **Beginning** with two audiologists and one parent navigator
  - Parent navigation: sister program to provide guidance to families*
- **Current staff:** 4 audiologists and 5 parent navigators
- **Goal** to provide audiological services for children birth to 22 years of age
  - NBHS, diagnostic ABR (infants), behavioral testing
  - All services are provided either through tele-audiology or mobile
  - All services are free to families
  - Focus is language and literacy for D/HH children
  - Modality neutral



## Georgia's Children Who Are DHH – Key Transactions Map

### Newborn Hearing Screening/Rescreen 01

- All caregivers understand primacy of language and NBHS process before birth
- Clear messaging around do not pass/refer
- Urgent need for rescreen and the implications for language development and enrollment into EI

Birth to  
1 month

### Diagnosis 02

- Audiologist provides amplification when appropriate
- Teaches importance of audiological management
- Supports parent capacity building around language

By  
3 months

### Early Hearing Orientation Visit 03

- Professional provides comprehensive, accurate information
- Language nutrition and literacy proficiency focus
- Parent capacity building to make informed, timely decisions

By  
6 months

### Early Intervention 04

- Professional will use evidence-based practices
- Appropriate EI services accessible to diverse families
- DHH children will have age-appropriate language

6 months  
to  
3 years

### Transition Meeting 05

- All stakeholders will be included in timely meeting
- Appropriate school services will be identified
- DHH children will have age-appropriate language

3 years

### Preschool Services 06

- Preschool services will be accessible to diverse families
- Services will build foundational skills in early literacy
- DHH children will have age-appropriate language

3 to 5  
years

### School Instruction 07

- Professionals will use evidence-based practices
- Parents will advocate for their DHH children
- DHH children will read on grade level

5 to 8  
years

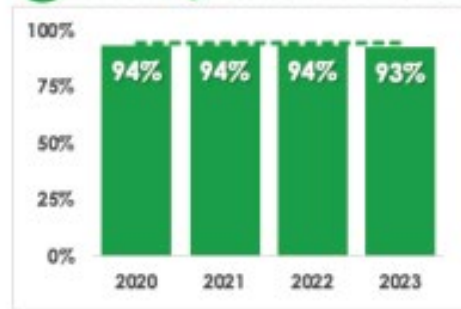
Literacy Proficiency

# Overview of GA DPH partnership

- Why was the contract developed?
  - Improve 1-3-6 benchmarks
  - Language and literacy report data
    - Need for increased access to diagnostics (and re-screens)
    - Improve process of re-screen to diagnostic ABR
- How was the contract developed?
- Requirements of contract
  - MOU for training and infant clinics
  - Programmatic report
  - Trainings in partnership with DPH
  - Monthly invoices and training log

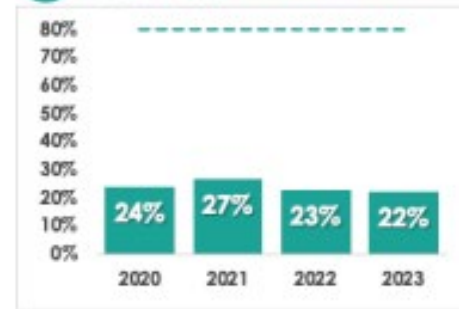
# 2024 DHH Language and Literacy Dashboard

## By 1 Month Newborn Hearing Screening/Rescreen-Goal is 95%



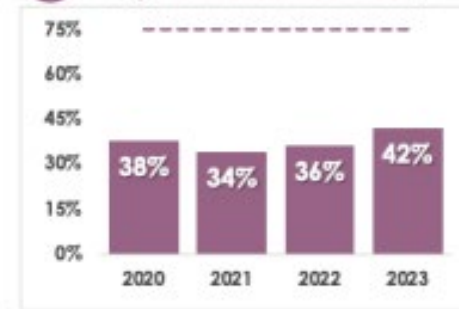
117,402 of 126,006 babies born in 2023 were reported as being screened by 1 month of age.\*

## By 3 Months Diagnosis-Goal is 80%



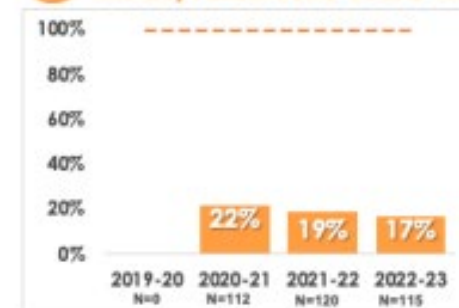
638 of 2,886 babies born in 2023 who were referred for a full diagnostic were reported as having one by 3 months of age.\*

## By 6 Months Enrolled in Early Intervention-Goal is 75%



76 of 182 eligible babies born in 2023 and diagnosed as DHH were reported as having been enrolled in Part C early intervention before 6 months of age.\*

## 5 to 8 years School Instruction Literacy Assessments-Goal is 100%



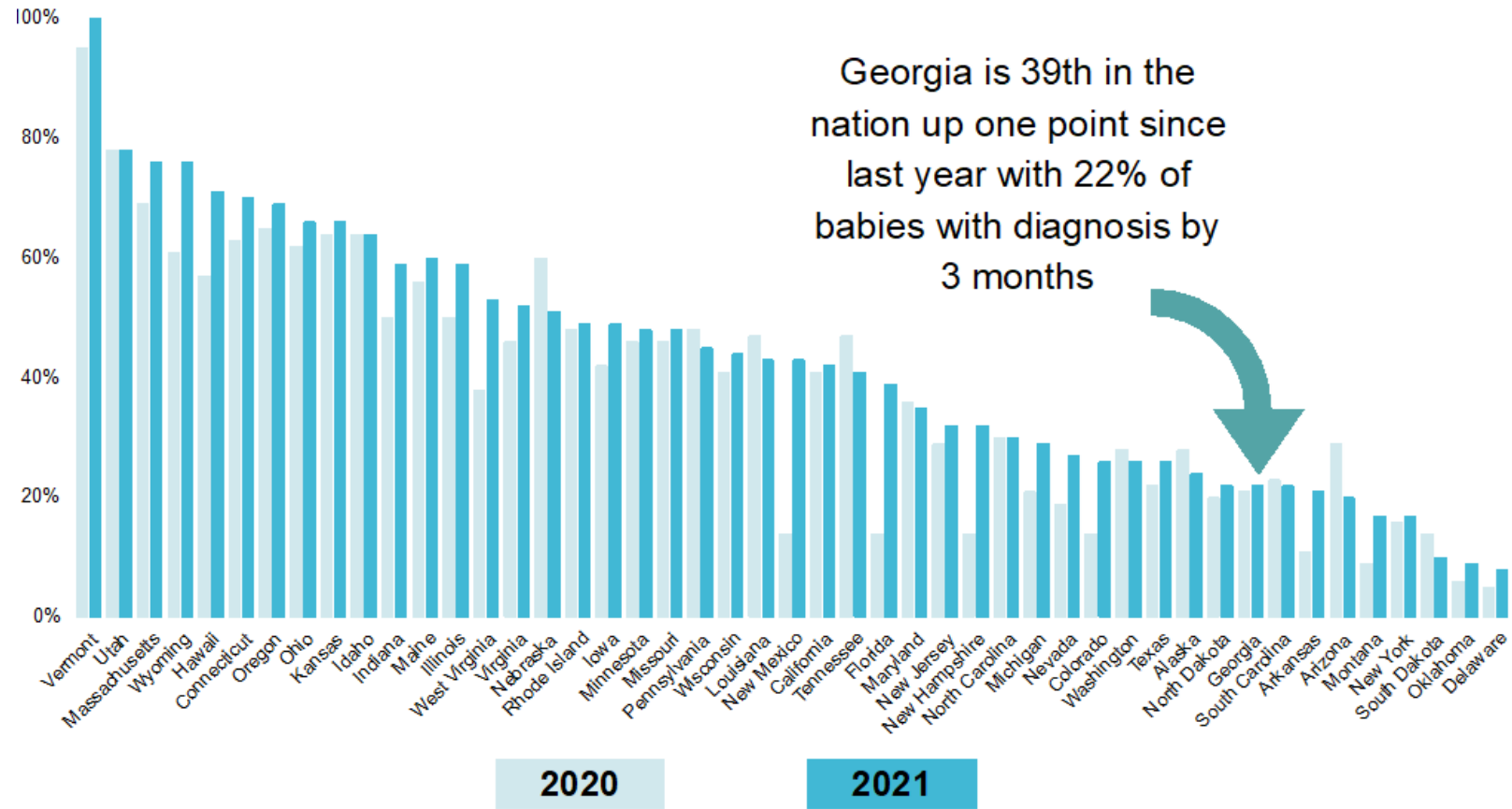
20 of 115 children in SPED with primary eligibility of DHH were reading on grade level by the end of 3rd grade for the 2022-23 school year.

\* Sources: Georgia DPH, 2020-2023 HSFS Data for GaDOE PHIP Request as of 8-9-2024 (2023 data are preliminary and subject to change); GaDOE 2018-22 School Year End of Grade Assessments, Grade 3 Milestones English Language Arts Assessment for children in Special Education with a primary eligibility of DHH. Data unavailable for 2019-20 school year due to lack of testing during the COVID-19 pandemic.



## Georgia Holds Steady 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



Source: 2021 CDC EHDI Hearing Screening & Follow-up Survey (HSFS). Includes cases of normal hearing and hearing loss. Alabama and Kentucky did not report in 2021.

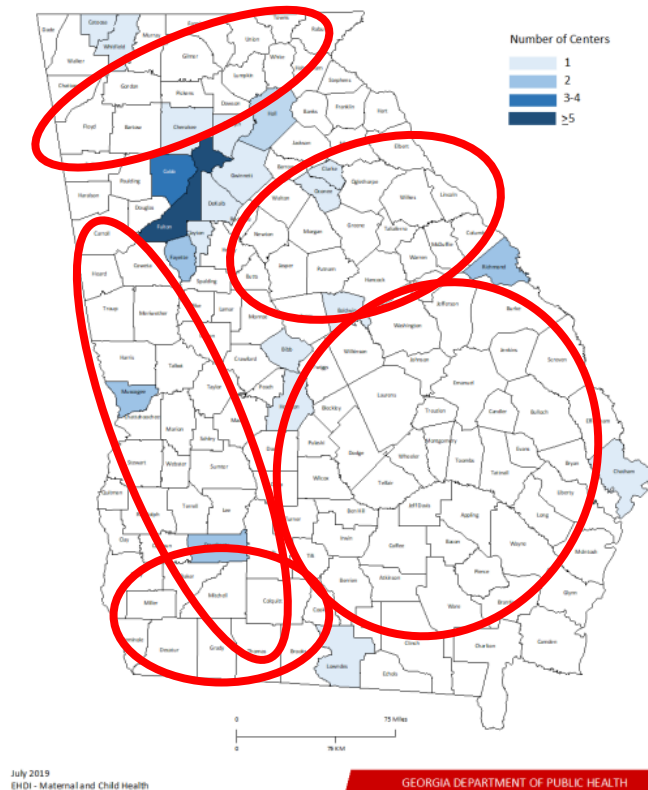


# Focus on Diagnostics

# Development of tele-clinics in partnership with DPH

- Pediatric Audiology “Deserts”
- Strategic look at data across GA
- Needed to weigh where we could be the most impactful
- Obstacles to breaking into an area

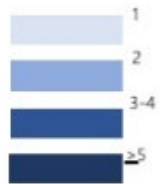
Hearing Diagnostic Centers



# Tele-Clinics

## 2022-2023 Infant Hearing Diagnostic Centers

Number of Centers



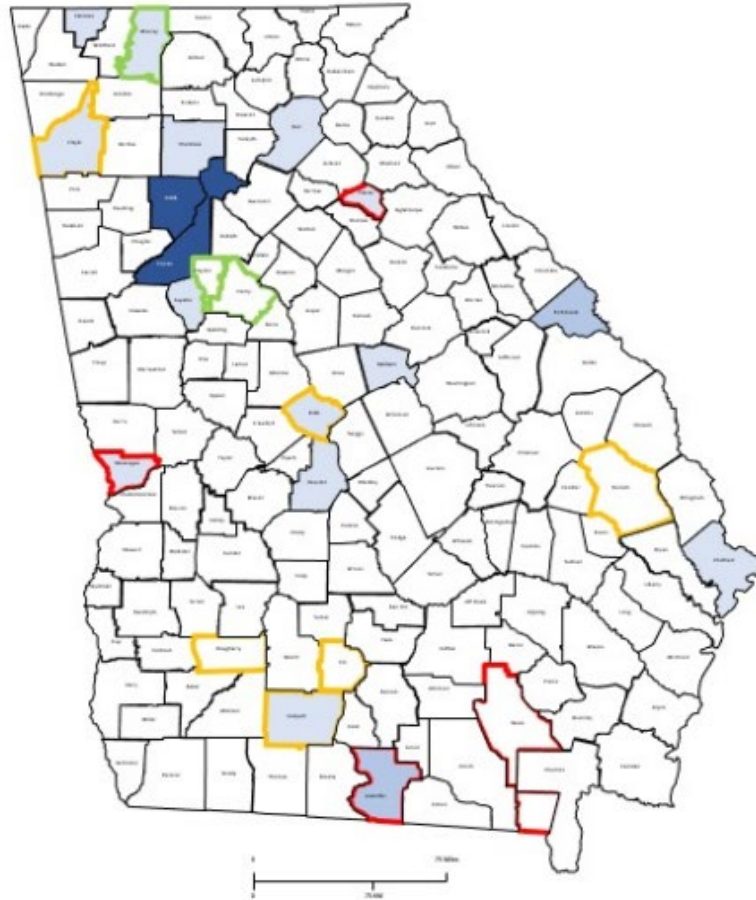
Teleaudiology Site



Mobile Site



Teleaudiology and Mobile Site



- 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.**

# Development of tele-clinics in partnership with DPH

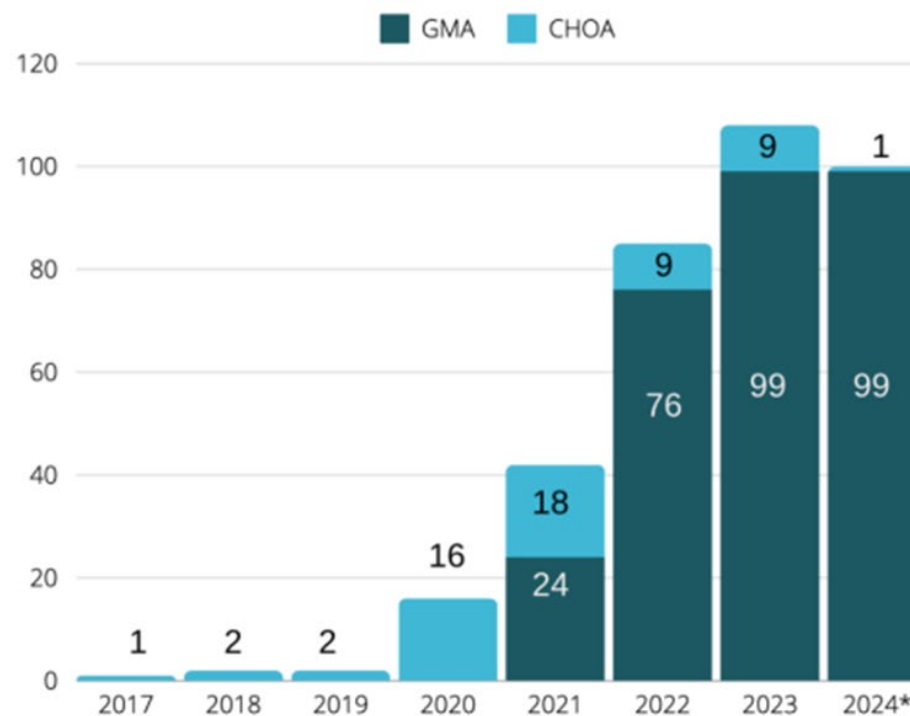
- How did we get "buy in" from the district EHDI coordinators?
- Communication with EHDI coordinators
- Advantages of using DPH space for clinics
- Children's Healthcare of Atlanta (CHOA) also has 1 to 2 tele-clinic sites in different regions of the state
  - Also done in conjunction with GA Department of Public Health



# Success of Tele-clinics

## Teleaudiology and/or Mobile Audiology Diagnostics Continues to Rise in GA

# of Infants Served via Tele/Mobile Audiology on Track to Surpass Previous Years

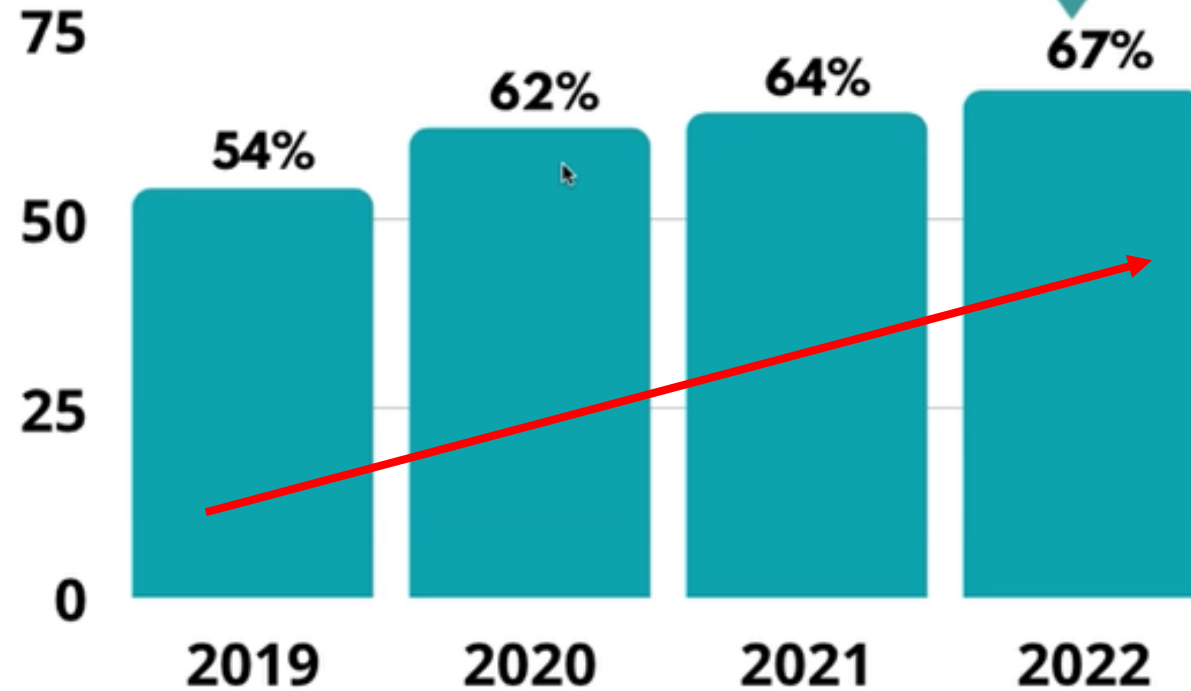


Source: Georgia DPH EHDH GTID Teleaud Mobile and IP Dx by year approved 8-9-24. 2024 Data Preliminary.

\* 2024 data as of June, 2024.

## 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

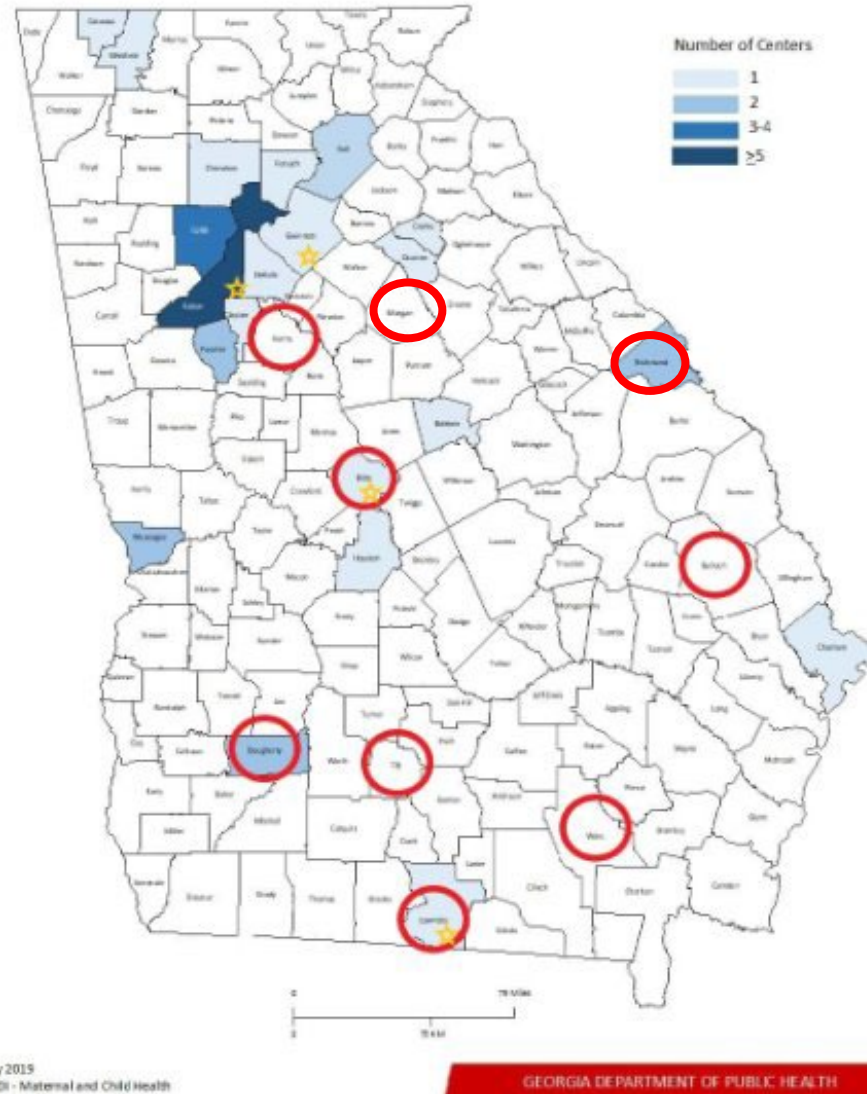


Source: Georgia Department of Public Health; 2019-2022 HSFS Data for GaDOE PHIP Request as of 8-29-2023. 2022 Data Preliminary.

# Current Tele-Clinic locations

- Bibb County
- Henry County
- Tift County
- Lowndes County
- Dougherty County
- Ware County
- Colquitt County
- Bulloch County
- Richmond County

*Date current as of 1/2025*

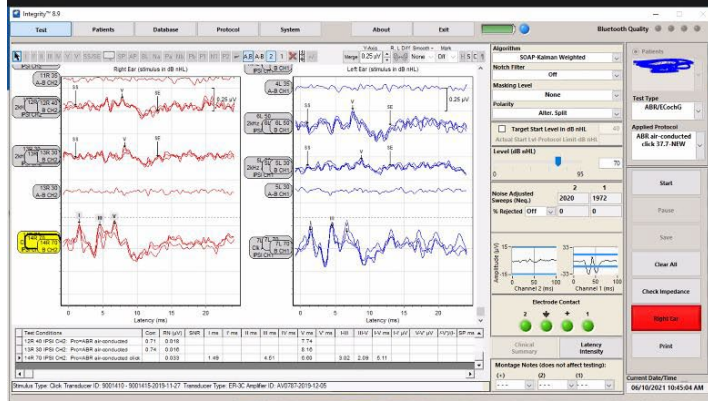


# How are Tele-clinics Set Up

- Data driven decision making
- Meeting Community stakeholders to garner support
- Establish a testing site
- Setting up a referral process

# Tele-Clinics

Facilitator with family at roving site



Family/Patient at roving site



Audiologist: Stationary Location, remotes into testing computer



# Richmond County Tele-clinic Case Study

- Launched in late September 2024
- Timeline:
  - **2023:** Contacted by stakeholders in Augusta region
  - **May 2024:** Met with various stakeholders in Augusta region
    - EHDl coordinator/DPH staff
    - Pediatric audiologists in the community
  - **June-September 2024:** Clinic planning
    - Monthly team meetings
    - Health nurse NBHS training
    - Site research/visits
    - Meeting with EHDl coordinator to review scheduling process
  - **Official launch – September 24, 2024**



# Richmond County Tele-clinic Case Study

- This model was used to start a new clinic in Bulloch Co.
- For the future:
  - Create a score card/rubric to help determine best locations for future growth
  - Utilize data to continue to expand clinic offerings

# Decrease the Need for Diagnostic ABRs in GA



# Issues to Consider

- In 2023, 51 of the 75 hospitals exceeded the 4% benchmark for failed newborn hearing screenings at discharge (or 68%).
- No standardized training for hearing screening in GA
- Health districts across the state typically maintain only one to two aOAE/AABR screeners
  - Older equipment expensive to maintain
  - Attrition of staff comfortable screening newborns
- Midwives and birthing centers requesting equipment and/or training to meet GA competency requirements

# Who can conduct hearing screenings in GA?

## GA Code § 43-44-7

- Anyone can perform screenings if they complete a procedure specific training directed by a GA licensed audiologist
- Protocols, administration and monitoring of OAE/ABR screening program directed by a GA licensed audiologist
- Equipment and protocols are automated
- Screening results are automatically determined (pass/fail result)
- Newborns through age three months

## GA Code § 43-44-7 (updated 2022)

- Georgia legislature amended the law to allow a person who is not licensed as an audiologist to perform nondiagnostic hearing screening using OAE or ABR technology from **birth through 22 years of age**.



# Standardized Training to Decrease Fail Rates and Increase Screening Sites

- Provide free GA specific online training modules
- Provide GA required procedure specific hands-on competencies using video conferencing
- Provide equipment specific training to screening staff
- Assistance with replacing older faulty equipment by working with manufacturers to provide a "try before you buy" model for new equipment
- Provide on-call assistance with equipment and reporting questions
- Assistance to hospitals and health departments in setting up outpatient screening sites (policy, billing, equipment)

# Online Training Modules/Hands-on Competency

- GA Newborn Hearing Screening Module
  - Introduced during the COVID pandemic as a way for hospitals to meet the training criteria for GA without onsite pediatric audiologists
- Over 500 staff were trained in Fall 2024 to present
  - Tracking wasn't available until Fall 2024
  - Added Hands-on Competency Option to the Collaboration

# Video Conferencing Competencies

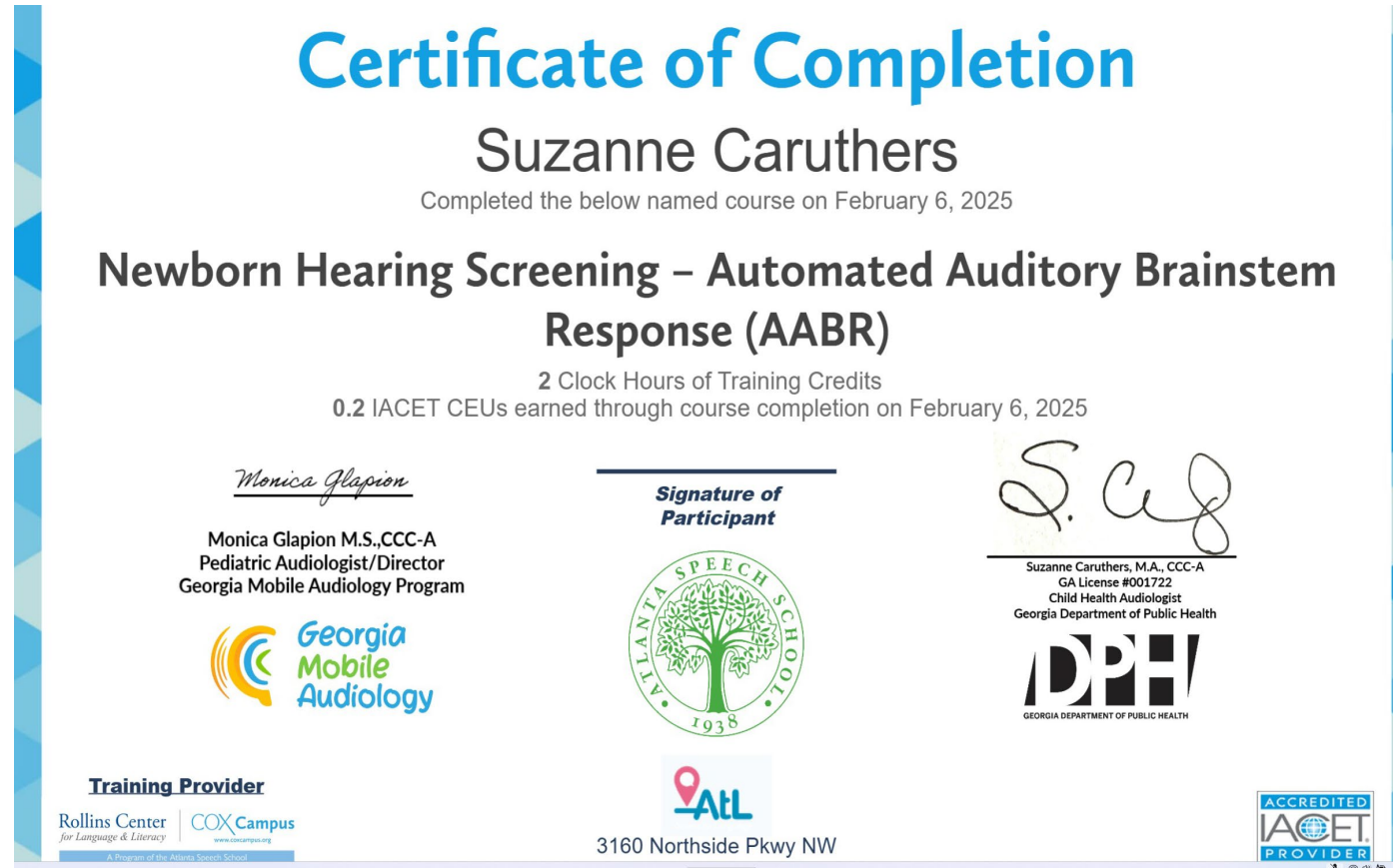
- Allows GA licensed audiologists to complete training sessions across the state without the burden of travel
- Allows rural hospitals to receive training
- Improves ease of scheduling for hospital/health departments
  - Not all attendees need to be in one location
  - Require *initial* competency to be “face to face”
  - Option for *annual* competency face-to-face and/or renew online training certificate

# Path to a Competency

## Virtual

1. All attendees take newborn hearing screening module prior to training date
2. Attendees provide module certificate to demonstrate completion
3. Virtual competency check-off completed
  - a. PowerPoint presentation to review module and provide equipment specific information
  - b. Hands-on competency check off
  - c. Must have web-cam access for virtual training
  - d. Provided a signed competency by a GA licensed audiologist form following check off

# Online Module Certificate



## QR code for GA NBHS module



## QR Code for Equipment Specific Training Cards





# Competency Form

## NEWBORN HEARING SCREENING CLINICAL COMPETENCY

Hearing Screener's Name

Date

Audiologist's Name

Audiologist's License Number

\*All hearing screeners must complete a procedure specific hearing screening training curriculum directed by an audiologist licensed in Georgia with periodic monitoring of the hearing screening program. The training criteria listed below have been successfully completed *under the direct supervision of a GA licensed audiologist certified trainer*. The hearing screener shall maintain initial and annual competencies for the duration of their participation in the hearing screening program.

### COMPETENCY TYPE

- ☐ Initial Competency
- ☐ Annual Competency

### TENETS OF COMPETENCY

- ☐ Successful completion of the GA NBHS online module
- ☐ Demonstration of proper operation of the OAE (Otoacoustic Emissions) equipment on a newborn (or test subject if newborn not available)
- ☐ Demonstration of proper electrode preparation and placement on a newborn
- ☐ Demonstration of proper operation of the AABR (Automated Auditory Brainstem Response) equipment on a newborn (or test subject if newborn not available)
- ☐ Demonstration of basic troubleshooting for all equipment (cleaning probe tube, checking wires, connecting equipment, etc.)
- ☐ Demonstration of assessing the infant's state and determining best test location (i.e. in caregiver's arms, carseat...)
- ☐ Demonstration of effective communication with the family prior to and immediately following the screening (e.g. explanation of test procedure and results and follow-up recommendations)
- ☐ Demonstration of proper infection control measures (e.g. hand-washing, cleaning equipment, etc.)


NOTES/COMMENTS:

Audiologist's Signature

Date

\* GA Code § 43-44-7 (2022)

# NBHS Results and Recommendations Form




**Instructions for Staff:** Complete this form and provide a copy to the caregiver/s. Newborn hearing screening results and recommendations are required to be provided to caregiver/s per [Rule 511-5-5-06; Hearing Screening](#). Note: If you are completing an outpatient hearing re-screen, report results to DPH by faxing this form to (404) 657-2773 or email to [DPH-NBS@dph.ga.gov](mailto:DPH-NBS@dph.ga.gov).


**Place Hospital Label Here**  
If the child's hospital label is not available, please complete the Infant Demographics section. **Skip** Infant Demographics if a hospital label is attached.

Congratulations on the birth of your baby!  
*Keep this form in a safe place and bring it to your child's first pediatrician appointment.*

CHILD'S INFORMATION		
Child's Name (First and Last):		Child's Date of Birth:
HEARING SCREENING DETAILS		
Date of Test:	Screening Setting: <input type="checkbox"/> Inpatient <input type="checkbox"/> Outpatient	Name of Screener:
Type of Test [Select One]: <input type="checkbox"/> OAE <input type="checkbox"/> AABR <input type="checkbox"/> OAE + AABR		Name of Facility:
SCREENING RESULTS [Select One]		
<input type="checkbox"/> Your baby PASSED the newborn hearing screening for both ears. <input type="checkbox"/> Your baby FAILED the hearing screening in the <i>Left</i>   <i>Right</i>   <i>Both ears</i> (CIRCLE ONE)		
A failed hearing screening result means your baby needs more testing to determine if they have a hearing loss. This test becomes more difficult the older the baby becomes and should be completed as soon as possible (ideally before 1 month of age).		
If your baby failed their final hearing screening before leaving the hospital, they should receive a test for Congenital Cytomegalovirus (cCMV). See <a href="https://dph.georgia.gov/EHDI/cmv">https://dph.georgia.gov/EHDI/cmv</a> for more information.		
Was a Congenital Cytomegalovirus (cCMV) specimen collected?   Yes   No   (CIRCLE ONE)		
If yes, what specimen type was collected?   Saliva   Urine   Other: _____ (CIRCLE ONE)		
If known, what are cCMV test results?   Negative   Positive   Inconclusive   Not Known (CIRCLE ONE)		
FOLLOW-UP RECOMMENDATION [Select One]		
<input type="checkbox"/> No further testing is needed (baby passed for both ears). Follow-up with pediatrician for routine hearing screenings as child ages. Seek additional hearing testing if concerns of hearing loss and/or speech-language delay arise.		
Further testing is needed:		
<input type="checkbox"/> A hearing re-screen should be scheduled as soon as possible. (Baby failed one or both ears or could not be tested)		
<input type="checkbox"/> A diagnostic Auditory Brainstem Response should be completed as soon as possible (Baby failed inpatient and outpatient screens and/or has hearing loss risk factors)		
Date/Time (if scheduled): _____		
Location (if scheduled): _____		
<input type="checkbox"/> cCMV testing needs to be ordered and conducted prior to 21 days of life.		



Scan QR to find a follow-up provider at  
Georgia Mobile Audiology




Newborn Hearing Screening Results and Recommendations Form

Helpful Follow-Up Resources

Visit [https://sendss.state.ga.us/orders/sendss/fmch/coord\\_search](https://sendss.state.ga.us/orders/sendss/fmch/coord_search) and search "Early Hearing Detection and Intervention" (EHDI) to connect to your local EHDI coordinator. Each health district has an EHDI coordinator to assist you if additional testing is needed.


Visit <https://dhpathways.georgia.gov/>. Georgia Pathways provides information about how to locate statewide programs and partners, access services, and obtain resources for families and professionals.

Have You Heard? Brochure



English

¿Has escuchado?

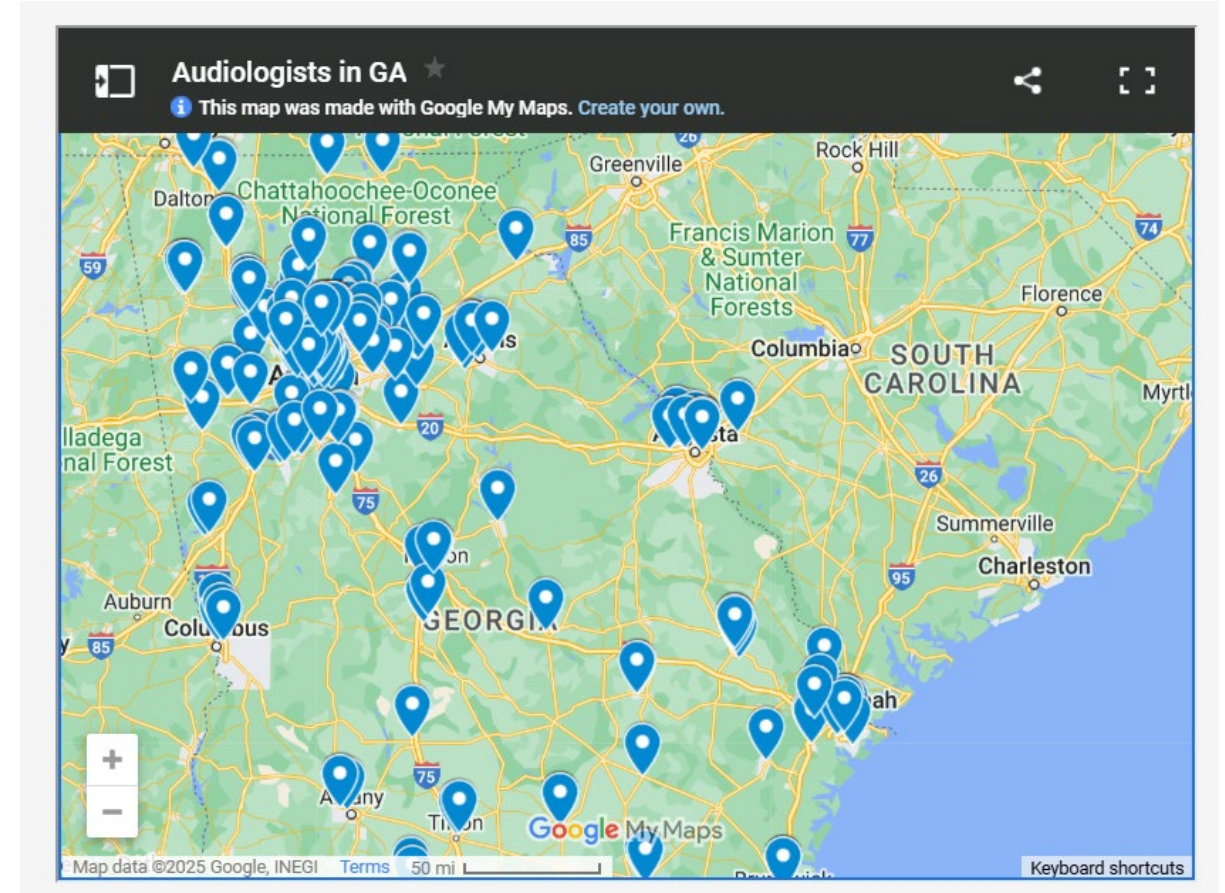
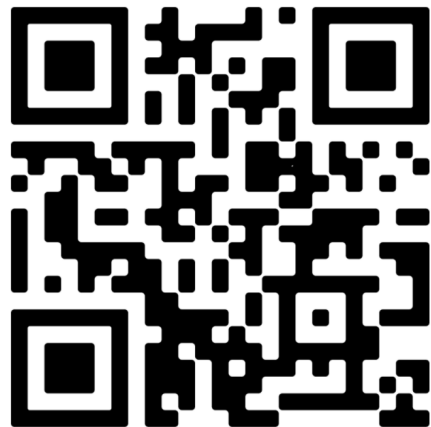


Español



# Referral Process After Failed Screening

- GMA is responsible for updates of the map, in collaboration with DPH staff



# Limitations



# Billing and Reimbursement

- Despite the change in law allowing qualified non-audiologists to perform nondiagnostic electro-physiologic methods to screen the auditory system past three months of age to age 22, **Medicaid has not expanded coverage to include the CPT code 92558 to allow OAE screening by a qualified non-audiologist to be reimbursed to an outpatient non-physician provider (i.e. health departments, birthing centers...)**
- GA needs more trained staff performing valid hearing in hearing deserts.



# Access to Equipment and Staffing

- Limited funding to purchase additional screening equipment
  - School districts
  - Health districts
  - Calibration/supply costs
  - If facilities are unable to bill for a service (OAE rescreening) it is difficult to convince the facility to buy the equipment
- Limited number of audiologists
  - Number of diagnostic clinics is limited by number of audiologists
  - Potential to cross-train EHDI coordinators to serve as test assistants to reach more areas



# Data Sharing

- Public Health Information Portal (PHIP) request is needed to see data from DPH
  - Detailed form filled out to request information
  - Need to be very specific about data needed (ex: referral rate for birth hospital by quarter for year 202X)
  - Lengthy process
    - Request needs to be approved before data is prepared/shared
    - Time between request submission and when data is received can be months



# Continuing the Partnership

# Funding

- Grants
  - There are a lot grants out there- apply for what you find, you may be surprised at the funding you are able to get.
- Parents becoming involved with the legislative process
  - Empowering parents to determine what their kids need
  - In Georgia this has led to a lot of our funding.
- “Finding your team”
  - Who in your state has the same goals as you?
  - Can you pool funding?

# Hearing Screening Events

- Relationship with DPH helped to reach the correct families (particularly children who missed their follow up newborn hearing screening due to Covid)
- Oak Hill/Fulton
- Valdosta
- Athens
- Upcoming: Macon (May 2025) and Valdosta (TBD)



# Other Forms of Collaboration

- PT/OAE module
- PT/OAE in person trainings (school and health department)
  - Completed across the state in 2024
  - Close to 500 staff were trained
- Conference trainings
  - Georgia School Nurses Conference training (June 2023)
  - Babies Can't Wait Conference (June 2024)
  - Upcoming: Georgia Child Health Conference (July 2025)

# EHDI Learning Retreat

- Training/learning retreat sponsored by DPH for EHDI coordinators throughout the state
- Celebrated EHDI successes
- Discusses areas for improvement
- Focus on EHDI coordinator's role and how it connects to language and literacy outcomes
- Next learning retreat scheduled for June 2025!





# Contact information

Georgia Mobile Audiology

[mapinfo@doe.k12.ga.us](mailto:mapinfo@doe.k12.ga.us)

<https://www.gamobileaudiology.org>

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# QUESTIONS?