

Tennessee EHDI Needs Assessment Project (TNNAP): A Collaborative Effort with State Stakeholders to Identify Provider Needs

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Introduction

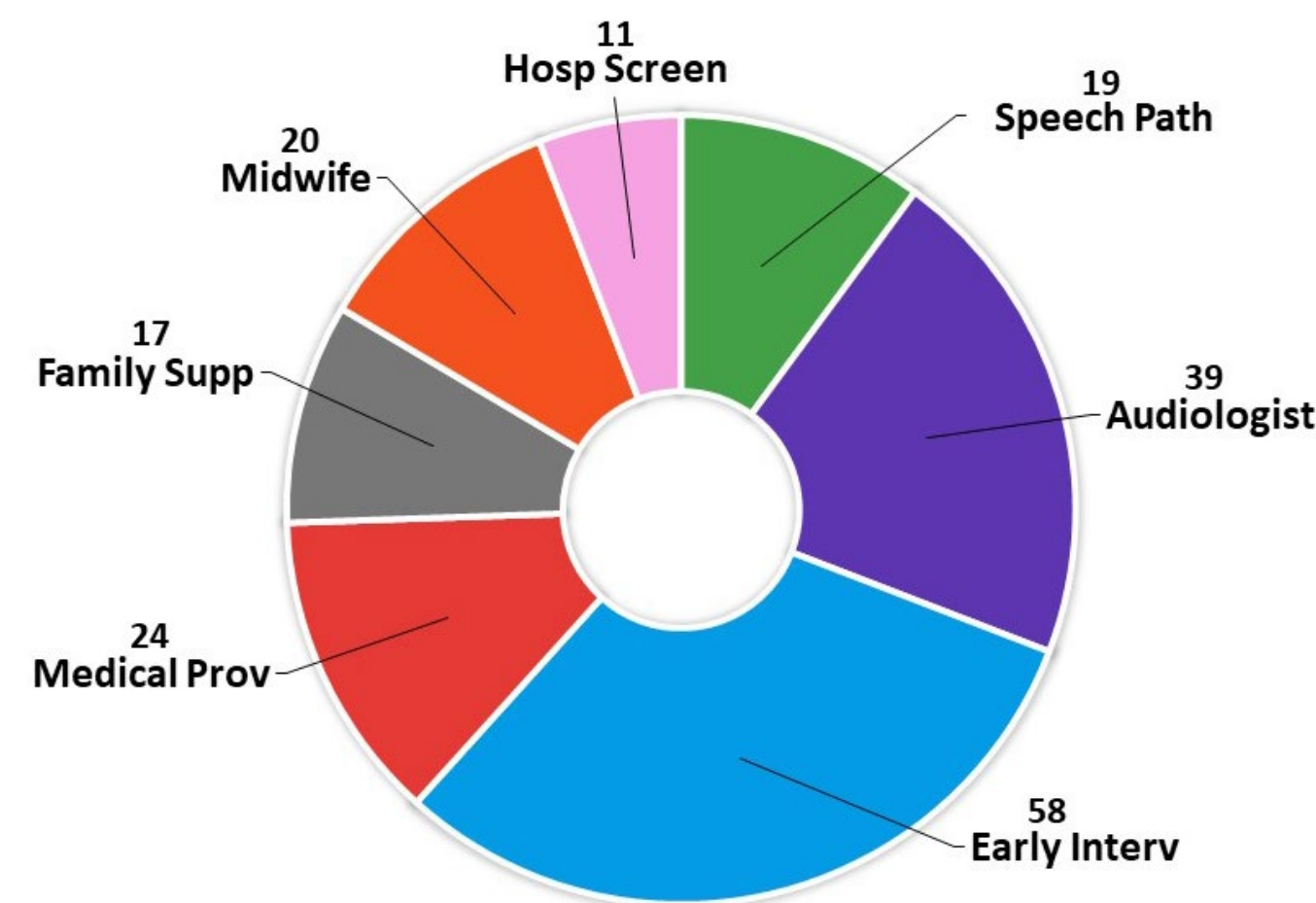
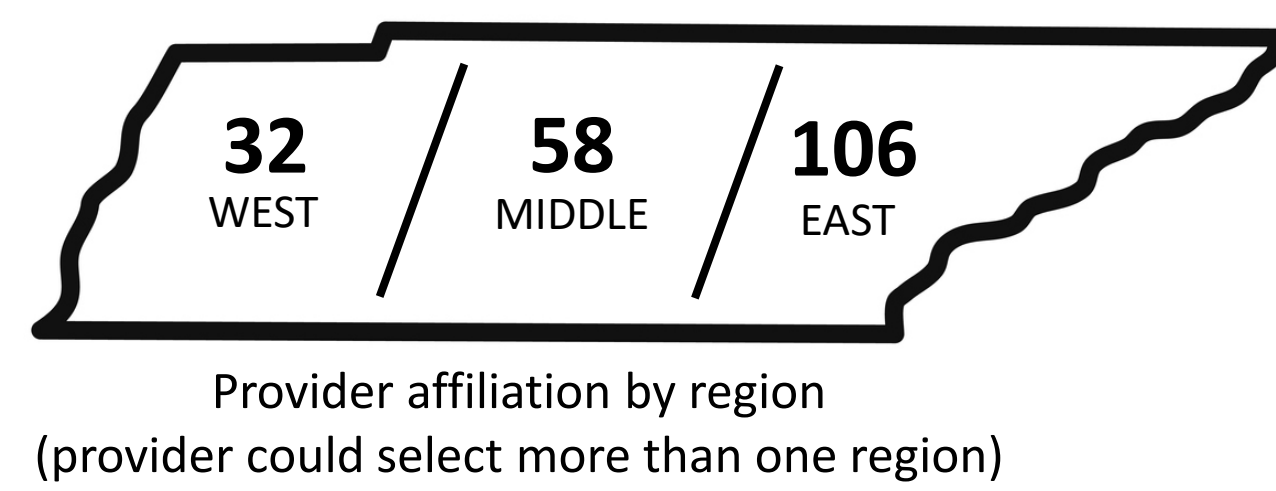
Tennessee's Department of Health Newborn Hearing Follow-Up (NHFU) Program partnered with the University of Tennessee Health Science Center (UTHSC) Audiology Program to create a needs assessment survey for early hearing detection and intervention (EHDI) providers statewide. The Tennessee EHDI Needs Assessment Project (TNNAP) content was designed based on input from a variety of stakeholders, many of whom are a part of the NHFU Program's learning community. The TNNAP work group included physicians, audiologists, hospital screeners, early interventionists, family support providers, midwives, and speech-language pathologists. The TNNAP questions evaluated overall confidence and/or competence levels of providers in the following areas: 1) service provision topics related to 1-3-6 benchmarks; 2) risk factors associated with late onset hearing loss; and 3) impact of late identification and intervention. Survey respondents were also asked for input on barriers to timely follow-up. The multi-track survey allowed respondents to answer uniquely curated questions relating to the areas mentioned above which were tailored specifically to the provider's point of care.

Methods

The 7-track survey was administered using Qualtrics and distributed statewide through various means. Work group members were essential in the distribution of the survey to peers who shared their provider role. The survey was also shared via social media groups, interagency emails, and association newsletters. The survey was opened on December 22, 2022, and was closed for the purpose of this presentation on February 9, 2022 (7 weeks).

Results

188 surveys were completed and analyzed. Due to the dissemination methods, the response rate could not be determined. A regional and provider breakdown can be found below.



Speech Pathologists (n=19)

Concern about potential hearing loss: 2 y/o with cerebral palsy, delayed receptive and expressive language, passed NHS

50% slightly, 45% somewhat/fairly, 5% very

CONFIDENCE:

Discussing effects of late identification of hearing loss: scenario – 2 y/o with cerebral palsy described above

15% not/slightly, 45% somewhat/fairly, 40% very

Discussing hearing follow-up per 2019 JCIH: scenario – child on caseload with moderate loss due to CMV

25% not/slightly, 30% somewhat/fairly, 45% very

Counseling family about genetic hearing loss in child with Connexin 26 etiology.

50% not/slightly, 25% somewhat/fairly, 25% very

70% AGREE or STRONGLY AGREE with, "In my area, I know where to refer a child with risk factors for late onset hearing."

Acknowledgement of funding source: This publication was made possible (in part) by Health Resources and Services Administration. The views expressed in this document do not necessarily reflect the official policies of the Department of Health and Human Services, nor does the mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

Family Support Providers (n=17)

35% have OFTEN encountered a provider telling parents that a failed NHS was due to fluid or not a concern

42% noted they ALWAYS or OFTEN encounter parents who receive conflicting information from different EHDI providers

47% noted they ALWAYS or OFTEN encounter parents who are confused about the roles of different providers involved in their child's care

CONFIDENCE

Helping families who have received conflicting information

59% somewhat/fairly, 41% very

Helping families understand roles of different providers

6% not, 53% somewhat/fairly, 41% very

Having discussions with parents of medically fragile child

18% slightly, 18% somewhat, 35% fairly, 29% very

Early Intervention (n=58)

Concern about potential hearing loss: 2 y/o with cerebral palsy, delayed receptive and expressive language, passed NHS

30% not/slightly, 60% somewhat/fairly, 10% very

CONFIDENCE (only those who have these discussions, n=55,56)
Discussing effects of late identification of hearing loss: scenario – 2 y/o with cerebral palsy described above

32% not/slightly, 41% somewhat/fairly, 27% very

Discussing value of timely follow-up: scenario – recent NICU discharge, confirmed bilateral hearing loss via ABR, mom wants to wait 6 months until things "settle down"

9% not/slightly, 46% somewhat/fairly, 45% very

Discussing hearing follow-up as recommended by 2019 JCIH: scenario – 8-week NICU stay, global developmental delay, passed NHS

21% not/slightly, 45% somewhat/fairly, 34% very

Discussing, in general, hearing loss related questions with families

16% not/slightly, 55% somewhat/fairly, 29% very

Medical Providers (n=24)

CONFIDENCE

Guiding family to alternate ways to gain more information about hearing: scenario - family elected to decline the NHS due to religious regions

29% not/slightly, 38% somewhat/fairly, 33% very

Counseling on next steps: scenario - homebirth who missed NHS

29% somewhat/fairly, 71% very

Counseling about hearing follow-up: scenario – NICU graduate, passed NHS, 6-week stay, ECMO

21% not/slightly, 41% somewhat/fairly, 38% very

COMPETENCE

15% (3/20) provided a correct answer, in a free response, when asked to describe advice to family: scenario – NHS repeated multiple times before discharge, parents not concerned, no family history

96% (22/23) provided a correct answer, in a free response, when asked to describe advice to family: scenario – 3 y/o who babbled as an infant but stopped, passed NHS, no known risks

Out of a short list of correct and incorrect choices of risks, 69% chose "severe depression at birth with APGARs of 0-3 at 5 minutes"

29% chose "low birth weight"

"What equipment should an audiologist have when evaluating a 3-month-old NICU graduate who failed the NHS?"

46% ABR, 4% OAE, 33% either ABR or OAE, 17% I am unsure

Highly level of accuracy (92-96% correct) selecting accurate answers, from a short list, about effects of late identification of hearing loss

Audiologists (n=39)

Frequency that untimely follow-up is due to misinformation by other providers in EHDI system of care

44% never/rarely, 41% sometimes, 15% often

CONFIDENCE

Referring to local Part C EI office and knowing who to contact

18% slightly, 54% somewhat/fairly, 28% very

Recommending monitor schedules per JCIH risk factors

6% not/slightly, 35% somewhat/fairly, 59% very

Sharing expertise with other providers within or outside NHS system of care

2% slightly, 34% somewhat/fairly, 64% very

75% AGREE or STRONGLY AGREE they have a comprehensive network of specialists when need to refer children for other services

Midwives (n=20)

"NHS causes unnecessary anxiety for parents"

25% strongly disagree, 40% disagree, 35% neutral

94% provided an acceptable answer to "Why do you think it is important to identify hearing loss in newborns?"

60% knew where to find reliable information about infant hearing loss

50% were very familiar where to refer a family to a local hearing provider

100% of free response comments related to EXPENSE OF EQUIPMENT or CONCERNS ABOUT BREAKDOWN OF CURRENT EQUIPMENT

CONFIDENCE (all)

Ability to educate parents about NHS and benefits of early identification

15% not/slightly, 35% somewhat/fairly, 50% very

COMPETENCE (only those with OAE)

43% knew the correct number of times to repeat the NHS if a baby fails the first screening

Hospital Screeners (n=11)

"NHS causes unnecessary anxiety for parents."

9% strongly disagree, 55% disagree, 18% neutral, 18% agree

45% noted that they "usually" explain a failed screen is probably due to fluid

In a free response prompt about script to parents when a baby does not pass the screening, 55% of responses were judged to be unsatisfactory, 45% were satisfactory

When asked what additional training would be helpful, the overarching topics were INFORMATION ABOUT COUNSELING PARENTS and KNOWLEDGE ABOUT HOW THE EQUIPMENT WORKS

CONFIDENCE

64% were very confident in their position as NH screener

64% felt their training adequately prepared them for the position

COMPETENCE

64% knew the correct number of times to repeat the NHS if a baby fails the first screening

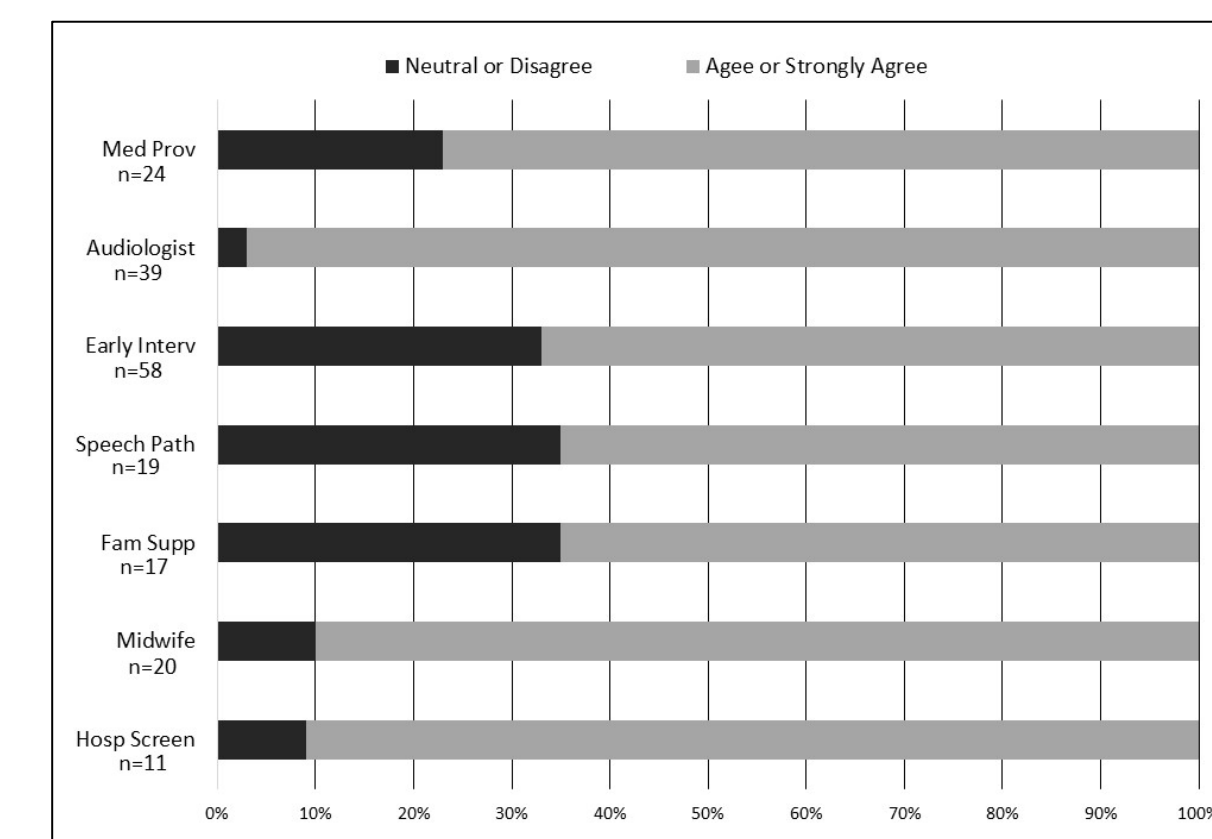
91% knew to rescreen both ears even if baby fails initial NHS at one ear

SPECIAL THANK YOU to TNNAP work group members for their assistance in developing and disseminating this survey:

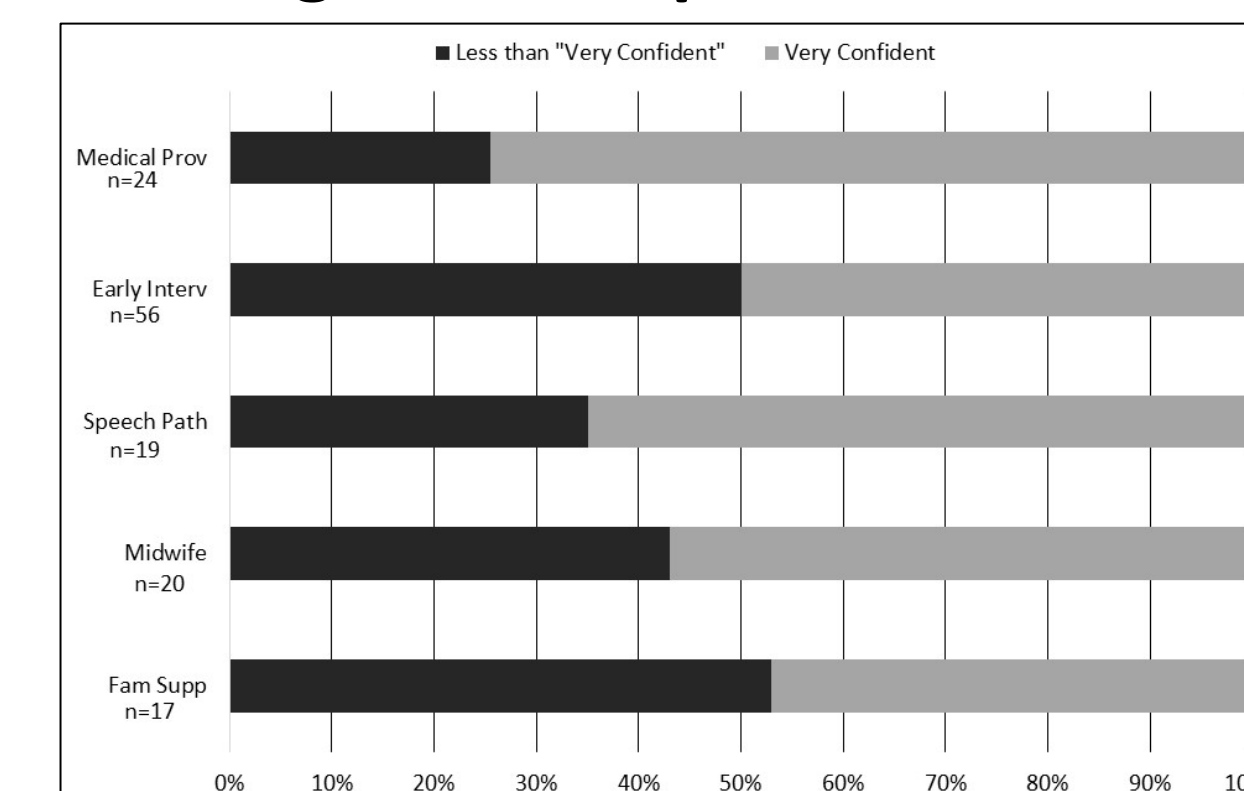
Ms. Emily Noss of UTHSC Audiology and Speech Pathology; Dr. John Purvis of UTHSC College of Medicine, Department of Pediatrics; Dr. Frank Virgin of Vanderbilt University Medical Center, Department of Otolaryngology; Dr. Brittany Day of Vanderbilt University Medical Center, Department of Hearing and Speech Sciences; Dr. Shannon Bramlette of East Tennessee State University, Center for Audiology and Speech Pathology; Dr. Carrie Crittendon and Dr. Emily Jones of West Tennessee School for the Deaf, Audiology; Ms. Melanie Lindsay, Ms. Merritt Holmberg, and Ms. Leah Williamson of Family Voices of Tennessee PEARS Program; Ms. Catherine Goodwin, Ms. Catherine Pippen, Ms. Charmaine Woods of Tennessee Early Intervention System, Ms. Rebekah Mustaleski of Roots and Wings Midwifery, Ms. Alisa Weeks of Tennessee School for the Deaf 0-5 Language and Literacy Program, Ms. Dana Conn of Tennessee Deaf-Blind Project, Mr. Bobby Jackson, Ms. Mary Fosbinder of Pediatrics. Special appreciation to the UTHSC EHDI Practicum students for serving as a pilot work group. Thank you also to Tennessee EHDI providers who completed this survey.

Perceived Reliability of NHS

"NHS is a reliable means to determine which babies need additional testing to rule out hearing loss."



Confidence Discussing Pending Hearing Follow-Up



Audiologists and hospital screeners were not asked this question. Two (2) early interventionist responses were not included for this calculation because respondents indicated they do not have this type of discussion with families.

Barriers to Hearing Follow-Up per audiologists

Barriers to hearing follow-up	Responses*
Appropriate education about follow-up	71% (17/24)
Parent compliance	25%
Appointment availability (audiology, ENT)	17%
Family resources (transportation)	12%
Referral roadblocks (insurance, slow referrals)	12%
Accessibility to services	12%
Contact information (wrong number, disconnected)	12%

*Responses often included more than one barrier to service. Not all audiologists provided an answer to this question

Preferred Type of Educational Resources

Resources in order of popularity			
Medical Prov	Single page handouts	Flowcharts	Local provider list
Audiologist	Local provider list	Website	Brochures
Early Interv	Single page handouts	Local provider list	Website
Speech Path	Website	Single page handouts	Local provider list
Family Supp	Local provider list	Single page handouts	Website
Midwife	Single page handouts	Local provider list	Website
Hosp Screen	Brochures	Videos	Website

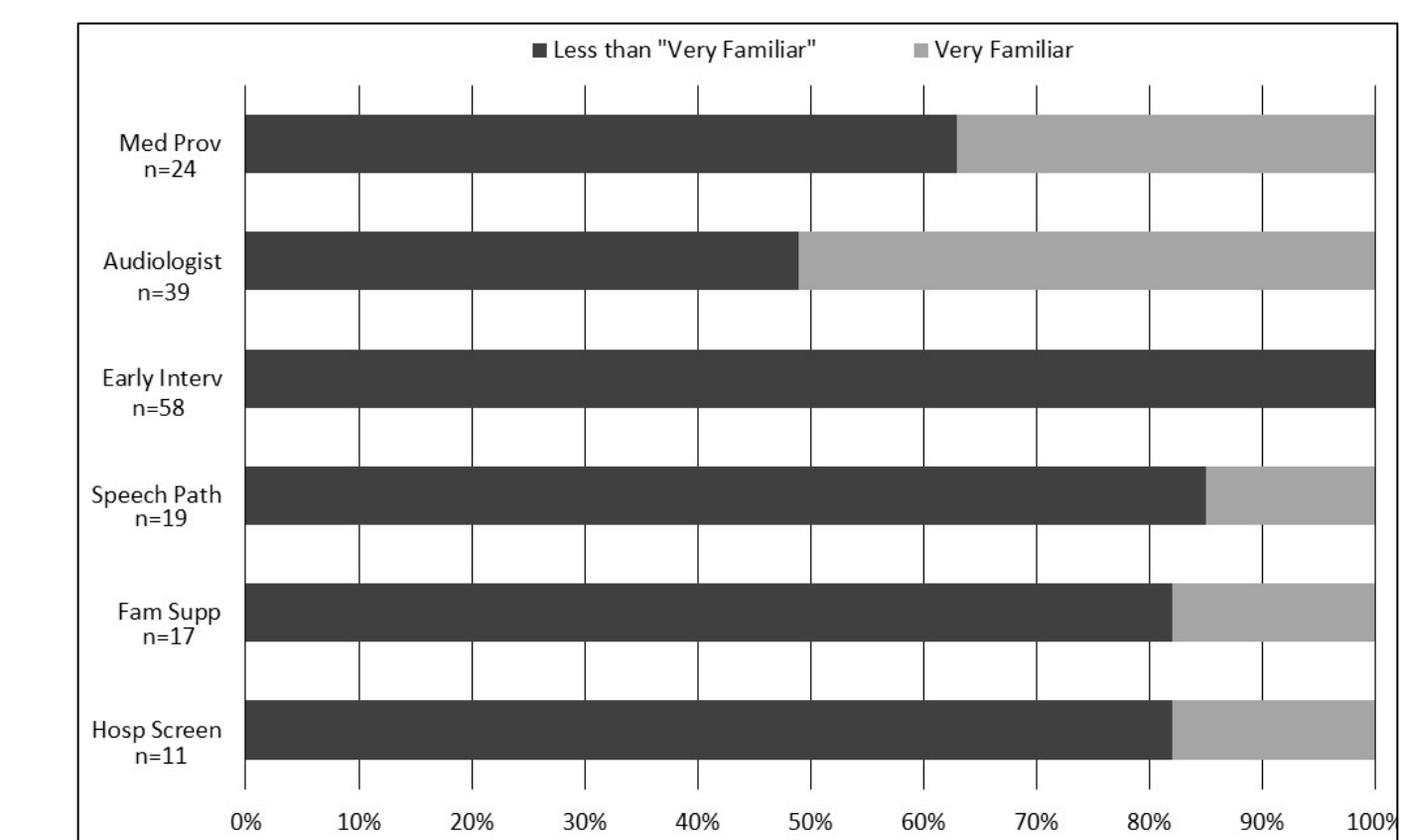
Discussion

It stands to reason that providers of all disciplines should strive for the highest level of competence, knowledge, and confidence in order to best serve and support families trying to navigate the EHDI system of care with their child. Therefore, survey responses which indicated providers were anything less than "very familiar" or "very confident" were then judged to be areas of need for that specific provider group or, in some cases, across provider groups. This information, paired with an abundance of other data collected from the survey, will fuel the development of new educational resources and training opportunities.

The strategic incorporation of free response answers within certain tracks (e.g., medical providers and hospital screeners) allowed a unique assessment of competence in several counseling scenarios, all of which were deliberately crafted by work group members and based on actual experiences in their own professional practice or encounters with families.

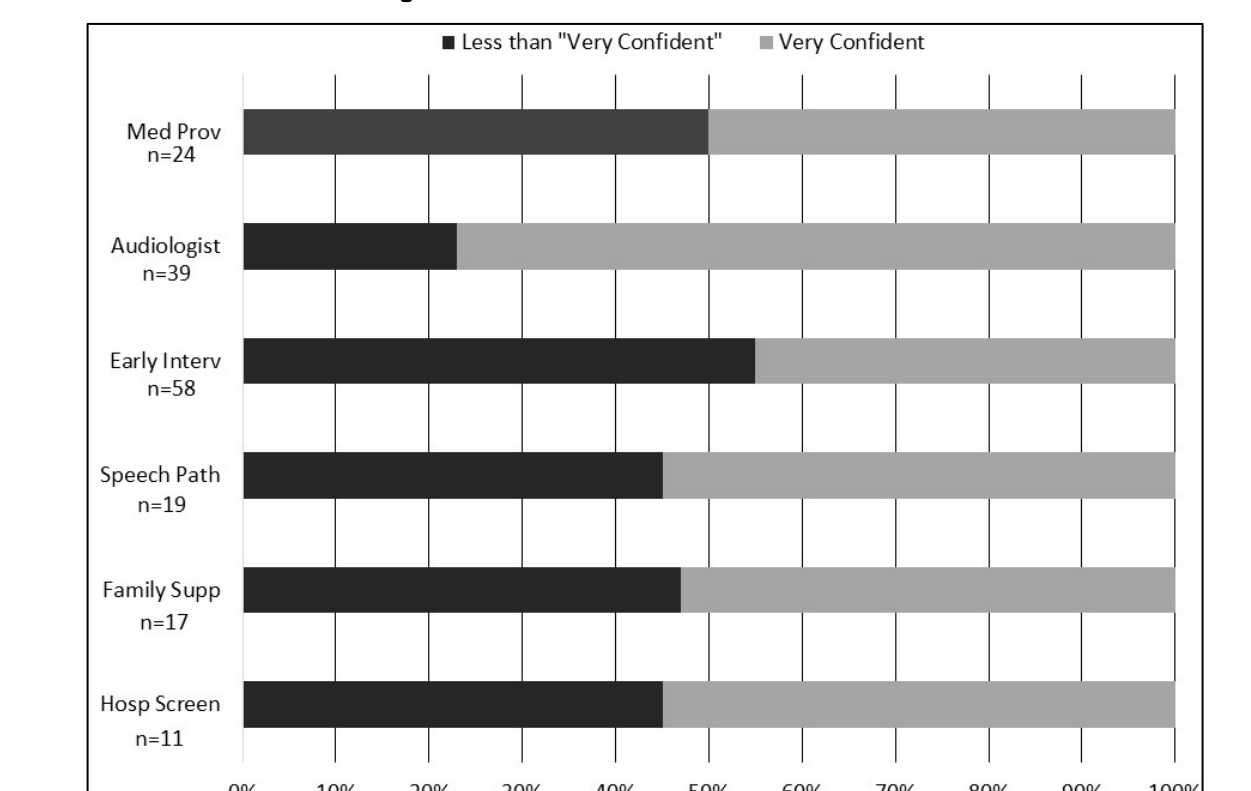
While the sample group for several provider tracks was relatively small, the feedback is still felt to have significant value to Tennessee's NHFU Program. Survey responses will be analyzed – not to single out any one provider group, but instead used to reveal opportunities for education and training on a variety of EHDI-related topics, with the intent to ultimately strengthen the care delivered to children and their families across the state.

Familiarity with 2019 JCIH Risk Factors



Midwives were not asked this question.

Confidence Incorporating ASL Interpreters



Midwives were not asked this question.

Barriers to Intervention Follow-Up per speech pathologists

Barriers to intervention follow-up	Responses*
Appropriate education about follow-up	87% (13/15)
Language barrier	13%
Family resources (transportation)	13%
Referral roadblocks (insurance, slow referrals)	13%
Appointment availability	7%
Grief process	7%
Parent compliance	7%
COVID	7%

*Responses often included more than one barrier to service. Not all speech pathologists provided an answer to this question

Other Feedback

I personally think a statewide routine newsletter for EHDI would be fabulous, listing the new 2019 risk factors in the newsletter, best practices for newborn hearing screeners, etc. - Family Support Provider

I wish I had been given more specific information about the ABR test. Parents and physicians ask intelligent questions...I would like to be more prepared. - Hospital Screener

With (Part C) getting so many new service coordinators across the state, more visits to staff meetings to discuss the importance would be great. - Early Intervention Provider