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**Findings from the Virginia Survey on Audiology
Services: Diagnostic Audiology Services for
Children Birth to 36 Months**

Final Report

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Findings from the Virginia Survey on Audiology Services: Diagnostic Audiology Services for Children Birth to 36 Months

Executive Summary

The Virginia Survey on Diagnostic Audiology Services for Children Birth to 36 Months revealed the following key findings on the knowledge and opinions of audiologists regarding the VEHDI Program and EHDI services in Virginia:

- Most of the respondents knew the 1-3-6 Goals (85%) and read the VEHDI Program's protocols for audiologists (88%).
- One-fifth of survey respondents (21%) did not have the "Virginia's Resource Guide for Parents" available at their practice.
- One or more respondents would like to receive training on the following equipment: Auditory Brainstem Response Air Conduction (1%), Auditory Brainstem Response Bone Conduction (4%), Auditory Steady-State Response Audiometry (8%), Conditioned-Orienting Response Audiometry (1%), and Transient Evoked Otoacoustic Emission (1%). An encouraging number of those surveyed are willing to provide colleagues training on this equipment: 13%, 13%, 7%, 8%, and 11%, respectively.
- 86 percent reported that the VEHDI Program is a part of their reporting protocol following the confirmation of hearing loss.
- All of those surveyed strongly agreed (56%) or agreed (44%) with the statement "*I see the value in reporting to the VEHDI Program.*"
- 71 percent of respondents strongly agreed or agreed that the VEHDI Program provides their facility with helpful information to give to parents of children with hearing loss.
- Almost all of the survey respondents thought it would be very helpful (61%) or somewhat helpful (32%) to have access to VISITS and report results electronically. A little over 60 percent would prefer to report evaluation results via VISITS versus the current paper format (22% preferred this method).
- The survey implies that one factor contributing to loss or delay to follow-up is that the "family must travel an inconvenient distance." Respondents reported that this factor sometimes (50%) or nearly always (10%) poses a challenge to follow-up.

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Purpose

The Virginia Early Hearing Detection and Intervention (VEHDI) Program conducted a survey to evaluate the knowledge and opinions of audiologists regarding the VEHDI Program and EHDI services in Virginia.

The purpose of this survey was to assess audiological facilities' capacity to provide services to children aged birth to 3 years, specifically the tools (i.e. equipment) used for diagnostic evaluations. The survey instrument allowed the VEHDI Program to assess the current training needs of audiologists in regard to using equipment and referring children for early intervention services so that the VEHDI Program may tailor future training sessions to these needs. Responses to this survey were expected to provide critical information as the VEHDI Program works toward establishing a comprehensive system for reducing loss or delay to hearing evaluation follow-up.

Methods

Selection of Audiological Facilities. The VEHDI Program maintains a Microsoft Access database that contains a list of licensed audiologists and audiological facilities in the Commonwealth of Virginia and surrounding states (District of Columbia, Maryland, North Carolina, Tennessee, and West Virginia). The facilities on this list fall into three categories (facility status): approved diagnostic sites, screen-only sites, and sites that do not fall on either list. In order to be considered an "approved" site or a "screen-only" site, the site must submit an application and meet certain criteria (i.e. equipment, licensed audiologist on staff, etc.). The facilities that "do not fall on either list" did not meet the criteria or simply did not submit an application for approval.

Data Collection. The audiologist database currently contains 152 audiological facilities; 5 have recently closed and 147 are open. The Audiologist Survey was mailed to all open facilities in April 2008, and was placed online using "Survey Gizmo," an online survey tool. Respondents could return the survey using the postage-paid envelope provided, or they could complete the survey online (<http://vahealth.audiologistsurvey.sgizmo.com>). Audiologists were given a month to respond to the survey with a due date of May 9, 2008.

Facilities that had more than one location were asked to have one licensed audiologist who works primarily at each location designated to complete the survey. Facilities with more than one location, but one mailing address, were requested to complete one survey per location.

Table 1. Total Response Rate

Facility Status	Total number survey was sent to	Total number of respondents	Response Rate
Approved Diagnostic Site	51	37	73%
Screen-Only Site	34	18	53%
Neither	62	17	27%
Total	147	72	49%

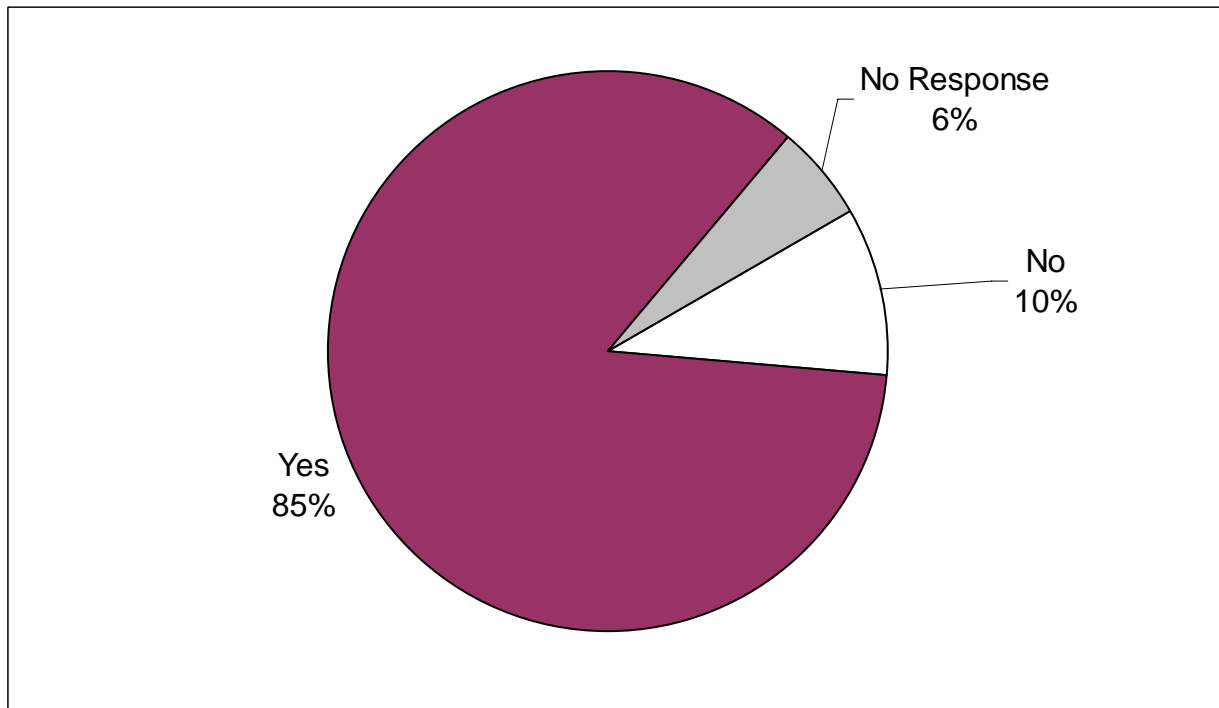
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Results

I. Knowledge of the VEHDI Program

A. How Familiar Are You With the VEHDI Program

Figure 1-1. Know the 1-3-6 Goals



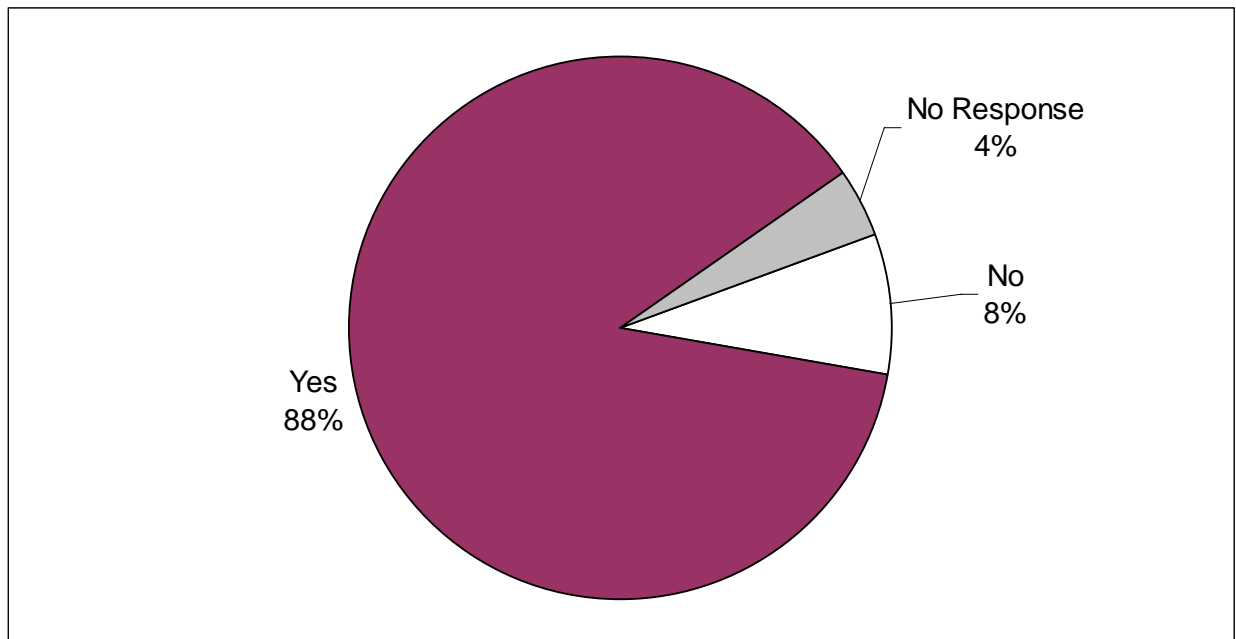
* Total percent does not equal 100 due to rounding.

Respondents indicated how familiar they were with the VEHDI Program's goals.

- Most of the respondents (85%) indicated that they knew the 1-3-6 goals.
- One-tenth of survey respondents (10%) indicated that they did not know the 1-3-6 Goals.
- Six percent of survey respondents did not respond to this question.

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Figure 1-2. Read the VEHDI Program Protocols for Audiologists

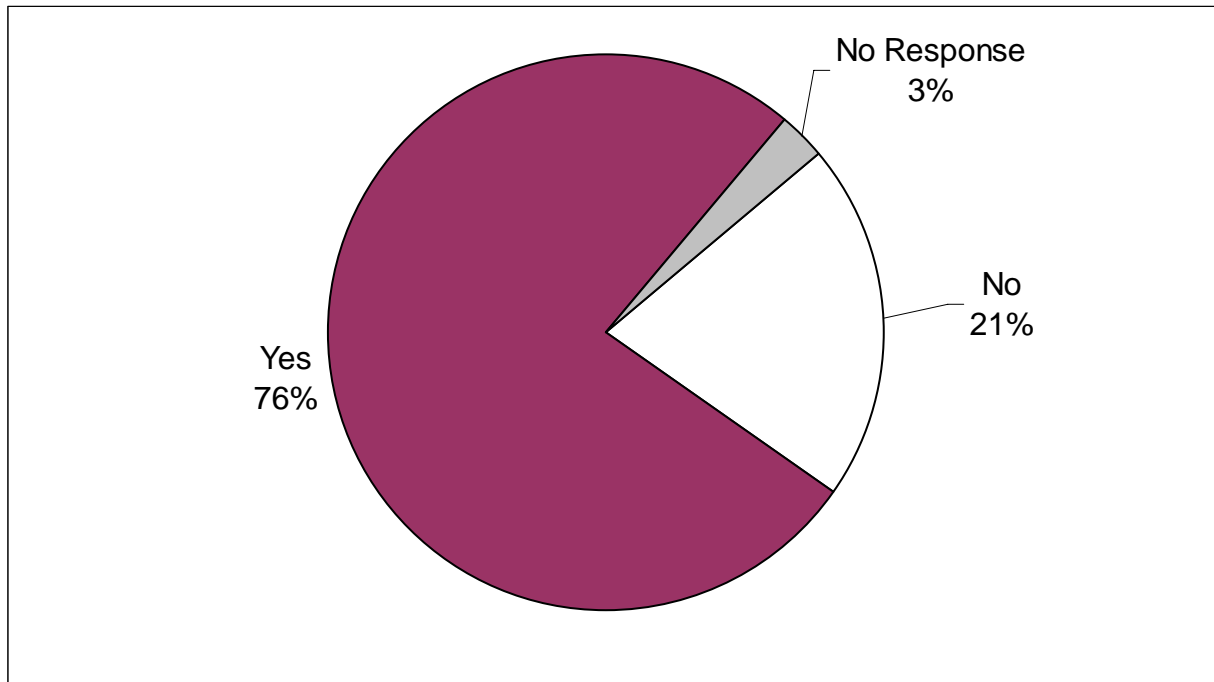


Respondents indicated whether they read the protocols the VEHDI Program produced for Audiologists.

- Most of the respondents (88%) indicated that they read the VEHDI Program Protocols for Audiologists.
- Eight percent of survey respondents indicated that they did not read the VEHDI Program Protocols for Audiologists.
- Four percent of survey respondents did not respond to this question.

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Figure 1-3. Virginia’s Resource Guide for Parents



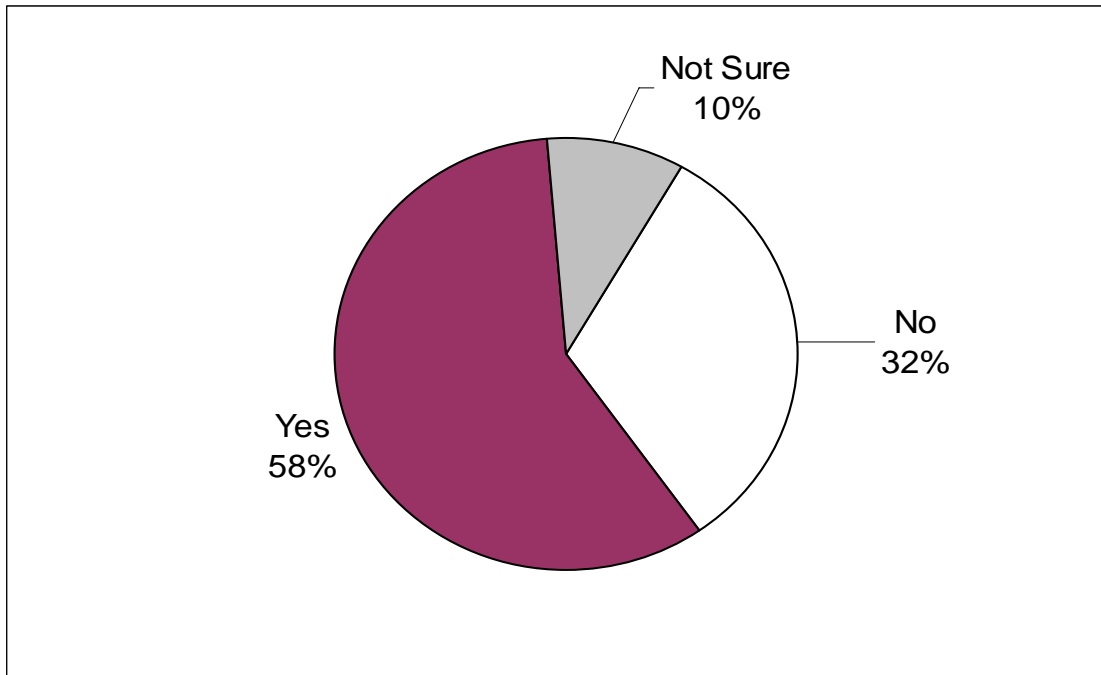
Respondents indicated whether “Virginia’s Resource Guide for Parents” is available at their practice.

- Just over three-fourths of respondents (76%) reported that this resource guide is available at their practice.
- One-fifth of respondents (21%) indicated they do not have this resource guide available at their practice.
- Three percent of survey respondents did not respond to this question.

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B. VEHDI Program's List of Approved Diagnostic Audiological Facilities

Figure 1-4. Facility's Status

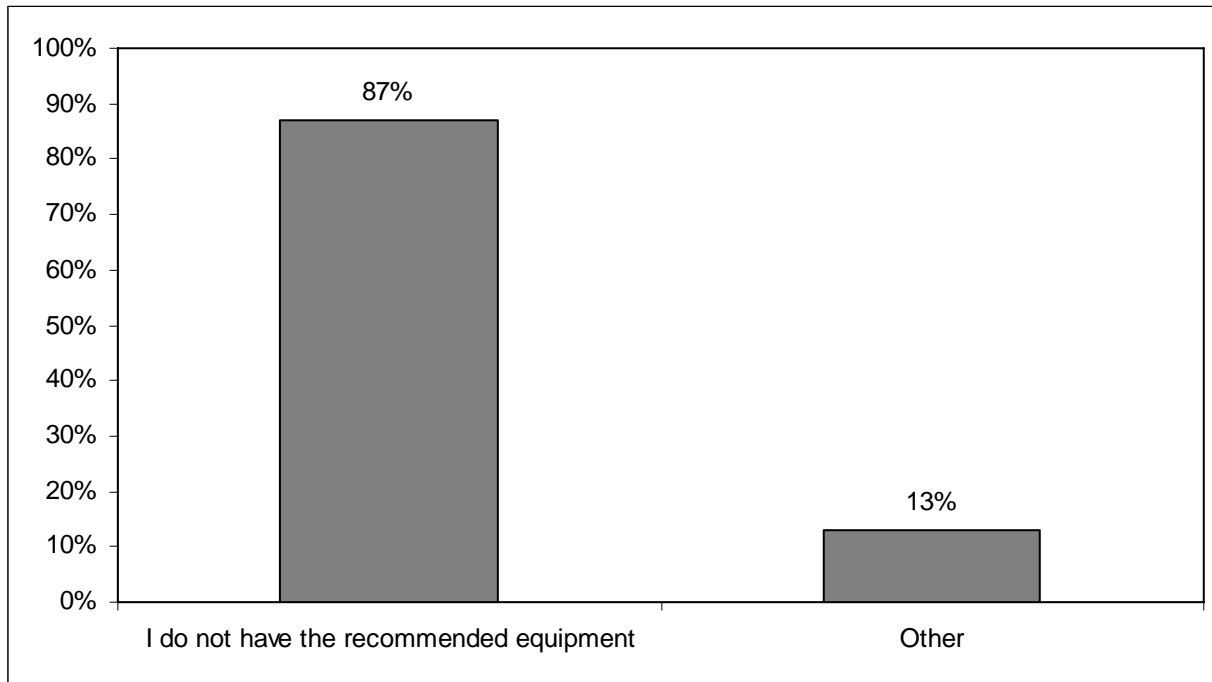


The survey respondents were asked to indicate whether they were on the VEHDI Program's list of Approved Diagnostic sites/facilities.

- Over one-half of survey respondents (58%) replied that they were on the list.
- Just under one-third of survey respondents (32%) replied that they were not on the list.
- One-tenth of those surveyed (10%) replied that they were not sure if they were on the list.

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Figure 1-5. Reason Not on the List



If survey respondents replied “No” to “My facility is on the list” (n = 23) they were asked to indicate why.

- Eighty-seven percent indicated that they did not have the recommended equipment. Note: In order to be approved and listed as a diagnostic site, a facility must have the following (recommended) equipment: (1) Auditory Brainstem Response (ABR) (Bone Conduction and/or Air Conduction) and (2) Otoacoustic Emission (OAE) (Distortion Product and/or Transient Evoked).
- Thirteen percent indicated that they were not on the list due to “Other” reasons (i.e. “...audiologists do not perform all of the procedures”).
- When asked if they would like to receive more information about the criteria for being placed on the approved list, 78 percent replied “No.” (Of this 78 percent, 50 percent are on the VEHDI Program’s “screen-only” list.) Thirteen percent indicated that they would like to receive information, and 9 percent of respondents did not respond to this question.

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II. Diagnostic Audiology Services for Children Birth to 36 Months of Age

Table 2. Equipment Used in the Assessment of Hearing (n (%))

Equipment	I have this equipment in my facility.	I use this equipment in my facility.	I would like to receive additional training on using this equipment.	I am willing to provide colleagues training on using this equipment.
Auditory Brainstem Response Air Conduction (ABR AC)	41 (57%)	35 (49%)	1 (1%)	9 (13%)
Auditory Brainstem Response Bone Conduction (ABR BC)	34 (47%)	27 (38%)	3 (4%)	9 (13%)
Auditory Steady-State Response (ASSR) Audiometry	13 (18%)	9 (13%)	6 (8%)	5 (7%)
Behavioral Observation Audiometry (BOA)	56 (78%)	48 (67%)	0	12 (17%)
Conditioned Play Audiometry	55 (76%)	52 (72%)	0	12 (17%)
Conditioned-Orienting Response (COR) Audiometry	30 (41%)	25 (35%)	1 (1%)	6 (8%)
Distortion Product Otoacoustic Emission (DPOAE)	61 (85 %)	53 (74%)	0	12 (17%)
Reflexes	62 (86%)	52 (72%)	0	10 (14%)
Standard Audiometry	60 (83%)	54 (75%)	0	10 (14%)
Transient Evoked Otoacoustic Emission (TEOAE)	37 (51%)	32 (44%)	1 (1%)	8 (11%)
Tympanometry	65 (90%)	46 (64%)	0	13 (18%)
Visual Reinforcement Audiometry (VRA)	57 (79%)	52 (72%)	0	12 (17%)

Respondents were asked to indicate which equipment they had at their facility.

- Almost all of the survey respondents reported that their facility had DPOAE (85%), Reflexes (86%), Standard Audiometry (83%), and/or Tympanometry (90%).
- More than three-fourths of respondents reported that they had BOA (78%), Conditioned Play Audiometry (76%), and/or VRA (79%).
- More than one-half of those surveyed reported that they had ABR AC (57%) and/or TEOAE (51%).
- Fewer than fifty percent of respondents reported that they had ABR BC (47%) and/or COR (41%).
- Eighteen percent reported that they had ASSR.

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- Seven percent reported that their facility had equipment other than those listed (i.e. “frequency specific ABR”).

Respondents were asked to report which equipment they used (person completing the survey may not be trained on all equipment at the facility).

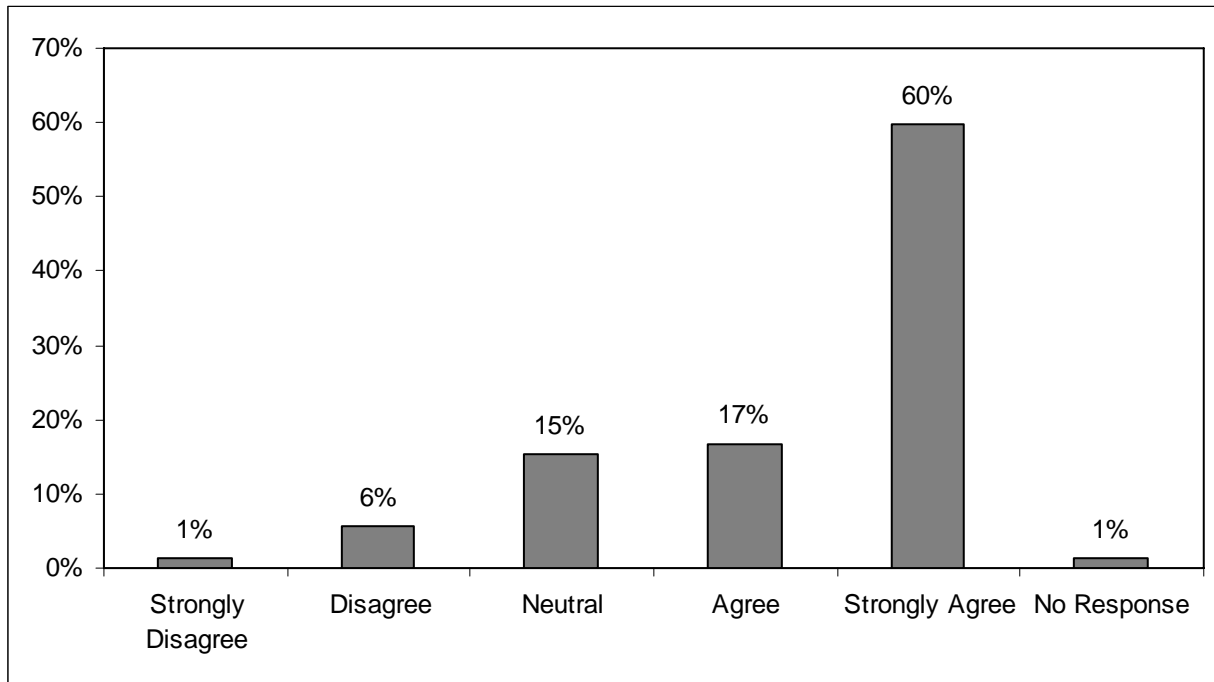
- Three-fourths of survey respondents (75%) reported that they use Standard Audiometry.
- Less than three-fourths of survey respondents reported that they use Conditioned Play Audiometry (72%), DPOAE (74%), Reflexes (72%), and/or VRA (72%).
- Just over two-thirds of those surveyed (67%) reported that they use BOA, and just under two-thirds of respondents (64%) reported that they use Tympanometry.
- About one-half of those surveyed (49%) reported that they use ABR AC.
- More than one-third of those surveyed reported that they use ABR BC (38%), COR (35%), and/or TEOAE (44%).
- Thirteen percent reported that they use ASSR.

Respondents were also asked to indicate which equipment they would like to receive training on, or would like to provide colleagues training on.

- Eight percent of respondents indicated that they would like to receive training on ASSR, and four percent of respondents indicated that they would like to receive training on ABR BC.
- Less than one-fourth of survey respondents indicated that they are willing to provide training to their colleagues on Tympanometry (18%), BOA (17%), Conditioned Play Audiometry (17%), DPOAE (17%), and/or VRA (17%).
- Just over one-tenth of survey respondents indicated that they are willing to provide training to their colleagues on ABR AC (13%), ABR BC (13%), Reflexes (14%), Standard Audiometry (14%), and/or TEOAE (11%).
- Just under one-tenth of those surveyed indicated that they are willing to provide training to their colleagues on ASSR (7%) and/or COR (8%).

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Figure 2-1. Trained Personnel

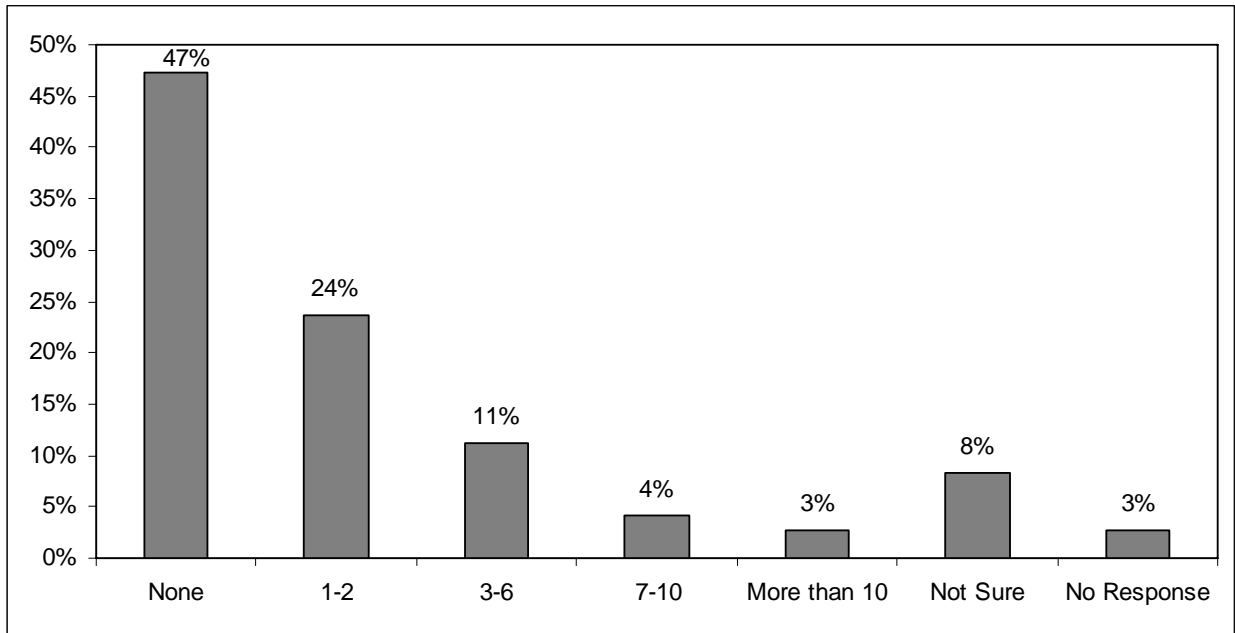


Respondents indicated their agreement with a statement concerning adequately trained personnel at their facility.

- More than three-fourths of those surveyed strongly agreed (60%) or agreed (17%) with the statement “*My facility has adequately trained personnel to diagnose hearing loss in children between birth and 3 years of age.*”
- Combined, seven percent of respondents strongly disagreed (1%) or disagreed (6%) with this statement.
- Fifteen percent reported that they were neutral about the statement.
- One percent of those surveyed did not respond to this question.

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Figure 2-2. Approximate Number of Children Diagnosed With Hearing Loss



The survey asked respondents to approximate the total number of children between birth and 3 years of age diagnosed by their facility in the last three months.

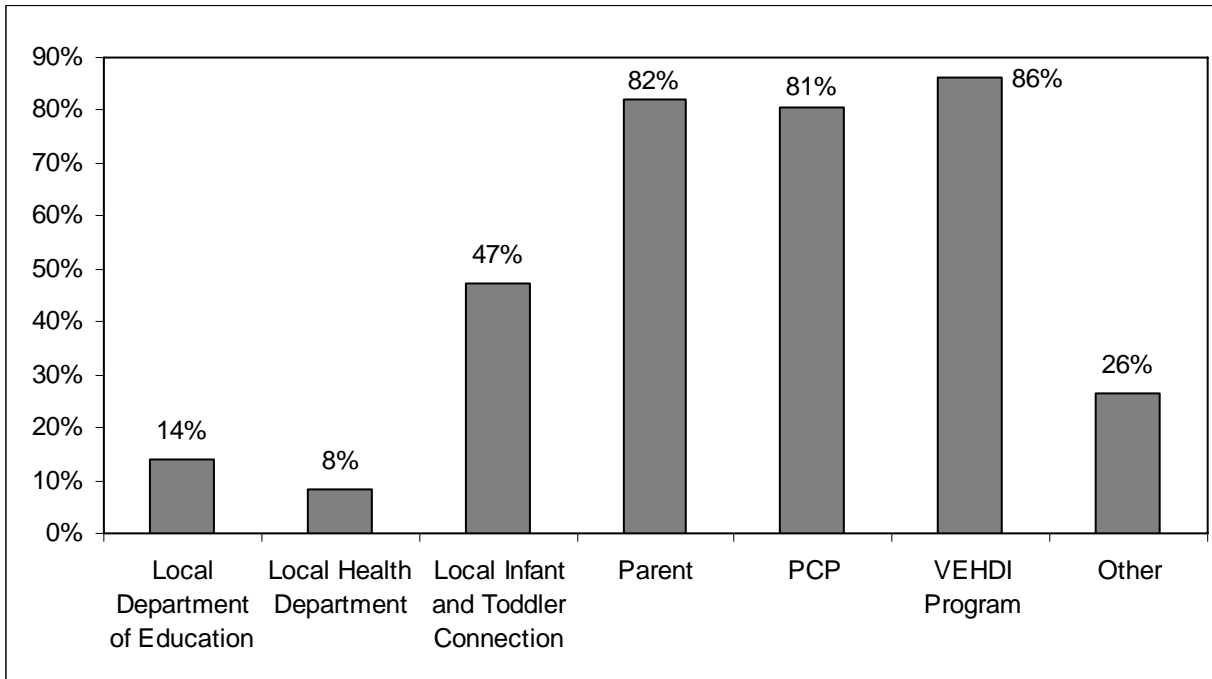
- Nearly one-fourth of respondents (24%) indicated that they diagnosed one to two children with hearing loss.
- Just over one-tenth of survey respondents (11%) indicated that they diagnosed three to six children.
- Seven percent of respondents indicated that they diagnosed more than six children (7-10 children (4%) and more than 10 children (3%)).
- Just under fifty percent of those surveyed indicated that they did not diagnose any children with hearing loss over the last three months.
- Eight percent were not sure how many children they diagnosed with hearing loss over the last three months.
- Three percent of those surveyed did not respond to this question.

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III. Protocol for Reporting Confirmation of Hearing Loss

A. Reporting Protocol

Figure 3-1. Reporting Protocol Following the Confirmation of Hearing Loss



The survey asked respondents to identify their facility's reporting protocol following confirmation of hearing loss.

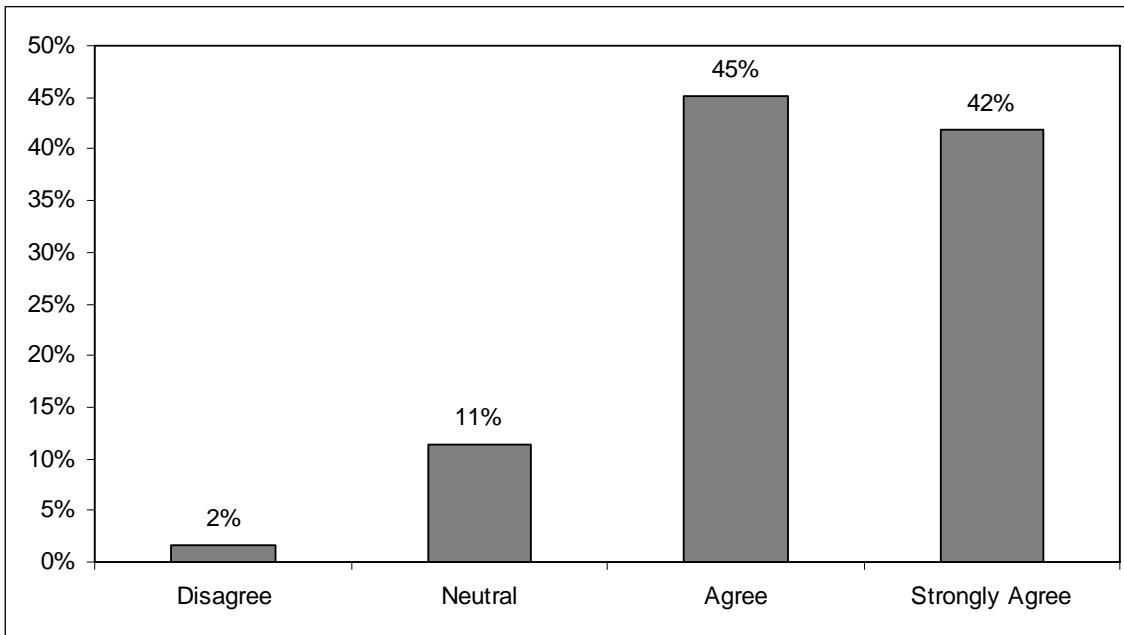
- The majority of the respondents (86%) indicated that they report hearing losses to the VEHDI Program.
- Most of the respondents indicated that they report to the parents (82%) and/or primary care provider (81%).
- Just under half of the respondents (47%) indicated that they report hearing losses to the local Infant and Toddler Connection (Part C) agency.
- Combined, more than one-fifth of survey respondents indicated that they report to the local department of education (14%) and the local health department (8%).
- More than one-fourth of respondents (26%) indicated that they report hearing losses to "Other" providers and/or entities not listed. The written responses included an ear, nose and throat specialist; Children's Hospital of The King's Daughters for further evaluation; give contact information for infant toddler program and health department to parents; the University of Virginia for confirmation of hearing loss; and a geneticist.
- None of the respondents reported that they report hearing losses to the state Department of Education.

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B. Feelings About Reporting to the VEHDI Program

If respondents replied that their facility’s reporting protocol includes the VEHDI Program (n = 62), they were asked to indicate their agreement with statements concerning reporting to the VEHDI Program.

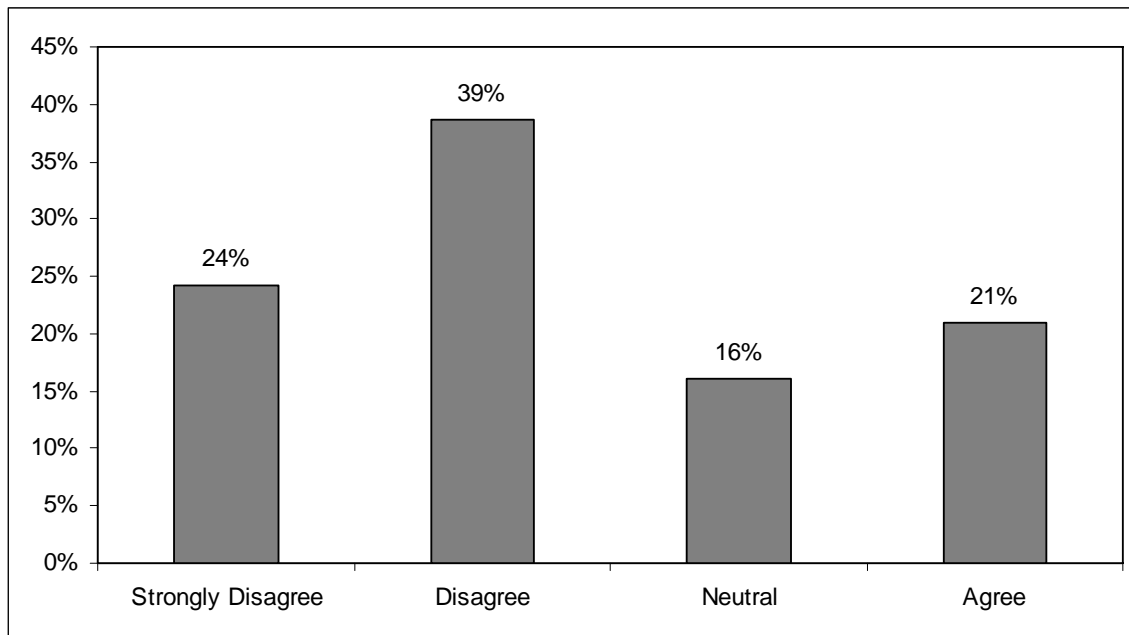
Figure 3-2. Ease of Reporting Hearing Losses



- The majority of the survey respondents strongly agreed (42%) or agreed (45%) with the statement “*It is easy to report hearing loss to the VEHDI Program.*”
- Two percent of respondents disagreed with this statement, and 11% reported that they were neutral about this statement.
- None of the respondents strongly disagreed with this statement.

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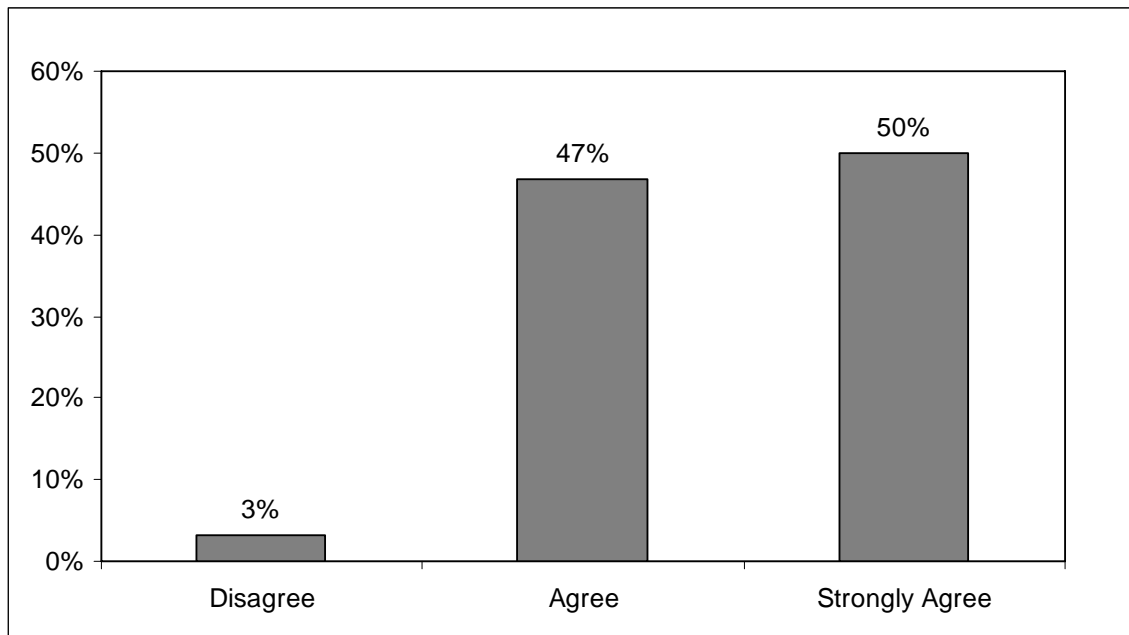
Figure 3-3. Poses a Burden on Time



- More than two-thirds of survey respondents (39%) disagreed with the statement *“Reporting test results to the VEHDI Program poses a burden on my time.”*
- Just under one-fourth of survey respondents (24%) strongly disagreed with this statement.
- While none of the respondents strongly agreed with this statement, one-fifth of respondents (21%) agreed with this statement.
- Sixteen percent of those surveyed indicated that they were neutral about this statement.

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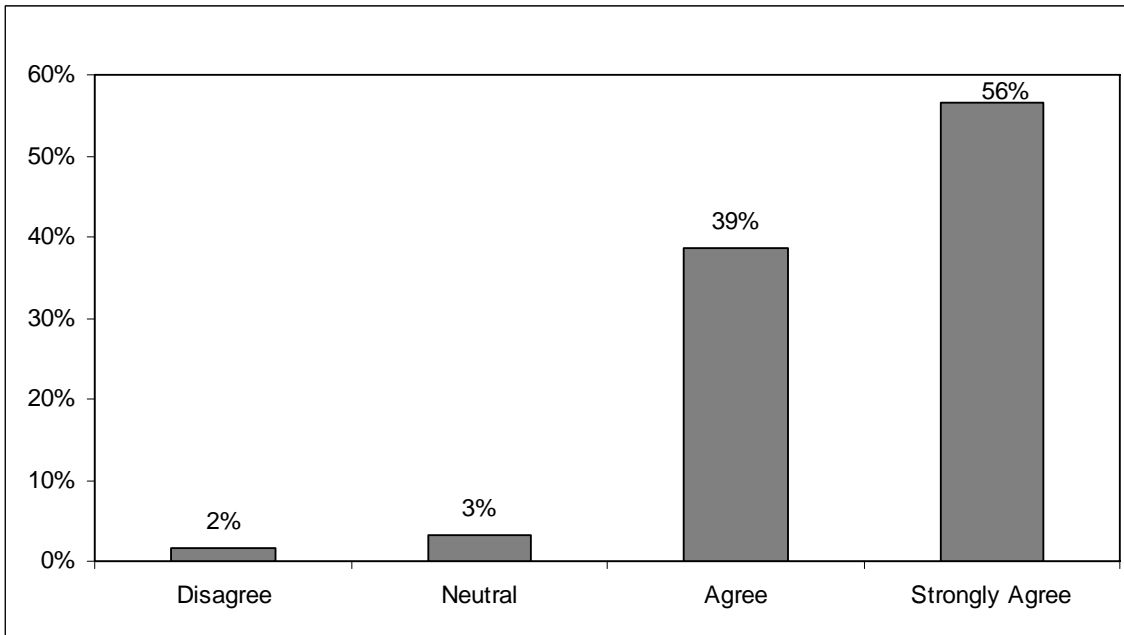
Figure 3-4. Able to Report Results in a Timely Fashion



- The majority of the survey respondents strongly agreed (50%) or agreed (47%) with the statement *“I am able to report results of audiologic evaluations in a timely fashion (within 2 weeks of screening).”*
- Three percent of respondents disagreed with this statement.
- None of the respondents reported that they strongly disagreed with or were neutral about this statement.

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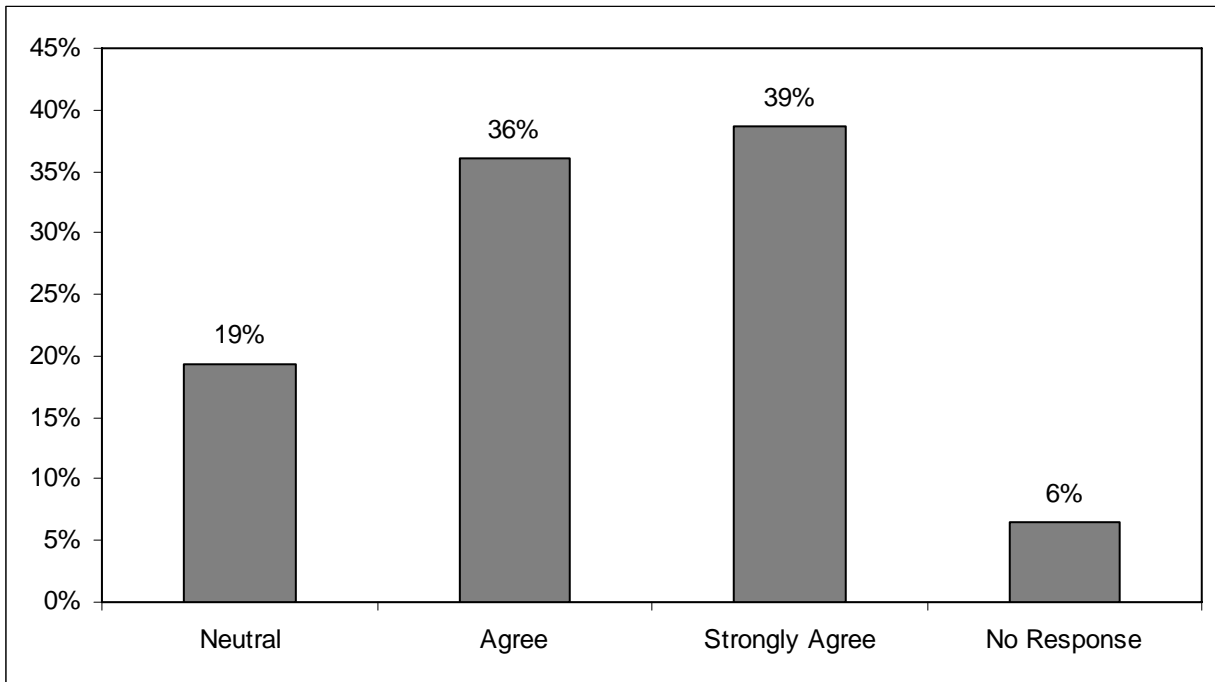
Figure 3-5. Provide Data of High Quality



- The majority of those surveyed strongly agreed (56%) or agreed (39%) with the statement “*The data I provide to the VEHDI Program are of high quality.*”
- Two percent of respondents disagreed with this statement, while none of the respondents strongly disagreed with this statement.
- Three percent of survey respondents indicated that they were neutral about this statement.

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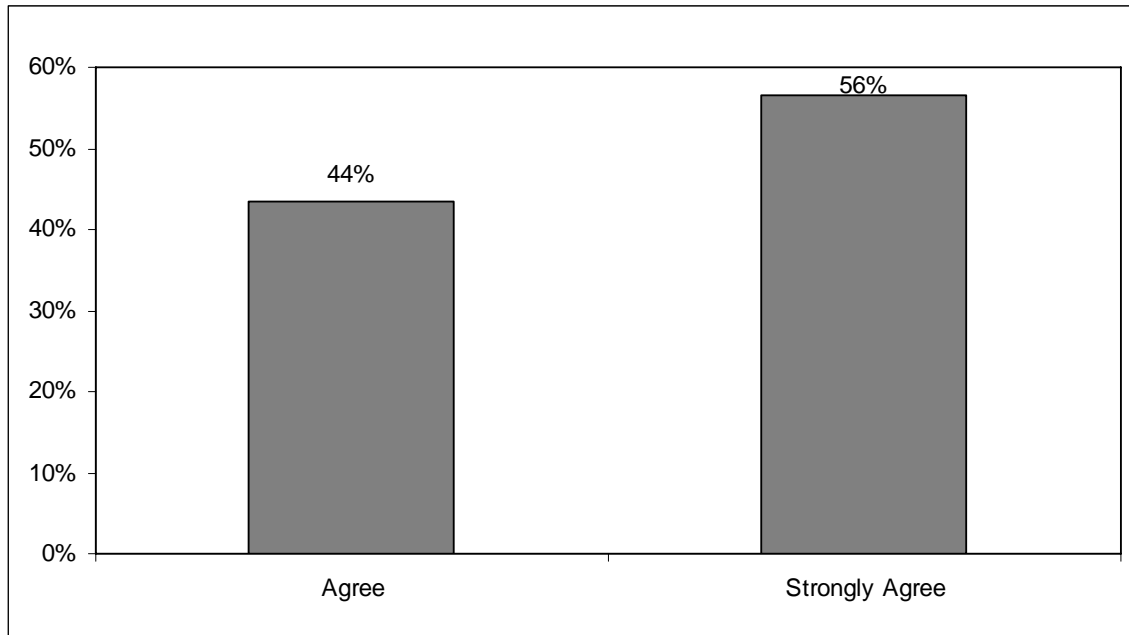
Figure 3-6. The VEHDI Program is Able to Keep Data Private and Confidential



- Three-fourths of survey respondents strongly agreed (39%) or agreed (36%) with the statement *“The VEHDI Program is able to keep the data I provide private and confidential.”*
- None of the respondents strongly disagreed or disagreed with this statement.
- Nineteen percent of those surveyed reported that they were neutral about this statement.
- Six percent of survey respondents did not circle a response for this statement. These respondents replied by stating, “I don’t know if this is true.”

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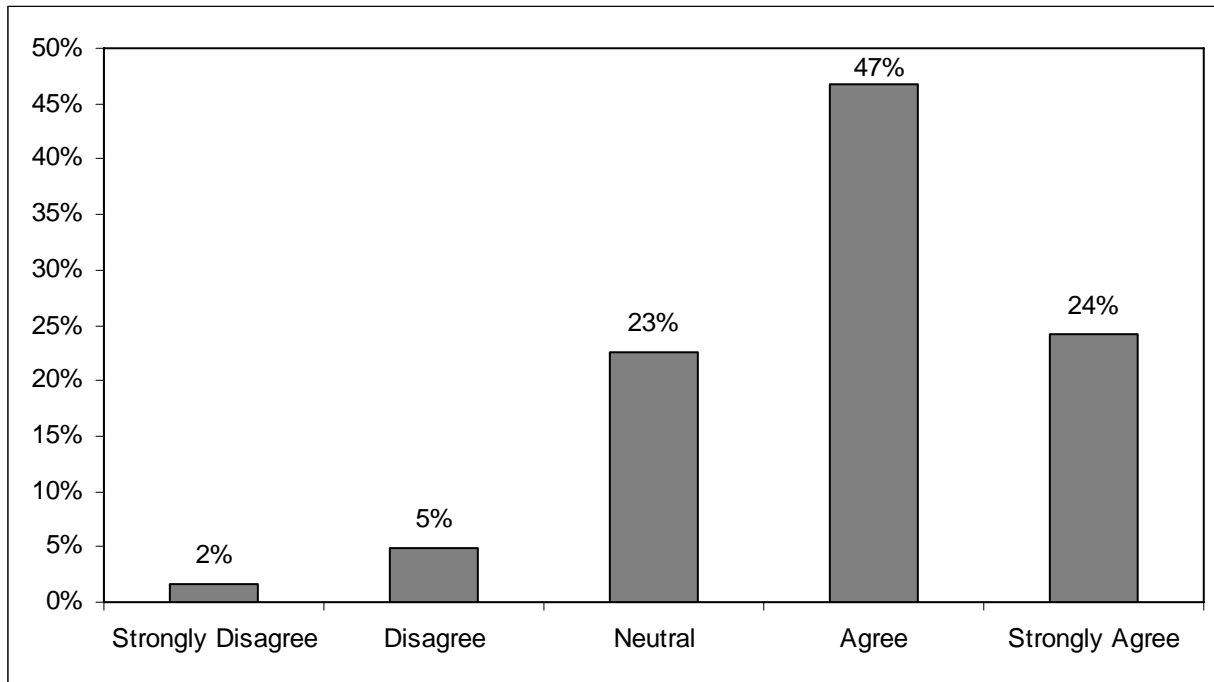
Figure 3-7. See Value in Reporting to the VEHDI Program



- All of those surveyed strongly agreed (56%) or agreed (44%) with the statement “*I see the value in reporting to the VEHDI Program.*”

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Figure 3-8. VEHDI Program Provides Helpful Information



* Total percent does not equal 100 due to rounding.

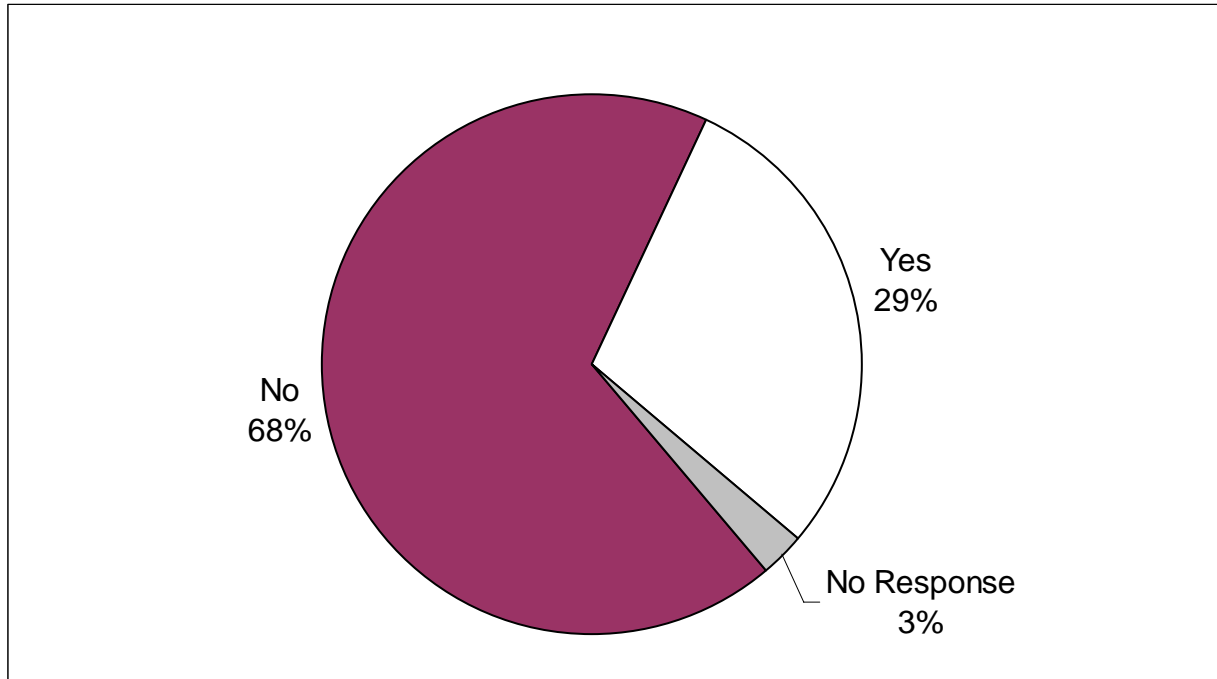
- More than two-thirds of survey respondents strongly agreed (24%) or agreed (47%) with the statement *“The VEHDI Program provides my facility with helpful information to give to parents of children with hearing loss.”*
- Combined, seven percent of survey respondents strongly disagreed (2%) or disagreed (5%) with the statement.
- Less than one-fourth of survey respondents (23%) indicated that they were neutral about this statement.

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C. Virginia Infant Screening and Infant Tracking System (VISITS)

The Virginia Infant Screening and Infant Tracking System (VISITS) is a Web-based reporting system currently used by hospitals to report results of hearing screenings.

Figure 3-9. Have Heard of VISITS

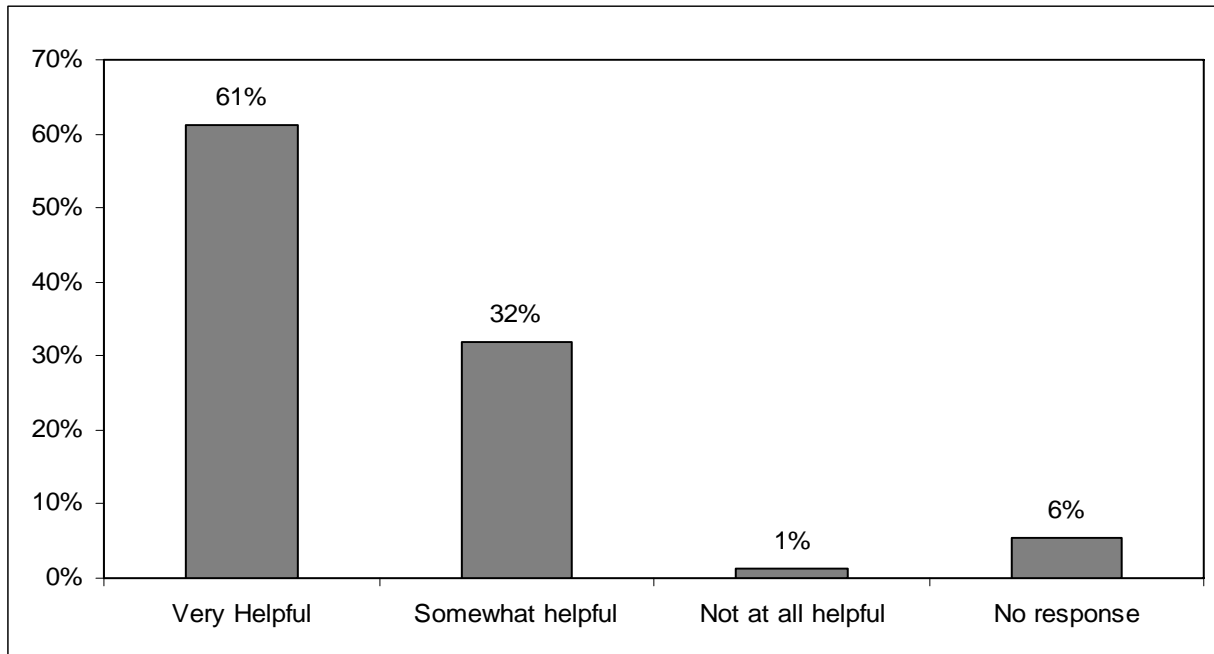


The survey asked respondents if they heard of VISITS.

- More than two-thirds of survey respondents (68%) indicated that they have never heard of VISITS.
- Less than one-third of those surveyed (29%) indicated that they have heard of VISITS.
- Three percent of those surveyed did not respond to this question.

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Figure 3-10. Access to VISITS and Report Results Electronically



Respondents were asked to indicate how helpful they think it would be to have access to VISITS and report evaluation results electronically.

- Almost all of the survey respondents indicated that it would be very helpful (61%) or somewhat helpful (32%) to have access to VISITS and report results electronically.
- One percent of those surveyed indicated that it would not be helpful to have access to VISITS and report evaluation results electronically.
- Six percent of those surveyed did not respond to this question.

Table 3. Have you heard of VISITS and how helpful would it be to have access?

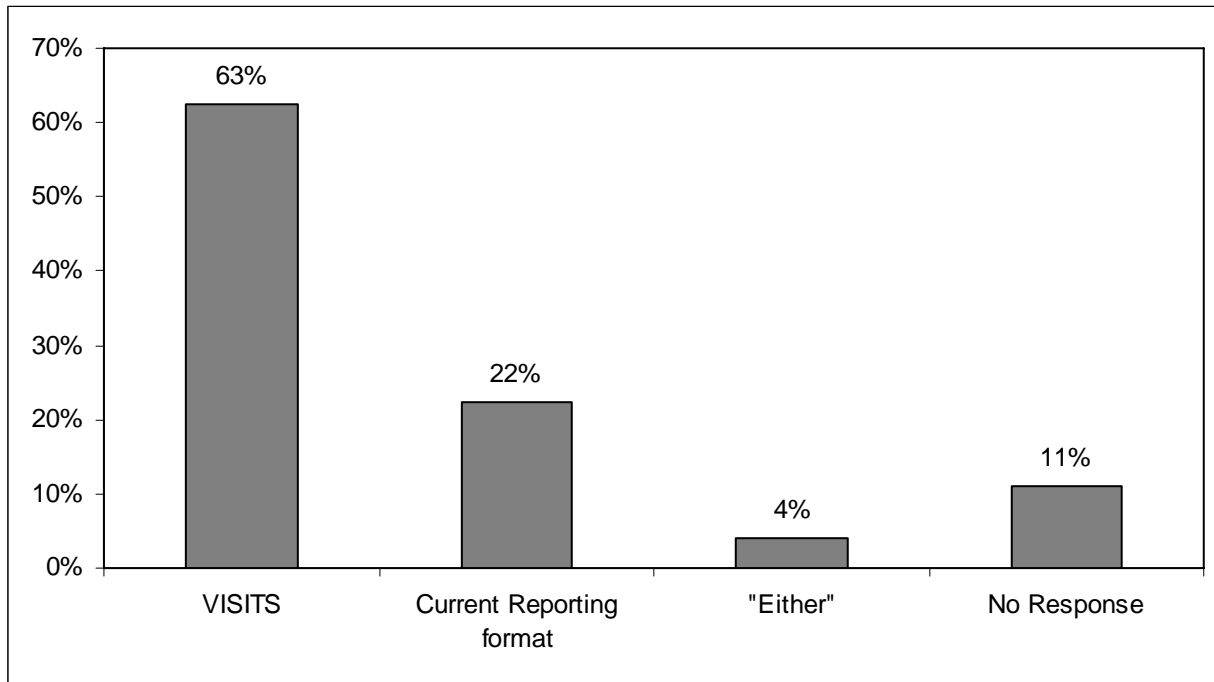
Response Item	Very helpful	Somewhat helpful	Not at all helpful	No response	Total
No	30 (61%)	17 (35%)	0	2 (4%)	49 (100%)
Yes	14 (67%)	6 (29%)	1 (5%)	0	21 (100%)
No response	0	0	0	2 (100%)	2 (100%)
Total	44 (61%)	23 (32%)	1 (1%)	4 (6%)	72 (100%)

[n (%)]

- Almost all of the respondents who reported that they have never heard of VISITS indicated that having access to VISITS would be very helpful (61%) or somewhat helpful (35%).
- Almost of all of the respondents who reported that they have heard of VISITS indicated that having access to VISITS would be very helpful (68%) or somewhat helpful (29%).
- One respondent who heard of VISITS before this survey indicated that having access to the Web-based system would not be helpful.

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Figure 3-11. Preferred Reporting Format



Respondents were asked to indicate, if given the option, would they prefer to report evaluation results via VISITS or the current reporting format (paper, via mail or fax).

- Just under two-thirds of survey respondents (63%) indicated that they would prefer to report evaluation results via VISITS.
- Over one-fifth of survey respondents (22%) indicated that they would prefer to report evaluation results using the current reporting format.
- Four percent indicated that they preferred either reporting format.
- Eleven percent of those surveyed did not respond to this question.

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Table 4. How helpful would it be to have access and which reporting method do you prefer?

Response Item	VISITS	Current format	Either	No response	Total
Very helpful	37 (84%)	2 (5%)	3 (7%)	2 (5%)	44 (100%)
Somewhat helpful	8 (35%)	13 (57%)	0	2 (9%)	23 (100%)
Not at all helpful	0	1 (100%)	0	0	1 (100%)
No response	0	0	0	4 (100%)	4 (100%)
Total	45 (63%)	16 (22%)	3 (4%)	8 (11%)	72 (100%)

[n (%)]

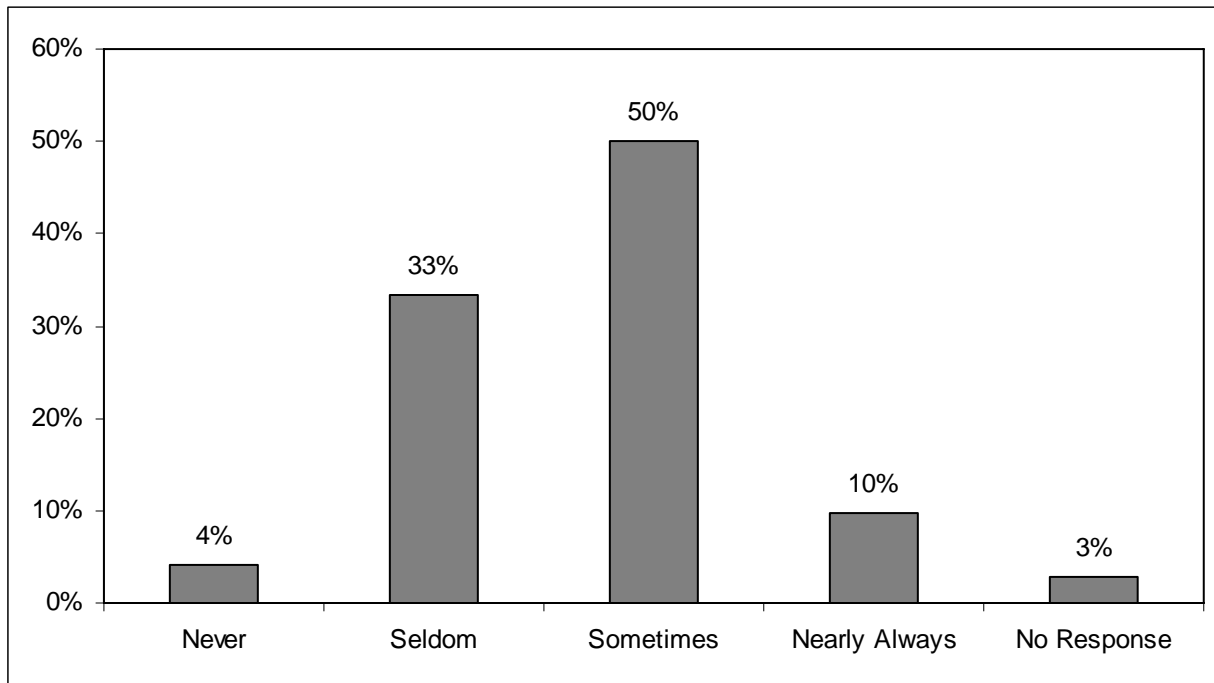
- Of those who indicated that it would be very helpful to have access to VISITS and report results electronically, 84 percent indicated that, if given the option, they would prefer to report results via VISITS, 5 percent indicated that they would prefer the current reporting format, and 7 percent indicated that they preferred either reporting format.
- Of those who indicated that it would be somewhat helpful to have access to VISITS and report results electronically, 57 percent indicated that they would prefer the current reporting format, while 35 percent indicated that they would prefer to report results via VISITS.

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IV. Major Challenges and Barriers to Follow-Up

In an effort to evaluate factors contributing to loss or delay to follow-up, respondents were asked to indicate how often these factors pose a challenge/barrier to follow-up (in their opinion and/or their experiences).

Figure 4-1. Inconvenient Distance to Travel

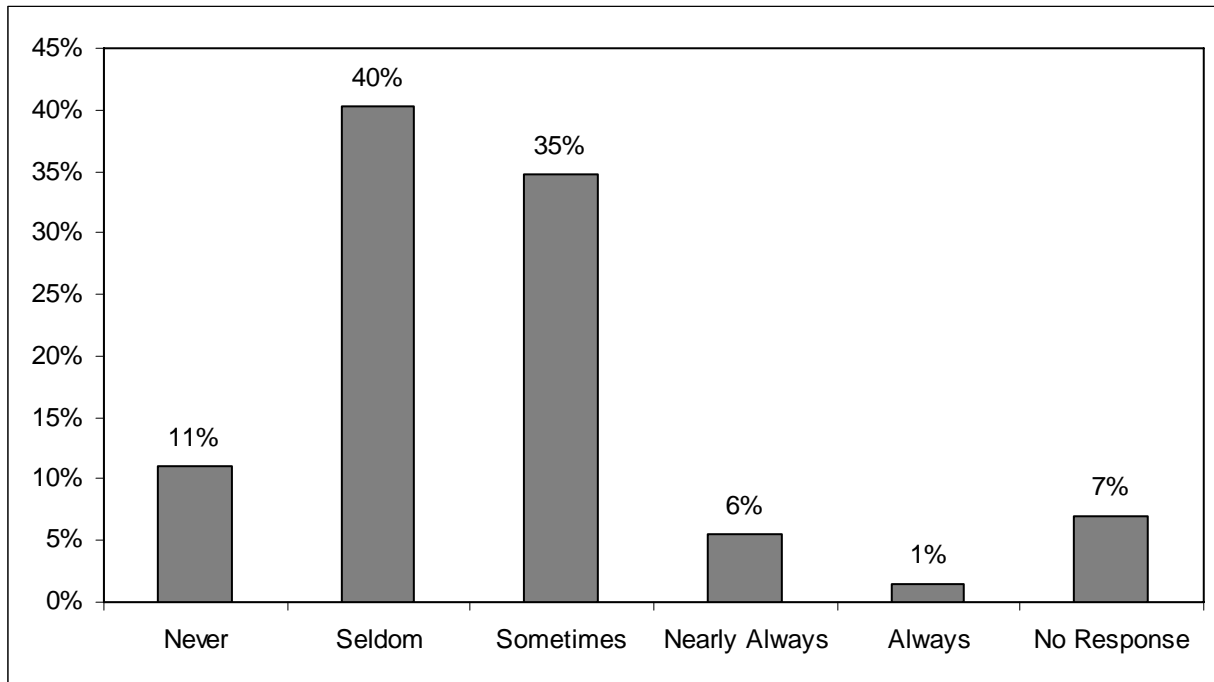


Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: “*Family must travel an inconvenient distance.*”

- The majority of the respondents indicated that “*Family must travel an inconvenient distance*” sometimes (50%) or seldom (33%) poses a challenge/barrier to follow-up.
- One-tenth of survey respondents (10%) indicated that “*Family must travel an inconvenient distance*” nearly always poses a challenge/barrier to follow-up.
- Four percent indicated that this factor never poses a challenge/barrier to follow-up.
- None of the respondents indicated that this factor always poses a challenge/barrier to follow-up.
- Three percent of those surveyed did not respond to this statement.

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Figure 4-2. Pre-Authorization Requirements Causes Delays

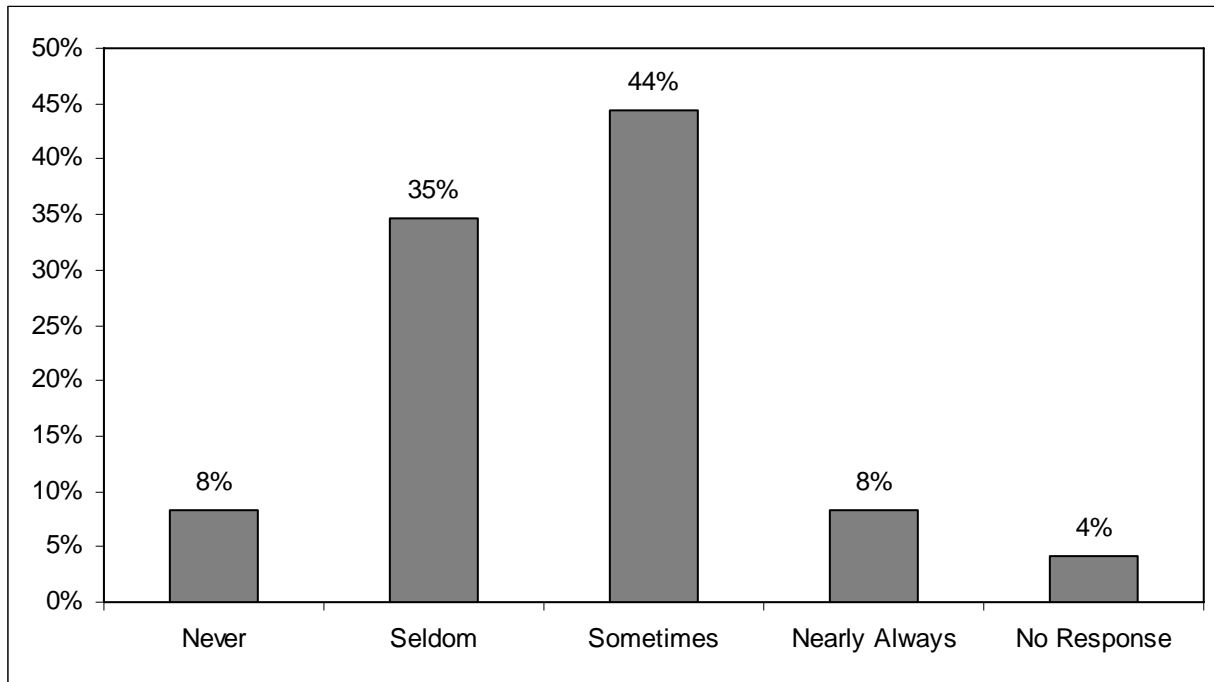


Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: “*Pre-authorization requirements delay access to further evaluation.*”

- Three-fourths of survey respondents indicated that pre-authorization requirements delaying access to further evaluation sometimes (35%) or seldom (40%) pose a challenge/barrier to follow-up.
- Seven percent indicated that this factor always (1%) or nearly always (6%) poses a challenge/barrier to follow-up.
- Just over one-tenth of survey respondents (11%) indicated that this factor never poses a challenge/barrier to follow-up.
- Seven percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 4-3. Lack of Transportation to Audiologist



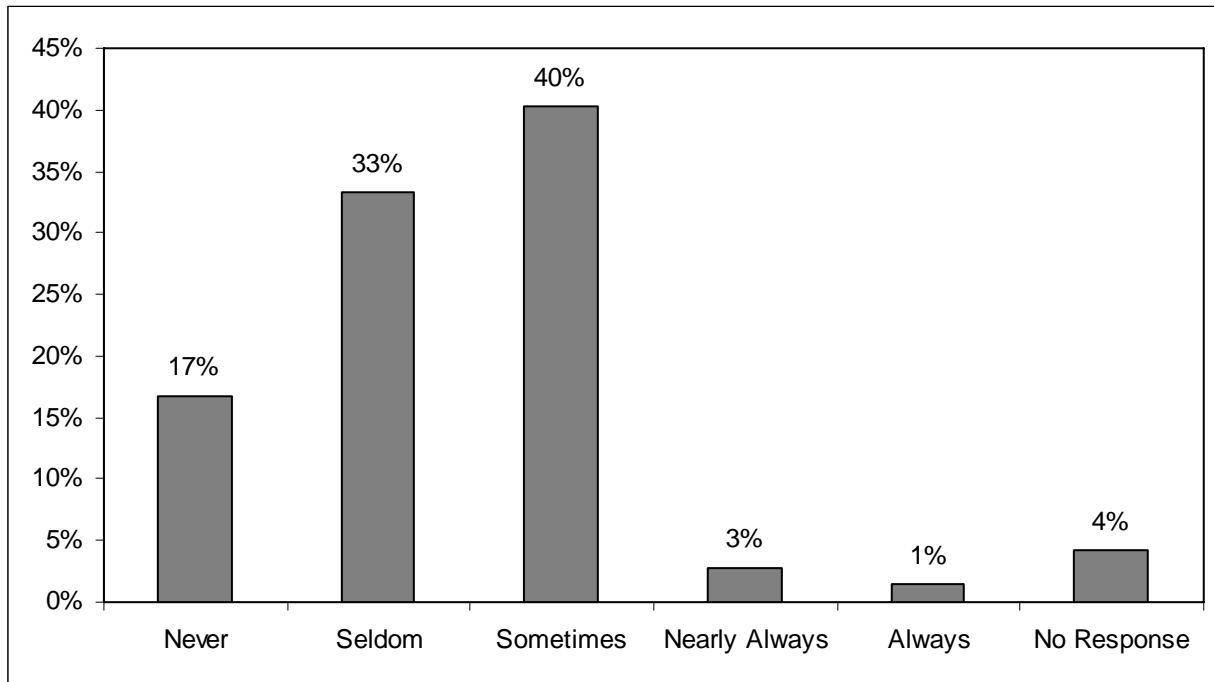
* Total percent does not add up to 100 due to rounding.

Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: *“Lack of transportation to audiologist.”*

- More than three-fourths of survey respondents indicated that *“Lack of transportation to audiologist”* sometimes (44%) or seldom (35%) poses a challenge/barrier to follow-up.
- Eight percent of survey respondents indicated that this factor nearly always poses a challenge/barrier to follow-up, while another 8 percent indicated that this factor never poses a challenge/barrier to follow-up.
- None of the respondents indicated that this factor always poses a challenge/barrier to follow-up.
- Four percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 4-4. Lack of Health Insurance



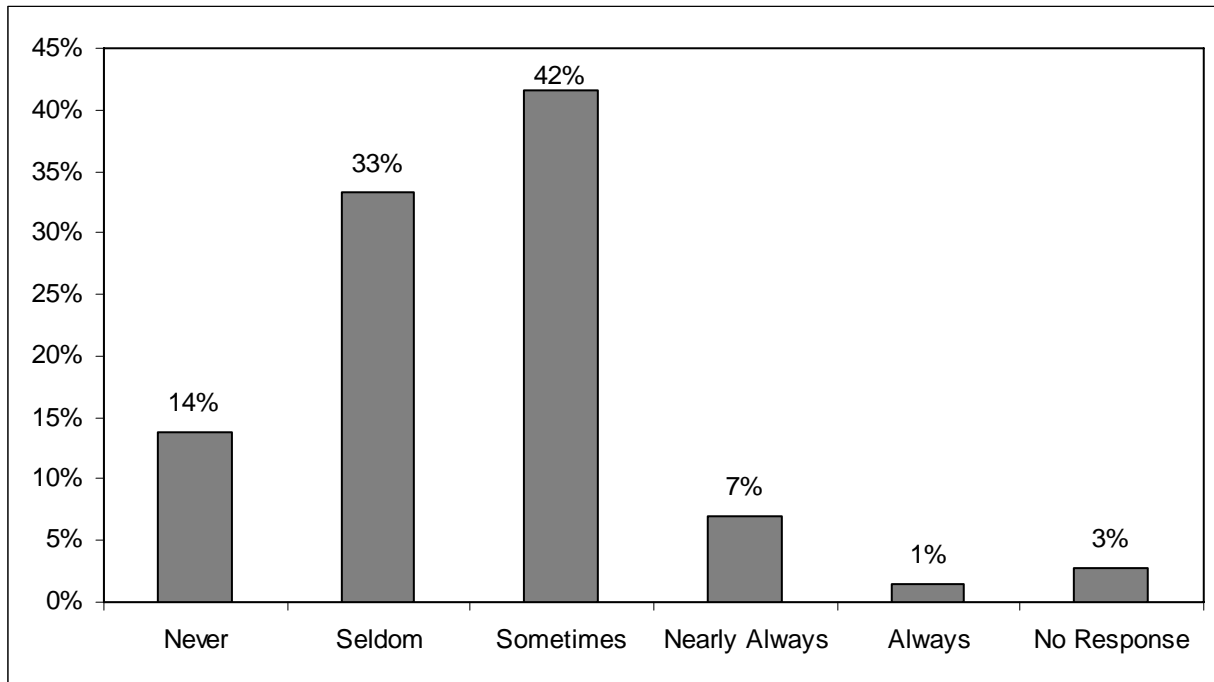
* Total percent does not add up to 100 due to rounding.

Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: *“Lack of health insurance.”*

- Nearly three-fourths of survey respondents indicated that *“Lack of health insurance”* sometimes (40%) or seldom (33%) poses a challenge/barrier to follow-up.
- Four percent of survey respondents indicated that *“Lack of health insurance”* always (1%) or nearly always (3%) poses a challenge/barrier to follow-up.
- Seventeen percent of survey respondents indicated that this factor never poses a challenge/barrier to follow-up.
- One respondent (1%) chose two responses: “never” and “seldom.”
- Four percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 4-5. Language Barriers

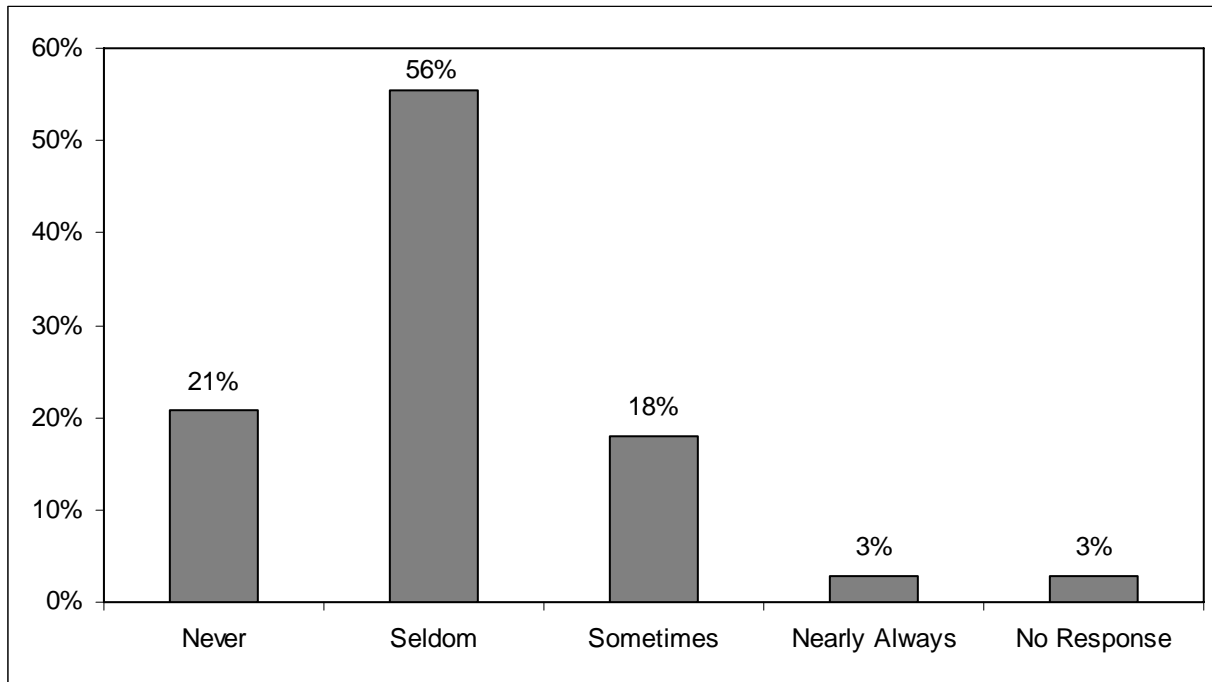


Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: “*Language spoken by families prevents linkage to services.*”

- Three-fourths of respondents indicated that language spoken by families sometimes (42%) or seldom (33%) prevents linkage to services.
- Eight percent of those surveyed indicated that language spoken by families always (1%) or nearly always (7%) prevents linkage to services.
- Over one-tenth of survey respondents (14%) indicated that language spoken by families never prevents linkage to services.
- Three percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 4-6. Privacy Laws Impede Data Sharing



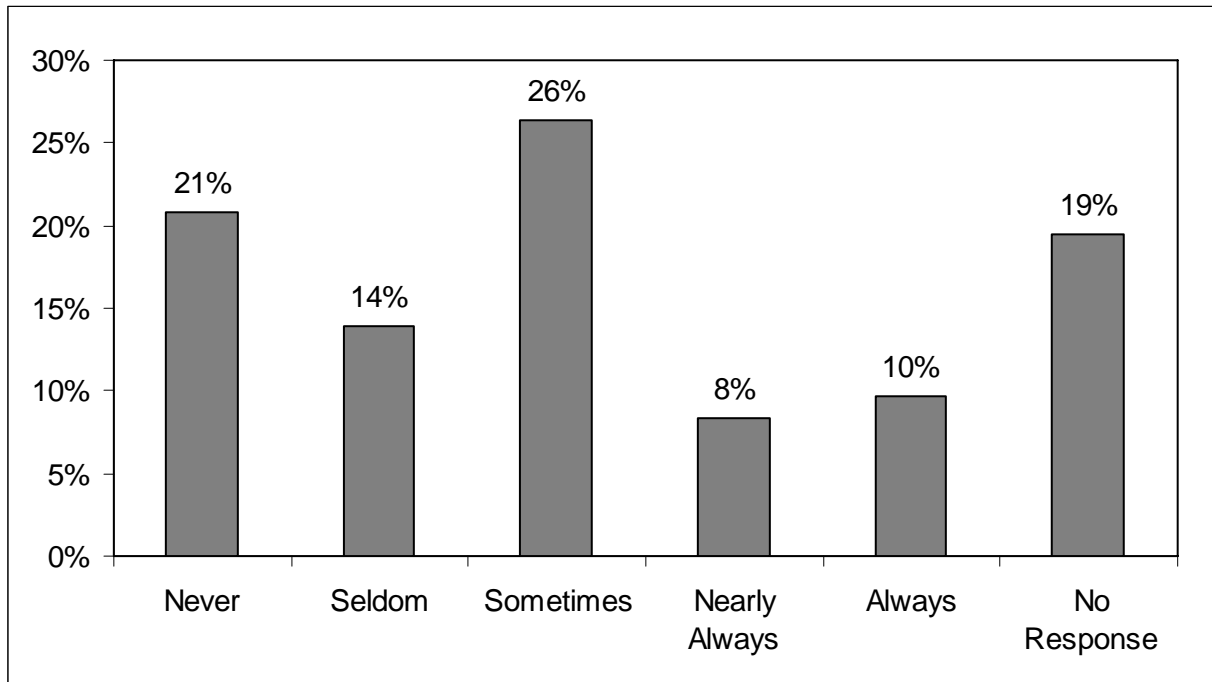
* Total percent does not equal 100 due to rounding.

Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: *“Privacy laws impede sharing between providers/across agencies.”*

- About three-fourths of survey respondents indicated that privacy laws sometimes (18%) or seldom (56%) impede sharing between providers/across agencies, thus, pose a challenge/barrier to follow-up.
- Three percent indicated that this factor nearly always poses a challenge/barrier to follow-up.
- Twenty-one percent indicated that this factor never poses a challenge/barrier to follow-up.
- None of the respondents indicated that this factor always poses a challenge/barrier to follow-up.
- Three percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 4-7. VISITS Not Accessible to Audiologists



* Total percent does not add up to 100 due to rounding.

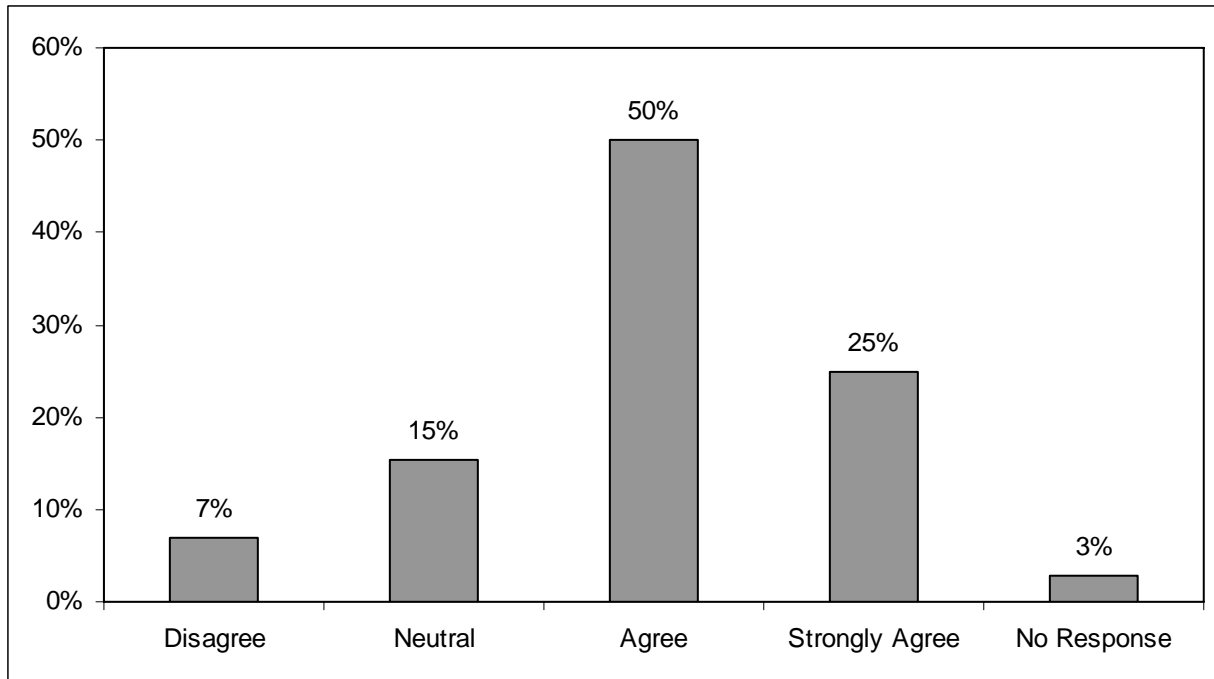
Respondents were asked to indicate how often the following factor posed a challenge/barrier to follow-up: *“The VEHDI Program’s reporting system (VISITS) is not accessible to audiologists.”*

- Just over one-fourth of survey respondents (26%) indicated that this factor sometimes poses a challenge/barrier to follow-up.
- Over one-third of respondents indicated that this factor seldom (14%) or never (21%) poses a challenge/barrier to follow-up.
- Just under one-fifth of survey respondents indicated that this factor nearly always (8%) or always (10%) poses a challenge/barrier to follow-up.
- Nineteen percent (n = 14) of those surveyed did not respond to this statement, while one respondent (1%) chose two responses: “sometimes” and “seldom.”

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

V. Early Intervention Services

Figure 5-1. Enrollment in Early Intervention (EI) Services

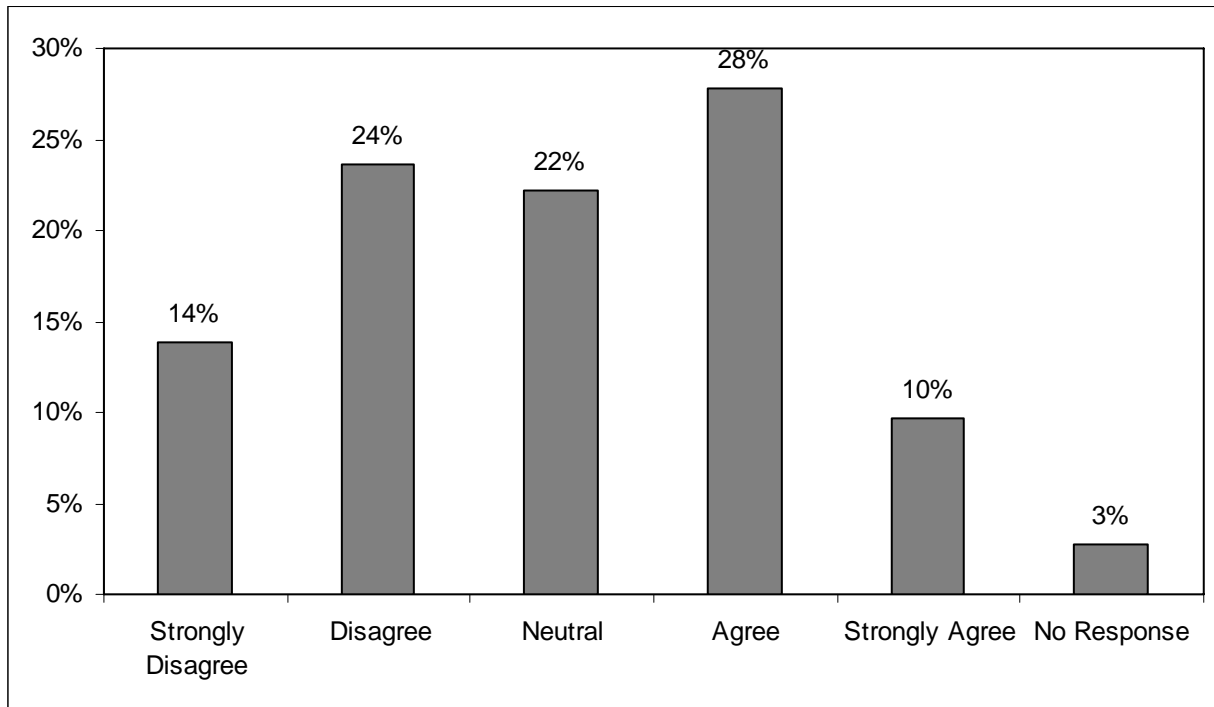


Respondents indicated their agreement with a statement regarding enrollment in EI services.

- Three-fourths of those surveyed strongly agreed (25%) or agreed (50%) with the statement “*Children with hearing loss develop normally in their language and social skills when they are enrolled in Early Intervention services before 6 months of age.*”
- Seven percent of respondents disagreed with this statement, while none of the respondents strongly disagreed with this statement.
- Fifteen percent indicated that they were neutral about this statement.
- Three percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 5-2. Referring Patients to Local Early Intervention (EI) Services



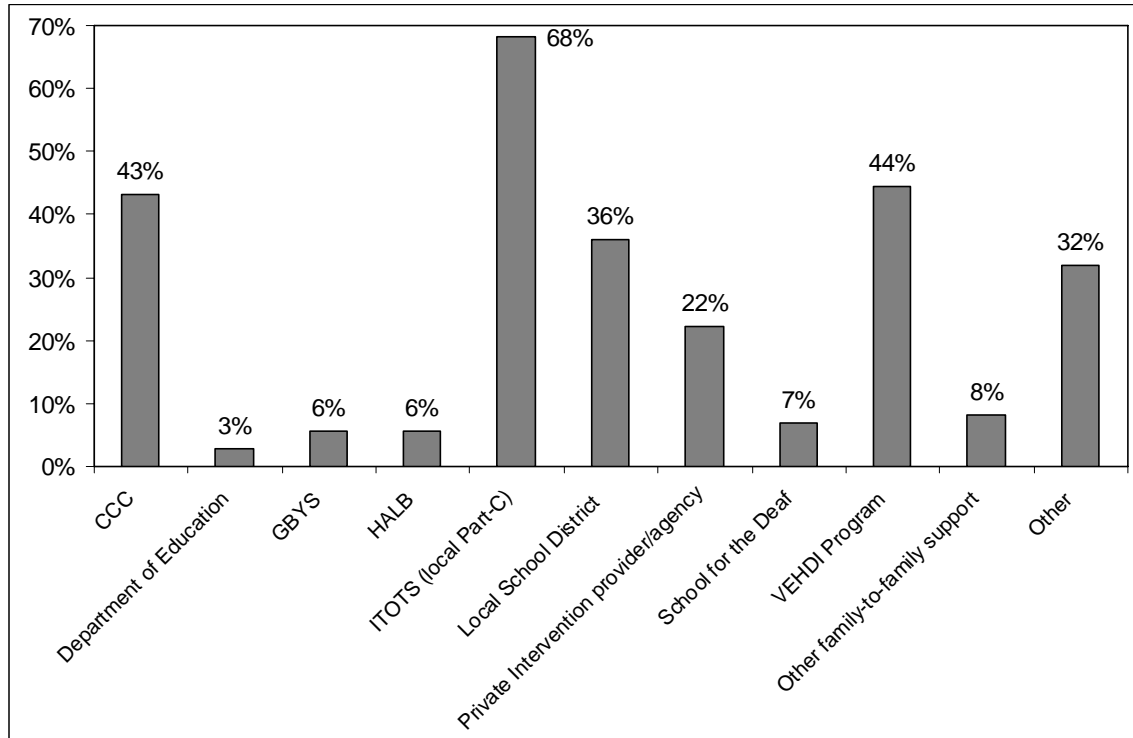
* Total percent does not equal 100 due to rounding.

Respondents indicated their agreement with a statement regarding referring patients to local EI services.

- Over one-third of survey respondents strongly agreed (10%) or agreed (28%) with the statement *“I need more information about how to refer patients to local Early Intervention services.”*
- Over one-third of survey respondents strongly disagreed (14%) or disagreed (24%) with this statement.
- Twenty-two percent of those surveyed indicated that they were neutral about this statement.
- Three percent of those surveyed did not respond to this statement.

**Findings from the Virginia Survey on Audiology Services:
Diagnostic Audiology Services for Children Birth to 36 Months**

Figure 5-3. Protocol for Referring Infants for Early Intervention Services

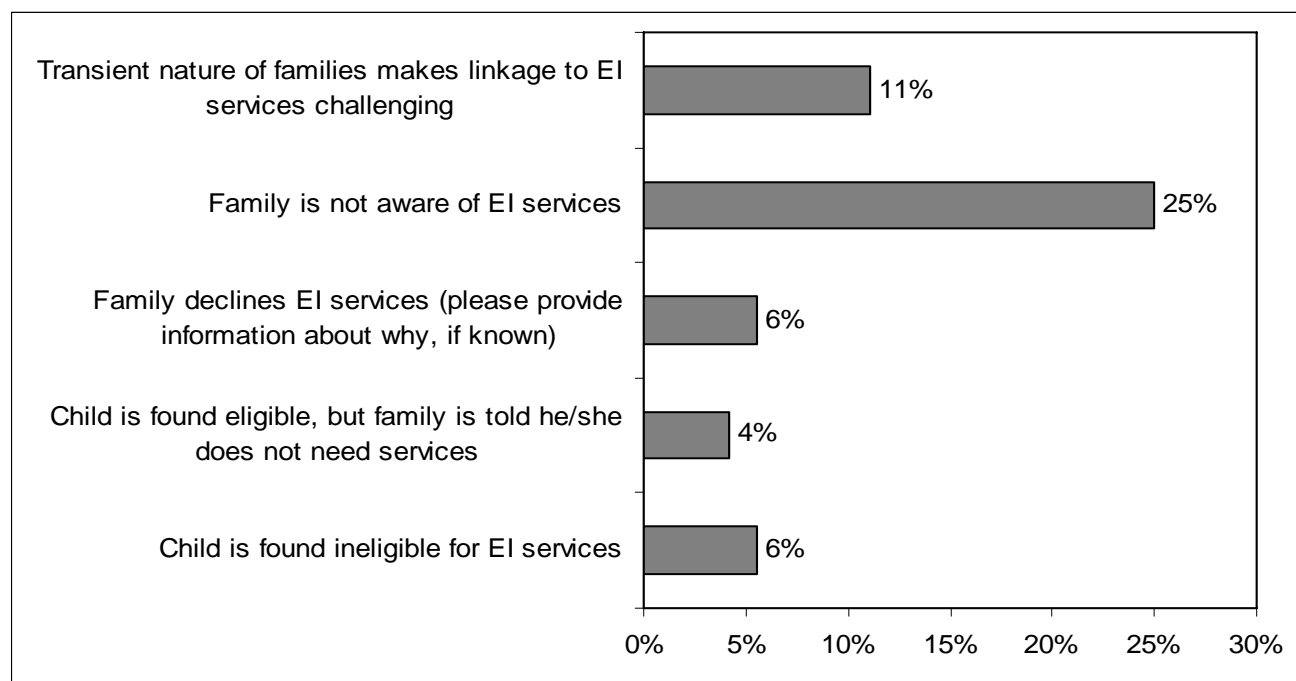


Respondents were asked to indicate where their facility refers children who have been diagnosed with hearing loss so that they receive early intervention services (EI and other intervention services).

- More than two-thirds of survey respondents (68%) indicated that they refer children to Infant & Toddler Connection of Virginia (ITOTS—local Part C system).
- Over three-fourths of survey respondents indicated that they refer children to the VEHD Program (44%) and/or Care Connection for Children (CCC) (43%).
- More than one-half of respondents indicated that they refer children to the local school district (36%) and/or a private intervention provider/agency (22%).
- Fourteen percent of those surveyed indicated that they refer children to Guide By Your Side (GBYS) (6%) and/or other family-to-family support (8%).
- One-tenth of those surveyed indicated that they refer children to the School for the Deaf (7%) and/or the Department of Education (3%).
- Six percent of those surveyed indicated that they refer children to the Virginia Hearing Aid Loan Bank (HALB).
- Just under one-third of survey respondents (32%) indicated that they refer children to providers/agencies other than those listed. The written responses included the University of Virginia; a geneticist; an ear, nose and throat specialist; and an ophthalmologist.

Findings from the Virginia Survey on Audiology Services: Diagnostic Audiology Services for Children Birth to 36 Months

Figure 5-4. Barriers to Receiving Early Intervention (EI) Services



Respondents were asked to indicate the most common barrier preventing patients from receiving Early Intervention (EI) services.

- One-fourth of survey respondents (25%) indicated that the most common barrier preventing infants from receiving EI services is the “*Family is not aware of EI services.*”
- Just over one-tenth of respondents (11%) indicated that the “*Transient nature of families makes linkage to EI services challenging.*”
- Just under one-tenth of respondents (6%) indicated that the most common barrier is “*Family declines EI Services.*” Reasons given were “Inconvenient for working parents” and “does not understand what EI provides.”
- Four percent of those surveyed indicated that the most common barrier is that the “*Child is found eligible, but family is told he/she does not need services.*”
- Six percent of survey respondents indicated that “*Child is found ineligible for EI services*” is the most common barrier.
- Fifteen percent (n = 11) of those surveyed selected more than one factor as the common barrier; most of these respondents (n = 8) chose “*Child is found ineligible for EI services*” in addition to another factor.
- Fourteen percent of those surveyed selected “Other” for this question. The comments included “Parent denies loss,” “Varies from family to family so it is hard to say what the common barrier is,” and “Poor follow-up of all involved parties: family, early intervention, school districts, and hearing service providers.”
- Nineteen percent (n = 14) of those surveyed did not respond to this question.

Findings from the Virginia Survey on Audiology Services: Diagnostic Audiology Services for Children Birth to 36 Months

Discussion

The most important findings from the Virginia Survey on Diagnostic Audiology Services for Children Birth to 36 Months are highlighted below.

Efforts to promote the Virginia Early Hearing Detection and Intervention (VEHDI) Program, its goals, protocols and recommendations, and available resources for parents should be improved. One would expect that almost all of the survey respondents knew the VEHDI Program's goals and read the VEHDI Program's protocols for audiologists. Although most of the respondents (85%) knew the 1-3-6 Goals, one-tenth of respondents (10%) reported that they did not know the 1-3-6 Goals. The majority of the respondents (88%) read the VEHDI Program's protocols for audiologists but 8 percent did not.

Additionally, one-fifth of survey respondents (21%) did not have the "Virginia's Resource Guide for Parents" available at their practice. This guide was created for parents of children diagnosed with hearing loss. One-third of the respondents (33% (n = 5)) were from facilities on the VEHDI Program's list of approved diagnostic facilities.

A current goal of the VEHDI Program is to increase the number of facilities on the list of approved diagnostic sites. Currently, there are 52 facilities on this list. Respondents were asked to indicate which equipment they had at their facility. Three facilities that are not on this list have the required equipment to be approved as a diagnostic site. Additionally, some areas across Virginia lack an approved diagnostic site. The survey implies that one factor contributing to loss or delay to follow-up is that the "family must travel an inconvenient distance." Respondents reported that this factor sometimes (50%) or nearly always (10%) poses a challenge to follow-up.

There are implications that training on some of the screening/diagnostic equipment is needed. One or more respondents would like to receive training on the following equipment: Auditory Brainstem Response Air Conduction (1 (1%)), Auditory Brainstem Response Bone Conduction (3 (4%)), Auditory Steady-State Response Audiometry (6 (8%)), Conditioned-Orienting Response Audiometry (1 (1%)), and Transient Evoked Otoacoustic Emission (1 (1%)). An encouraging number of those surveyed are willing to provide colleagues training on this equipment: 9 (13%), 9 (13%), 5 (7%), 6 (8%), 8 (11%), respectively.

Most of the survey respondents (86%) reported that the VEHDI Program is a part of their reporting protocol. One respondent indicated that they do not report to the VEHDI Program because they refer these children for further testing to confirm the diagnosis. Unfortunately, they did not specify the location to which they refer these children. The concern is that this same facility reported that "in the last three months" they diagnosed one to two children with hearing loss. This suggests that there is a need to emphasize the state regulations on and the importance of reporting screening and diagnostic evaluation results to the VEHDI Program, regardless of whether or not the child is referred for further testing.

The Virginia Infant Screening and Infant Tracking System (VISITS) is the Web-based reporting system used by hospitals to report results of hearing screenings. Currently, the VEHDI Program is making enhancements to the system to better accommodate the data entry by hospital

Findings from the Virginia Survey on Audiology Services: Diagnostic Audiology Services for Children Birth to 36 Months

personnel and to improve the tracking and surveillance capabilities of the VEHDI Program in order to ensure that children who reside in Virginia receive required services in a timely manner. Access to VISITS by audiologists is currently being reviewed and considered. There are indications that audiologists would like to have access to VISITS and report evaluation results electronically. Even though two-thirds of survey respondents (68%) have never heard of VISITS, almost all of the survey respondents thought it would be very helpful (61%) or somewhat helpful (32%) to have access to VISITS and report results electronically. Furthermore, a little over 60 percent would prefer to report evaluation results via VISITS versus the current paper format (22% preferred this method).

One important finding to point out is that respondents indicated that a challenge or barrier to follow-up is the fact that VISITS is inaccessible to audiologists. Respondents reported that this factor sometimes (26%), nearly always (8%), or always (10%) poses a challenge or barrier to follow-up. This finding suggests that audiologists having access to VISITS may address one of the major factors contributing to the loss or delay to follow-up screenings or diagnostic evaluations.

Findings from the Virginia Survey on Diagnostic Audiology Services for Children Birth to 36 Months have implications for the enhancement of the VEHDI Program and its available resources for parents, audiologists, and health care providers. Only 71 percent of respondents strongly agreed or agreed that the VEHDI Program provides their facility with helpful information to give to parents of children with hearing loss. Suggestions and requests were made and concerns were brought to the VEHDI Program's attention in the "Comments" section of this survey. The VEHDI Program will address respondents' suggestions, requests and concerns, and the survey's findings and implications where feasible.

Recommendations

- Work in partnership with EHDI stakeholders to propose possible methods to promote the identity and purpose of EHDI and the VEHDI Program to audiologists. Education of audiologists on reporting protocols should be included in the proposed method.
- Improve and promote available resources for parents and design a method to ensure that these resources are readily available at all facilities.
- Develop, implement and evaluate a plan to decrease the shortage of "approved" and "screen-only" sites.
- Develop and implement a training plan to meet the needs of those who reported that they would like to receive training on screening/diagnostic equipment. Collaboration with audiologists who reported that they are willing to train their colleagues is warranted.
- Continue to explore the feasibility of audiologists having access to VISITS and begin to develop a proposed reporting module for audiologists.

**APPENDIX A:
COVER LETTER**



COMMONWEALTH of VIRGINIA

Department of Health
P O BOX 2448
RICHMOND, VA 23218

Karen Remley, MD, MBA, FAAP
State Health Commissioner

TTY 7-1-1 OR
1-800-828-1120

Dear Audiologist,

The Virginia Early Hearing Detection and Intervention (VEHDI) Program is conducting a survey to evaluate the knowledge and opinions of audiologists regarding the VEHDI Program and EHDI services in Virginia.

The purpose of this survey is to assess audiological facilities' capacity to provide services to children age birth to 3 years, specifically the tools (i.e. equipment) used for diagnostic evaluations. We would also like to assess the current training needs for audiologists in regard to using equipment and referring children for early intervention services, so that we might tailor future training sessions to these needs. Responses to this survey will provide critical information as we work towards establishing a comprehensive system for reducing loss or delay to hearing evaluation follow-up.

Your response is important to us. All responses will be kept private and will only be reported in summaries with no names or other information that would identify your facility. For the facilities that have more than one location, we ask that one licensed audiologist who primarily works at each location be designated to complete this survey. If your facility only has one audiologist that splits his/her time between all of your locations, please have that audiologist complete a survey for each location.

Please complete and return the enclosed survey using the postage-paid envelope or complete online by going to: <http://vahealth.audiologistsurvey.sgizmo.com> by May 9, 2008.

Please feel free to contact me with questions or feedback regarding this survey, at 1-804-864-7716, or email michelle.ballard@vdh.virginia.gov.

Thank you in advance for your participation in this survey. Your individual input is needed and greatly appreciated.

Sincerely,

Michelle B. Ballard

Michelle B. Ballard, MPH
Surveillance and Evaluation Coordinator
Virginia Early Hearing Detection and Intervention Program

**APPENDIX B:
SURVEY INSTRUMENT**

SECTION III. Diagnostic Audiology Services for Children Birth to 36 Months of Age.

4. Please indicate the equipment you use in the assessment of hearing in children birth to 3 years of age by completing the following table. Check all that apply.

Equipment	I have this equipment in my facility.	I use this equipment in my facility.	I would like to receive additional training on using this equipment.	I am willing to provide colleagues training on using this equipment.
Auditory Brainstem Response Air Conduction (AC)				
Auditory Brainstem Response Bone Conduction (BC)				
Auditory Steady-State Response (ASSR) Audiometry				
Behavioral Observation Audiometry				
Conditioned Play Audiometry				
Conditioned-Orienting Response Audiometry				
Distortion Product Otoacoustic Emission (OAE)				
Reflexes				
Standard Audiometry				
Transient Evoked Otoacoustic Emission (OAE)				
Tympanometry				
Visual Reinforcement Audiometry				
Other, please specify:				

5. Please indicate the degree to which you agree with the following statement:

My facility has adequately trained personnel to diagnose hearing loss in children between birth and 3 years of age.

Strongly Agree Agree Neutral Disagree Strongly Disagree

6. In the last three months, approximately how many children between birth and 3 years of age have been diagnosed with a hearing loss by your facility?

- | | |
|-------------------------------|---------------------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> 7-10 |
| <input type="checkbox"/> 1-2 | <input type="checkbox"/> More than 10 |
| <input type="checkbox"/> 3-6 | <input type="checkbox"/> Not sure |

SECTION IV: Protocol for Reporting Confirmation of Hearing Loss

7. Identify your facility’s reporting protocol following confirmation of hearing loss. Check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Report to local department of education | <input type="checkbox"/> Report to primary care physician |
| <input type="checkbox"/> Report to local health department | <input type="checkbox"/> Report to state department of education |
| <input type="checkbox"/> Report to local Infant and Toddler Connection (Part C) agency | <input type="checkbox"/> Report to VEHDI Program |
| <input type="checkbox"/> Report to parent | <input type="checkbox"/> Other, please specify: _____ |

8. If you report to the VEHDI Program, indicate how you feel about the following statements: *(If you do not report to the VEHDI Program, please go to question #9.)*

	5	4	3	2	1
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
It is easy to report hearing loss to the VEHDI Program	5	4	3	2	1
Reporting test results to the VEHDI Program poses a burden on my time	5	4	3	2	1
I am able to report results of audiologic evaluations in a timely fashion (within 2 weeks of screening)	5	4	3	2	1
The data that I provide to the VEHDI Program are of high quality	5	4	3	2	1
The VEHDI Program is able to keep the data I provide private and confidential	5	4	3	2	1
I see the value in reporting to the VEHDI Program	5	4	3	2	1
The VEHDI Program provides my facility with helpful information to give to parents of children with hearing loss	5	4	3	2	1

9. If you don’t report to the VEHDI Program, please explain why: _____

10. The Virginia Infant Screening and Infant Tracking System (VISITS) is a web-based reporting system currently used by hospitals to report results of hearing screenings.

10a. Have you heard of VISITS?

Yes No

10b. How helpful would it be to have access to VISITS and report evaluation results electronically?

Very helpful Somewhat helpful Not at all helpful

10c. If given the option, would you prefer to report evaluation results via VISITS or the current reporting format?

VISITS Current reporting format

SECTION V: Major Challenges and Barriers to Follow-up

The VEHDI Program would like your help in evaluating factors contributing to loss or delay to follow-up. Please check the response that best represents your opinion and/or experiences.

11. How often does each of the following pose a challenge/barrier to follow-up?

	5	4	3	2	1
	Always	Nearly always	Sometimes	Seldom	Never
Family must travel an inconvenient distance	5	4	3	2	1
Pre-authorization requirements delay access to further evaluation	5	4	3	2	1
Lack of transportation to audiologist	5	4	3	2	1
Lack of health insurance impedes access to a primary care provider (PCP) and an audiologist	5	4	3	2	1
Language spoken by families prevents linkage to services	5	4	3	2	1
Privacy laws impede sharing between providers/across agencies	5	4	3	2	1
The VEHDI Program’s reporting system (VISITS) is not accessible to audiologists	5	4	3	2	1

SECTION VI: Early Intervention Services

12. Please indicate the degree to which you agree with the following statements:

5	4	3	2	1
Strongly	Agree	Neutral	Disagree	Strongly
Agree				Disagree

12a. Children with hearing loss develop normally in their language and social skills when they are enrolled in Early Intervention services before 6 months of age.

5	4	3	2	1
---	---	---	---	---

12b. I need more information about how to refer patients to local Early Intervention services.

5	4	3	2	1
---	---	---	---	---

13. Where does your facility refer children who have been diagnosed with hearing loss so that they receive early intervention services? Check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Care Connection for Children | <input type="checkbox"/> Private Intervention provider or agency |
| <input type="checkbox"/> Department of Education | <input type="checkbox"/> School for the Deaf |
| <input type="checkbox"/> Guide By Your Side | <input type="checkbox"/> VEHDI Program |
| <input type="checkbox"/> Hearing Aid Loan Bank | <input type="checkbox"/> Other family-to-family support program |
| <input type="checkbox"/> Infant & Toddler Connection of Virginia | <input type="checkbox"/> Other, please specify: _____ |
| (local Part C system) | _____ |
| <input type="checkbox"/> Local school district | _____ |

14. What is the most common barrier preventing your patients from receiving Early Intervention (EI) services? Please check one response.

- Child is found ineligible for EI services
- Child is found eligible, but family is told he/she does not need services
- Family declines EI services (please provide information about why, if known: _____)
- Family is not aware of EI services
- Transient nature of families makes linkage to EI services challenging
- Other, please explain: _____

15. Please add any additional comments you would like to share with the VEHDI Program:

Thank you for taking the time to fill out this very important survey. Please return the questionnaire in the postage-paid envelope provided to Michelle Ballard, VEHDI Program Surveillance and Evaluation Coordinator, or online at <http://vahealth.audiologistsurvey.sgizmo.com> by May 9, 2008. If you have questions, you may call Michelle at (804) 864-7716.

APPENDIX C: SURVEY DATA

Knowledge of the Virginia Early Hearing Detection and Intervention (VEHDI) Program

Q2: How Familiar are you with the VEHDI Program?

2A: I know the 1-3-6 Goals.

Response	Frequency	Percent
No	7	9.7%
Yes	61	84.7%
No Response	4	5.6%
Total	72	100.0%

2B: I have read the VEHDI Protocols for Audiologists.

Response	Frequency	Percent
No	6	8.3%
Yes	63	87.5%
No Response	3	4.2%
Total	72	100.0%

2C: Virginia's Resource Guide for Parents is available at my practice.

Response	Frequency	Percent
No	15	20.8%
Yes	55	76.4%
No Response	2	2.8%
Total	72	100.0%

Q3: VEHDI Program's list of Approved Diagnostic Facilities?

3A: My Facility is on this list:

Response	Frequency	Percent
No	23	31.9%
Yes	42	58.3%
Not Sure	7	9.7%
No Response	0	0.0%
Total	72	100.0%

Continued on next page...

3B: If No, why not?

Response	Frequency	Percent
I am not aware of this list	0	0.0%
I do not have the recommended equipment	20	87.0%
Other	3	13.0%
Total	23	100.0%

Other:

1. We've completed and submitted it though.
2. We were denied because EEG techs were doing some of the procedures.
3. Because audiologists do not perform all of the procedures. EEG techs have been performing procedures. Now all bone conduction, frequency specific and threshold ABRs are being administered only by audiologists.

3C: Would you like to receive more information about the criteria for being placed on this list?**Of those that said No to Q3A: n = 23**

Response	Frequency	Percent
No	18	78.3%
Yes	3	13.0%
No Response	2	8.7%
Total	23	100.0%

Diagnostic Audiology Services for Children Birth to 36 Months of Age

Q4: Please Indicate the equipment you use in the assessment of hearing in children birth to 3 years of age by completing the following table.

Equipment	I have this equipment in my facility.	I use this equipment in my facility.	I would like to receive additional training on using this equipment.	I am willing to provide colleagues training on using this equipment.
Auditory Brainstem Response Air Conduction (ABR AC)	41 (57%)	35 (49%)	1 (1%)	9 (13%)
Auditory Brainstem Response Bone Conduction (ABR BC)	34 (47%)	27 (38%)	3 (4%)	9 (13%)
Auditory Steady-State Response (ASSR) Audiometry	13 (18%)	9 (13%)	6 (8%)	5 (7%)
Behavioral Observation Audiometry (BOA)	56 (78%)	48 (67%)	0	12 (17%)
Conditioned Play Audiometry	55 (76%)	52 (72%)	0	12 (17%)
Conditioned-Orienting Response (COR) Audiometry	30 (41%)	25 (35%)	1 (1%)	6 (8%)
Distortion Product Otoacoustic Emission (DPOAE)	61 (85 %)	53 (74%)	0	12 (17%)
Reflexes	62 (86%)	52 (72%)	0	10 (14%)
Standard Audiometry	60 (83%)	54 (75%)	0	10 (14%)
Transient Evoked Otoacoustic Emission (TEOAE)	37 (51%)	32 (44%)	1 (1%)	8 (11%)
Tympanometry	65 (90%)	46 (64%)	0	13 (18%)
Visual Reinforcement Audiometry (VRA)	57 (79%)	52 (72%)	0	12 (17%)

Frequency (%)

Q5: My facility has adequately trained personnel to diagnose hearing loss in children between birth and 3 years of age.

Response	Frequency	Percent
Strongly Disagree	1	1.4%
Disagree	4	5.6%
Neutral	11	15.3%
Agree	12	16.7%
Strongly Agree	43	59.7%
No Response	1	1.4%
Total	72	100.0%

Q6: In the last three months, approximately how many children between birth and 3 years of age have been diagnosed with hearing loss by your facility?

Response	Frequency	Percent
None	34	47.2%
1-2	17	23.6%
3-6	8	11.1%
7-10	3	4.2%
More than 10	2	2.8%
Not Sure	6	8.3%
No Response	2	2.8%
Total	72	100.0%

Protocol for Reporting Confirmation of Hearing Loss

Q7: Identify your facility's reporting protocol following confirmation of hearing loss.

Response Item	Response	Frequency	Percent (out of Total Sample = 72)
Local Department of Education	No	59	81.9%
	Yes	10	13.9%
Local Health Department	No	63	87.5%
	Yes	6	8.3%
Local Infant and Toddler Connection (Part C) agency	No	35	48.6%
	Yes	34	47.2%
Parent	No	10	13.9%
	Yes	59	81.9%
PCP	No	11	15.3%
	Yes	58	80.6%
State Department of Education	No	69	95.8%
	Yes	0	0.0%
VEHDI Program	No	7	9.7%
	Yes	62	86.1%
Other	Free Text	19	26.4%
	None were checked	2	2.8%
	Not Applicable*	1	1.4%
Total		72	

[Results will not equal 100%; more than one response could be checked.]

*Facility put N/A; "because we don't have ABR, kids are referred out for ABR/HL confirmation."

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Appendix C—Survey Data

<u>Frequency</u>	<u>Comments - "Other"</u>
1	Audiologists refer to ENT & they make necessary referral.
1	Report to ENT.
1	County School Audiologist
1	Report to school if applicable.
1	Send to CHKD for further evaluation.
1	I am the local health department. Most children 0-3 are referrals from EI or VEHDI. If not we refer to PMD and other programs as appropriate.
2	We give contact info for Infant Toddler Program and health Department.
1	Geneticist, ...by your size and development skills
1	Specialists as necessary.
1	Refer to UVA for confirmation of HL.
1	Refer to audiologist for hearing aids, fm, etc. Refer to ENT.
1	Contact info given for Infant Toddler Program & Health Department.
1	Pediatrix
1	Referred to UVA; Pre-school child find.
1	ENT Physician.
1	As parents requests
1	Some above is age-dependent
1	We give contact info for Infant Toddler Program and health Department.
1	Respondent put N/A for this question. Not counted in the percentage above.
1	We are not a diagnostic facility. Not counted in percentage above.
20	Total

Q8: If you report to the VEHDI Program, indicate how you feel about the following statements: Results are based on respondents who checked VEHDI in Q7.

8A: It is easy to report hearing loss to the VEHDI Program.

Response	Frequency	Percent
Strongly Disagree	0	0.0%
Disagree	1	1.6%
Neutral	7	11.3%
Agree	28	45.2%
Strongly Agree	26	41.9%
No Response	0	0.0%
Total	62	100.0%

8B: Reporting test results to the VEHDI Program poses a burden on my time.

Response	Frequency	Percent
Strongly Disagree	15	24.2%
Disagree	24	38.7%
Neutral	10	16.1%
Agree	13	21.0%
Strongly Agree	0	0.0%
No Response	0	0.0%
Total	62	100.0%

8C: I am able to report results of audiologic evaluations in a timely fashion (within 2 weeks of screening).

Response	Frequency	Percent
Strongly Disagree	0	0.0%
Disagree	2	3.2%
Neutral	0	0.0%
Agree	29	46.8%
Strongly Agree	31	50.0%
No Response	0	0.0%
Total	62	100.0%

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8D: The data that I provide to the VEHDI Program are of high quality.

Response	Frequency	Percent
Strongly Disagree	0	0.0%
Disagree	1	1.6%
Neutral	2	3.2%
Agree	24	38.7%
Strongly Agree	35	56.5%
No Response	0	0.0%
Total	62	100.0%

8E: The VEHDI Program is able to keep the data I provide private and confidential.

Response	Frequency	Percent
Strongly Disagree	0	0.0%
Disagree	0	0.0%
Neutral	12	19.4%
Agree	22	35.5%
Strongly Agree	24	38.7%
No Response	4	6.5%
Total	62	100.0%

8F: I see the value in reporting to the VEHDI Program.

Response	Frequency	Percent
Strongly Disagree	0	0.0%
Disagree	0	0.0%
Neutral	0	0.0%
Agree	27	43.5%
Strongly Agree	35	56.5%
No Response	0	0.0%
Total	62	100.0%

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8G: The VEHDI Program provides my facility with helpful information to give to parents of children with hearing loss

Response	Frequency	Percent
Strongly Disagree	1	1.6%
Disagree	3	4.8%
Neutral	14	22.6%
Agree	29	46.8%
Strongly Agree	15	24.2%
No Response	0	0.0%
Total	62	100.0%

Q9: If you don't report to the VEHDI Program, please explain why: (Free Text)

Frequency	Comment
1	I report children who are already known to VEHDI. I rarely see children who have not had newborn hearing tests-unless they were born out of USA.
1	Because when hearing loss is indicated by our testing due to the child's age they usually need to be referred for further testing. Depending on the test results for VRA, a child may be suspected to have a hearing loss but actually test results for electrophysiological tests may be normal.
1	We do not have the equipment to test pediatrics and do not see children in this age range.
1	FCPS provides educational services to children 0-3 who have been referred following diagnosis of hearing loss. FCPS is not primarily a diagnostic facility. Children 0-3 are typically referred by ITC where they are first seen.
3	No Response
7	Total

Q10: The Virginia Infant Screening and Infant Tracking System (VISITS) is a web-based reporting system currently used by hospitals to report results of hearing screenings.

10A: Have you heard of VISITS?

Response	Frequency	Percent
No	49	68.1%
Yes	21	29.2%
No Response	2	2.8%
Total	72	100.0%

10B: How helpful would it be to have access to VISITS and report evaluation results electronically?

Response	Frequency	Percent
Very Helpful	44	61.1%
Somewhat helpful	23	31.9%
Not at all helpful	1	1.4%
No response	4	5.6%
Total	72	100.0%

10C: If given the option, would you prefer to report evaluation results via VISITS or the current reporting format?

Response	Frequency	Percent
VISITS	45	62.5%
Current Reporting format	16	22.2%
"Either"	3	4.2%
No Response	8	11.1%
Total	72	100.0%

Major Challenges and Barriers to Follow-up

Q11: How often does each of the following pose a challenge/barrier to follow-up?

11A: Family must travel an inconvenient distance.

Response	Frequency	Percent
Never	3	4.2%
Seldom	24	33.3%
Sometimes	36	50.0%
Nearly Always	7	9.7%
Always	0	0.0%
No Response	2	2.8%
Total	72	100.0%

11B: Pre-authorization requirements delay access to further evaluation.

Response Item	Frequency	Percent
Never	8	11.1%
Seldom	29	40.3%
Sometimes	25	34.7%
Nearly Always	4	5.6%
Always	1	1.4%
No Response	5	6.9%
Total	72	100.0%

11C: Lack of transportation to audiologist.

Response Item	Frequency	Percent
Never	6	8.3%
Seldom	25	34.7%
Sometimes	32	44.4%
Nearly Always	6	8.3%
Always	0	0.0%
No Response	3	4.2%
Total	72	100.0%

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11D: Lack of health insurance impedes access to a primary care provider (PCP) and an audiologist.

Response Item	Frequency	Percent
Never	12	16.7%
Seldom	24	33.3%
Sometimes	29	40.3%
Nearly Always	2	2.8%
Always	1	1.4%
No Response	3	4.2%
Respondent chose Never and Seldom	1	1.4%
Total	72	100.0%

11E: Language spoken by families prevents linkage to services.

Response Item	Frequency	Percent
Never	10	13.9%
Seldom	24	33.3%
Sometimes	30	41.7%
Nearly Always	5	6.9%
Always	1	1.4%
No Response	2	2.8%
Total	72	100.0%

11F: Privacy laws impede sharing between providers/across agencies.

Response Item	Frequency	Percent
Never	15	20.8%
Seldom	40	55.6%
Sometimes	13	18.1%
Nearly Always	2	2.8%
Always	0	0.0%
No Response	2	2.8%
Total	72	100.0%

11G: The VEHDI Program's reporting system (VISITS) is not accessible to audiologists.

Response Item	Frequency	Percent
Never	15	20.8%
Seldom	10	13.9%
Sometimes	19	26.4%
Nearly Always	6	8.3%
Always	7	9.7%
No Response	14	19.4%
Respondent chose Seldom and Sometimes	1	1.4%
Total	72	100.0%

Early Intervention Services

Q12: Please indicate the degree to which you agree with the following statements:

12A: Children with hearing loss develop normally in their language and social skills when they are enrolled in Early Intervention services before 6 months of age.

Response Item	Frequency	Percent
Strongly Disagree	0	0.0%
Disagree	5	6.9%
Neutral	11	15.3%
Agree	36	50.0%
Strongly Agree	18	25.0%
No Response	2	2.8%
Total	72	100.0%

12B: I need more information about how to refer patients to local Early Intervention services.

Response Item	Frequency	Percent
Strongly Disagree	10	13.9%
Disagree	17	23.6%
Neutral	16	22.2%
Agree	20	27.8%
Strongly Agree	7	9.7%
No Response	2	2.8%
Total	72	100.0%

Q13: Where does your facility refer children who have been diagnosed with hearing loss so that they receive early intervention services?

Response Item	Response	Frequency	Percent (out of Total Sample = 72)
Care Connection for Children	No	40	55.6%
	Yes	31	43.1%
Department of Education	No	69	95.8%
	Yes	2	2.8%
Guide By Your Side	No	67	93.1%
	Yes	4	5.6%
Hearing Aid Loan Bank	No	67	93.1%
	Yes	4	5.6%
Infant & Toddler Connection of VA (local Part C system)	No	22	30.6%
	Yes	49	68.1%
Local School District	No	45	62.5%
	Yes	26	36.1%
Private Intervention provider or agency	No	55	76.4%
	Yes	16	22.2%
School for the Deaf	No	66	91.7%
	Yes	5	6.9%
VEHDI Program	No	39	54.2%
	Yes	32	44.4%
Other family-to-family support program	No	65	90.3%
	Yes	6	8.3%
Other	Free Text	23	31.9%
	None were checked	1	1.4%
Total		72	

[Results will not equal 100%; more than one response could be checked.]

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Appendix C—Survey Data

Frequency	Comment - "Other"
1	Children's Hospital for further testing.
1	University
2	We always see to it that children with permanent hearing loss get aids some way.
1	Local support group for children with hearing loss - for parents.
1	Send to CHKD.
1	Geneticist
1	UVA.
1	ENT, Speech Pathology
2	Otologic evaluation; genetic evaluation; ophthalmologic evaluation.
1	Our main office, who then refers
1	UVA for confirmation, always.
1	We have not had anyone to report, I am aware of the following groups. CCC, HALB, Local schooled district, School for the Deaf, VEHDI Program.
1	Other than military Audiologist - referred - For we do not fit them with aids at this facility (family members only).
1	Refer to audiologist with pediatric specialty.
1	We are the LSD to which these children are referred.
1	UVA-cochlear implants
1	Respondent put N/A for this question.
1	ENTS or sometimes universities
1	We recommend that the parents contact their school district for early ED intervention
1	Pediatrician
1	James Madison University.
23	Total

Q14: What is the most common barrier preventing your patients from receiving Early Intervention (EI) services?

Response Item	Frequency	Percent
Child is found ineligible for EI services	4	5.6%
Child is found eligible, but family is told he/she does not need services	3	4.2%
Family declines EI services (please provide information about why, if known)*	4	5.6%
Family is not aware of EI services	18	25.0%
Transient nature of families makes linkage to EI services challenging	8	11.1%
Other, please explain	10	13.9%
Respondent chose more than one response**	11	15.3%
No Response	14	19.4%
Total	72	100.0%

Frequency	Comment - "Other"
1	Haven't had any of these patients.
1	Parent denies loss-more than once, child w/mild-mod loss or unilateral loss-but delayed speech and language.
1	Have had almost no referrals this past year.
1	Many issues can affect families - there are times when parents have other responsibilities prioritized & the time that transpires is longer than should be to get a child dx w/HL. I think we are doing the right thing but need to also be realistic in certain situations. If we set our goals high, which I feel we have, we will fall in the area of acceptance. We must not lose sight of how far we have come w/VEHDI.
1	Varies from family to family so it is hard to really say what most common barrier is.
1	I refer out to another audiologist.
1	Does not apply to our center.
1	Does not seem to be a problem for us unless language barrier is present or family is in denial stage.
1	typically already referred by diagnostic facility
1	Poor follow-up of all involved parties; family, early intervention, school districts, and hearing service providers.
10	Total

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***Family Declines EI Services (why, if known)**

<u>Frequency</u>	<u>Comment</u>
1	Inconvenient for working parents.
1	Does not understand what EI provides.
2	No response
4	Total

****Respondent checked more than one response:**

<u>Frequency</u>	<u>Response</u>
2	4 and 5.
1	1 and 5.
3	1 and 2.
1	1, 2 and 5.
1	1, 2, 3, and 5.
1	3, 4 and 5.
1	1 and 3.
1	1 and 4.
11	Total

Q15: Additional Comments

<p>Your Reports to us need to include the number of children with risk factors and those that have their 6 month follow-up. --This comment was left by two facilities.</p>
<p>We are a small office that primarily dispenses hearing aids. Recently we have seen more children coming to our door & appreciate any information and/or updates that are sent out by VDH re: children. Thank you.</p>
<p>I would love to have access to VISITS to record follow up on these kids, much more time effective! Or...need a place on current forms that is specific to 6 month f/u (at top for reason for repeat).</p>
<p>Child w/ear pits - tags and pass newborn are still getting notices to return every 6 months. I thought I was told this would change and we could see them as needed.</p>
<p>Question 6: If number should include birth to 3 first diagnosis of permanent HL, our number for a quarter is probably 3-4. If the number also includes conductive hearing loss diagnoses, the number is FAR greater. There has been a change in program coordination at *** and I am working very hard to get myself up to speed, as well as encourage the other audiologists to get themselves up to speed. Any basic, intermediate or advanced information is greatly appreciated. Any written literature we can hand to Virginia patients/families would be wonderful. Thanks for your help. And thanks for working hard to keep EHDI doing what is supposed to!! Yay!</p>
<p>Reporting is time-consuming. We have an assistant to help us with that. I am not familiar with VISITS so I do not know if reporting through that would be easier. We spend a lot of time trying to get the babies to sleep for their appointments. Sometimes it takes several visits to get results. Parents do not always share our concern about hearing. Early Intervention does not always provide the appropriate interventions. We have children with significant hearing loss that receive speech therapy once a month. We also have children with cochlear implants receiving speech therapy from special instructors. We have had parents told that the children do not need the hearing aids. Early Intervention needs a lot of work in our area.</p>

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<p>We (***) are working with *** as contract audiologists & are currently seeing patients there 4 days per week. We have all but taken over the follow-up diagnostic ABR exams & are trying to find a way back on the VEHDI list. We diagnose about 30% of the infants on the VEHDI database & that is very significant to us & to ***.</p>
<p>Most patients who we refer for early intervention are through the Infant/Toddler program. The contact info is taken off their website. It would be nicer to have printed brochures to give them.</p>
<p>In reference to Q12B: "need updated phone #'s for the different counties."</p>
<p>Question 5 Comments: "We are adequately trained on the equipment we have and we can certainly refer a child to another facility for further testing if indicated, but we don't have the necessary equipment to diagnose definitively a hearing loss in children <3yrs.</p>
<p>I would like to see changes in frequency of testing for children with ear tags/pits who have no other problems. It puts a burden on parents. Could it be every year instead?</p>
<p>We have screening equipment in our office. If an infant does not pass our exam, we refer out to an audiologist with strong pediatric experience.</p>
<p>1) Early intervention professional could use more training in working with hearing impaired children. 2) VEHDI reporting would be easier if audiologists could use either online reporting or handwritten forms. 3) Early intervention providers should provide documentation of service delivery to the child's audiologist.</p>
<p>For question 8E, respondent answered: "I don't know if that is true?"</p>
<p>1) (spell tympanometry correctly in this survey); 2) Interesting difference in follow-up from different hospitals, e.g. Pediatrix with the HCA system (they play an interesting and undefined, by VEDHI, follow-up role in this whole process.); 3) How often are delays occurring in diagnosis when a PCP or pediatrician does not encourage immediate follow-up after initial infant "fails"? Perhaps, more education from you all to them? 4) Delays in diagnosis also occur (this is not represented in the survey) when the partial or complete cause of the "fail" is outer or middle ear pathology. Even in our practice, it is sometimes difficult to have all our ENT physicians treat in an expeditious manner so that we can continue our diagnostic work. Again, education from a higher level?; 5) Note: all our offices are moving toward having ASSR and AABR available.; 6) Note: We find that many of our losses being recently diagnosed are not infants but older children with either unilateral or mild to moderate (perhaps progressive or originally missed) losses.; 7) Encourage your work in convincing standard insurances (who are licensed in insure in a state with EI) to assist more with hearing aid costs before the age of 3.</p>
<p>In reference to Q12B: "need updated phone #'s for the different counties."</p>
<p>I would prefer electronic submissions of reports over the paper version for HIPAA reasons. However paper submission we have a "trail" that submission was accomplished. Would be nice to have an electronic acknowledgement of submission which can then be placed in the child's chart so that we know this is done. That is only advantage of paper submission plus in interest of time and accuracy we try to have parents fill out top (demo) information.</p>
<p>VEHDI written forms are used at *** for all outpatient diagnostic procedures. Would prefer to utilize electronic access. Would like to see verification of electronic submission so the information is in the medical chart.</p>

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Our facility does not use ABR so therefore we are not an approved site. We are listed as an approved hearing screening site. I am not aware we are listed as such. I have never seen such a list. All the infants I have screen were referred to me by the pediatrician. I also feel information is not sent to us, since we are only a screening site. I feel it is important information related to VEHDIP be available to facilities that are approved screening site.

Currently this office is providing follow-up information to VDH and to Pediatrix (the hospital's medical group that oversees referral for diagnostic testing). This seems to be redundant information collecting. ENT offices are very busy, overbooked facilities. I would appreciate an effective manner to report results one time to one management and tracking office.

Some of the comments had information that would identify the facility making the comment, so *** was put in the place of the facility's name.

**APPENDIX D:
THANK YOU LETTER**

«FACNAME»

On behalf of the Virginia Early Hearing Detection and Intervention (VEHDI) Program, I want to **thank you** for taking the time to complete and return the survey on diagnostic audiology services for children birth to 36 months. The results of this survey will be very beneficial in the VEHDI Program’s efforts to establishing a comprehensive system for reducing loss or delay to hearing evaluation follow-up.

I would like to take this opportunity to remind you of the important documents that can be found on our website, www.vahealth.org/hearing. On our website, you will find a “Quick Link” titled “Information for Audiologists.” Here, you will find; Protocols for Diagnostic Audiological Assessment (currently being updated); the new Screening/Audiological Reporting Form, along with the new instructions on completing this form; and the Practitioner/Facility Registration Form, which you can submit to us if you wish to apply to be on our list of Approved Diagnostic Audiological Facilities. You will also find “Information for Parents of Children with Hearing Loss, Virginia’s Resource Guide for Parents,” in English and in Spanish. This guide answers some of the most commonly asked questions and includes information about hearing loss, amplification, communication options, early intervention services, and connecting with other resources.

Thank you so much for your participation!

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Early Hearing Detection and Intervention Program
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