

Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA): Overview and Summary of 1999–2004 DSHPSHWA Data

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Disclaimer: *The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.*

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Congenital hearing loss affects 2 to 3 babies per 1,000 live births. An estimated 15% of children and teenagers in the United States have a temporary or permanent hearing loss in one or both ears. Studies have shown that children who have hearing loss can have delays in speech, language, social skills, and academic achievement. This is why all babies need a hearing screening, which helps find children who might have hearing loss.

Background

Starting in the 1980s, the Directors of Speech and Hearing Program in State Health and Welfare Agencies (DSHPSHWA) became involved with supporting newborn hearing screening efforts and sought to establish standards for the collection of national data. To help accomplish this, DSHPSHWA convened a task force in 1995 with representatives from the Joint Committee on Infant Hearing (JCIH), the National Consortium on Universal Infant Hearing Screening, state health agency speech and hearing directors, and representatives from companies involved in data and tracking programs for infant hearing screening. This task force sought to:

- Develop a standardized, national data set that could be collected by states and individual hospitals
- Establish an accessible collection site for data input and inquiry
- Work toward adopting a basic data set for all stakeholders

In addition to convening this task force, DSHPSHWA released position statements in 1994 and 1996 supporting universal newborn hearing screening (UNHS). Today, DSHPSHWA is active in national maternal and child health issues and includes members from nearly every state.

DSHPSHWA and Centers for Disease Control and Prevention Early Hearing Detection and Intervention Collaboration

The Centers for Disease Control and Prevention (CDC) Early Hearing Detection and Intervention (EHDI) Team actively supports the early identification of infants and children with hearing loss. As part of this support, CDC EHDI collaborated with DSHPSHWA on various EHDI-related activities:

- Beginning in 1997, CDC EHDI worked with DSHPSHWA to develop a list of EHDI data items. This list of data items was used by DSHPSHWA to develop a survey that was sent annually to representatives in state and territory EHDI programs. DSHPSHWA used this survey to collect data for the years 1999–2004.
- At the request of DSHPSHWA, CDC EHDI assisted in the analysis of data collected from states and territories through their annual survey. Summaries of annual DSHPSHWA data were made available on the CDC EHDI website.
- Data collected by DSHPSHWA were used to develop several presentations for national conferences. In addition, an article about the status of newborn hearing screening efforts was published in the October 17, 2003, issue of CDC's *Morbidity and Mortality Weekly Report* (www.cdc.gov/mmwr/preview/mmwrhtml/mm5241a1.htm). Data for the years 1999–2001 were included in this article.

Purpose

The purpose of this report is to summarize data related to hearing screening, diagnostic evaluations, and enrollment in early intervention services from the annual DSHPSHWA survey for the period 1999–2004. This summary report also describes limitations with the 1999–2004 surveys, such as partial data reporting and variations in data definitions. The report highlights progress toward the first three national CDC EHDI goals which relate to infant hearing screening, diagnostics, and intervention.

Survey Design and Methods

DSHPSHWA requested data from 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands annually for years 1999–2004 (pages 5-9). Each fall, an email was sent with the survey as an attachment to state and territory EHDI programs asking for EHDI data from the previous year (e.g., the request for year 2000 data was sent in fall 2001). A “survey explanations” document also was attached to these email requests (pages 10–16). Follow-up telephone calls asking the state and territory EHDI programs to complete the survey were made to help increase the response rate. For a complete list of surveys and the corresponding survey explanation documents, please visit: www.cdc.gov/ncbddd/ehdi.

The DSHPSHWA survey was created to gather aggregate data that could be used to generate national level estimates for infant hearing screening, diagnosis, and enrollment in early intervention services. The state and territory data reported on the DSHPSHWA survey often were estimated and incomplete (the incomplete data are shown highlighted in gray in the summary tables). Please note that no error analyses were performed and data should not be interpreted as being accurate in their entirety. The following characteristics describe the structure of the DSHPSHWA survey:

- The survey was paper based.
- States and territories reported data for years 1999–2004 on a voluntary basis.
- The DSHPSHWA classifications for degree of hearing loss were used for reporting severity of hearing losses: mild (21–40 decibels hearing level [dBHL]), moderate (41–40 dBHL), severe (71–90 dBHL), and profound (91+ dBHL).
- The survey included information about legislation related to newborn hearing screening and how many hospitals in the state or territory were UNHS facilities.
- Beginning with the 2000 DSHPSHWA survey, respondents were asked if the data reported for each item was either actual or estimated data.
- The survey included the number of newborns who were screened for hearing loss before hospital discharge and those screened after discharge, but before 1 month of age.
- The survey included the number of infants who were referred for a diagnostic audiological evaluation.
- The survey did not include any error checks.
- Data for each year were entered into a Microsoft Access database.

Data Highlights

There were clear improvements in the EHDI-related data reported by state and territories, especially in the area of infants screened for hearing loss, for years 1999–2004. These improvements reflect the effort put forth by EHDI programs and progress towards EHDI goals.

- More data items were included in the 2000 version of the DSHPHWA survey than in the 1999 version of the survey. The additional data items included: the number of infants receiving a diagnostic audiological evaluation, the number of infants with hearing loss enrolled in early intervention services, and the number of infants receiving early intervention services before 6 months of age.
- The number of states and territories responding to the DSHPHWA survey increased from 22 in 1999 to 49 in 2004.
- The percentage of infants screened for hearing loss increased from 46.5% (22 respondents) in 1999 to 91.8% (49 respondents) in 2004.
- The percentage of infants receiving a diagnostic evaluation before 3 months of age increased from 51.8% for 1999 (8 respondents) to 75.7% (36 respondents) for 2004.
- The number of infants diagnosed with a permanent hearing loss increased from 282 in 1999 (based on reports from 9 states) to 3,600 in 2004 (based on reports from 47 states).

Data Limitations (1999–2004)

- Not all states and territories responded to the DSHPHWA survey, especially for year 1999.
- Values for some key data items that showed either a decline in or limited improvements from 2000 to 2004 might have been attributable to the increase in the number of newer and less established EHDI programs in states and territories answering the DSHPHWA survey each year.
- Respondents were given the option to report either the number of resident births or the number of occurrent births and were not required to indicate if they reported resident or occurrent birth data, which limited comparability of data between states.
- No automatic error checks were included in the survey, which meant data about the screening, diagnostic, or intervention, or a combination thereof, status of infants were incomplete in some cases.
- In some cases, the number reported as *Referred* for audiological evaluation incorrectly included infants who were referred for a hearing rescreening, which is different from an audiological evaluation. This made it difficult to accurately calculate the percentage of infants who received an audiological evaluation, which was calculated as follows:
 - $\text{percentage evaluated} = \frac{\text{number receiving an audiological evaluation}}{\text{number referred for an audiological screening}}$
- The survey did not ask respondents to report the reason why infants did not receive screening, diagnostic, or intervention services.
- Previously released DSHPHWA data summaries for the years 1999–2004 reflected statistics only from those states and territories that could report complete data.

To illustrate the last point, if a state reported the number of live births, but not the number of babies screened for hearing loss, that state's birth data were not included in the reported screening data. However, the tables in the following pages of this summary include all data that

states and territories reported in a given year, regardless of whether they were incomplete. In cases in which a state or territory did not report any data field for a given item, the field in the table has been highlighted in gray.

Therefore, as a result of including incomplete information from respondents, the data tables for the years 1999–2004 (Tables C–H) does not include totals or statistics for key data items (e.g., percentage of infants screened for hearing loss) because such figures would be misleading. Table I does include key data items totals for years 1999–2004.

1999 DSHPHWA Data Reporting Form

State Reporting: _____ Reporting Year: _____

Number of Birthing Hospitals: _____ Number of Birthing Hospitals with UNHS: _____

1) Number of Live Births: _____

2) Number of Infants Screened: _____

a) Prior to Discharge: _____ b) After discharge, before 1 month:

3) Number of Infants Referred for Audiologic Evaluation: _____

4) Number of Infants who Received Audiologic Evaluation By 3 Months of Age: _____

5) Number of Children Identified With Permanent Congenital Hearing Loss in Reporting Year: _____

UNILATERAL HEARING LOSSES:

SENSORINEURAL				CONDUCTIVE		MIXED			
Mild	Moderate	Severe	Profound	Mild	Moderate	Mild	Moderate	Severe	Profound

BILATERAL HEARING LOSSES:

SENSORINEURAL				CONDUCTIVE		MIXED			
Mild	Moderate	Severe	Profound	Mild	Moderate	Mild	Moderate	Severe	Profound

6) Median, Average and Age Range at Diagnosis of Children with Permanent Congenital Hearing Loss

a) Median Age (months): _____ b) Average Age Months): _____

c) Minimum Age (Months): _____ d) Maximum Age (Months): _____

7) Number of Children with PCHL Receiving Intervention by 6 Months: _____

**The Directors of Speech and Hearing Programs in State Health and Welfare
Agencies (DSHPSHWA) Data Reporting Form**
Reporting Year 2004

**Please remember to mark if the data is actual (Act) or estimated (Est). Thank you for
completing this form.**

State/Territory Reporting:

Reporting Year: 2004

1) Are birthing hospitals/facilities/providers required by the state to report hearing screening information? Yes No

a) If "yes" to question #1, what information are hospitals/facilities/providers required to report?

=====

Screening Information

2) Number of occurrent live births (in year 2004): Act Est

• Source of the data (i.e. state report?):

3) Total number of infants born between 1/01/04 – 12/31/04 screened for hearing loss:
Act Est

a) Number screened **prior to discharge** (if known): Act Est

b) Number screened **after discharge, but before 1 month of age** (if known):

Act Est

• Source of the data:

=====

Referral Information

4) Number of infants born between 1/01/04 – 12/31/04 **referred** for a Diagnostic Audiologic Evaluation: Act Est

• Source of the data:

5) Number of infants born between 1/01/04 – 12/31/04 **received** a Diagnostic Audiologic Evaluation: Act Est

a) Number of infants receiving a Diagnostic Audiologic Evaluation before 3 months of age:

Act Est

• Source of the data:

=====

Case Information

6) Total number of children born between 1/01/04 – 12 /31 /04 that were identified with a Permanent Childhood Hearing Loss (PCHL) (including both those identified through a newborn hearing screening program and late identified cases): Act Est

- a) Of the **total** number of children born between **1/01/04 – 12/31/04** who were identified with a PCHL, how many were screened through a Newborn Hearing Screening Program:
 Act Est

7) Average, Median, and Age Range of Children when they are diagnosed with a PCHL:

- a) Average Age (Months): c) Minimum Age (Months)
 b) Median Age (Months): d) Maximum Age (Months)

Average Age: If there are 5 children born in 2004 with a PCHL with the following age of diagnosis: 1.00 month, 1.25 months, 3.75 months, 4.50 months, 6.25 months, the average for 2004 would be: $1.00 + 1.25 + 3.75 + 4.50 + 6.25 = 16.75$ divided by 5 = 3.35 months. **Median Age:** Using these ages, the median age for 2004 would be 3.75 months (age when 50% of children are above & 50% are below).

Did your state use the DSHPSHWA formula (please see the 2004 DSHPSHWA Explanations document) to determine the previous values: Yes No

- If you answered no, please explain:

8) Total number of children born in **2004** with PCHL receiving intervention: Act Est

a) Number born in **2004** with PCHL that received intervention **before 6 Months of age:** Act Est

Intervention: Refers to services specifically for children who are deaf or hard of hearing and may include, but are not limited to monitoring, speech-language therapy, early intervention programming on a regular basis by a parent-infant specialist, medical or surgical treatment, etc (please see the 2004 DSHPSHWA Explanations document for more information).

=====

Hospital Reporting & State Tracking Information

9) Number of birthing hospitals/facilities: Act Est

10) Number of birthing hospitals/facilities with Universal Newborn Hearing Screening (UNHS):
 Act Est

11) Does your state/territory define a UNHS birthing hospital/facility by the percent of infants screened: Yes No

a) If yes, please select one of the following choices:

Screen 95% or over Screen 90% or over Screen 85% or over Other
 (Please specify)

12) How do birthing hospitals/facilities report hearing screening information to the state / territory (check all that apply):

- | | | |
|--|--|--|
| <input type="checkbox"/> Auris | <input type="checkbox"/> Electronic Forms | <input type="checkbox"/> QS Technologies |
| <input type="checkbox"/> Blood Spot Card Form(s) | <input type="checkbox"/> HI*Track | <input type="checkbox"/> Paper Reporting |
| <input type="checkbox"/> Custom/State Developed | <input type="checkbox"/> Hospitals do not report | <input type="checkbox"/> OZ System |

Electronic Birth Certificate (EBC) Other (please specify)

13) What system, if any, does **the state/territory** use to track hearing screening and follow-up information for infants/children:

- Auris Limelight Technologies None
 Custom/State Developed Neometrics OZ System
 HI*Track Other (please specify)

Hearing Loss Type & Severity

DSHPSHWA uses the following criteria to classify hearing loss:

Mild: 21 – 40dB HL Severe: 71 – 90dB HL
 Moderate: 41 – 70dB HL Profound: 91 + dB HL

14) Does your state/territory use the DSHPSHWA system to classify the severity of a hearing loss? Yes No

- If you answered “No” to the previous question, please specify the classification criteria used.

Mild (dB): Severe (dB):
 Moderate (dB): Profound (dB):

15) Please complete the following tables if your state/territory recorded the type and severity of hearing loss for children identified with a PCHL in 2004.

UNILATERAL HEARING LOSSES:

SENSORINEURAL (Total #)				CONDUCTIVE (Total #)		MIXED (Total #)			
Mild	Moderate	Severe	Profound	Mild	Moderate	Mild	Moderate	Severe	Profound

BILATERAL HEARING LOSSES:

SENSORINEURAL (Total #)				CONDUCTIVE (Total #)		MIXED (Total #)			
Mild	Moderate	Severe	Profound	Mild	Moderate	Mild	Moderate	Severe	Profound

- If your state did not collect the above data, are there any plans to record this data in the future? Yes No
- If you answered Yes, estimated date to begin recording type and severity of identified cases of PCHL:

Year 2003 EHDI Data Update

Note: This section is only for states that provided data for last year's DSHPHWA form (i.e., reporting year 2003). Only those states are requested to update the information they provided for reporting year 2003. If you did not return a 2003 DSHPHWA form last year, please to do not complete this section.

6) Number of Children Identified with Permanent Childhood Hearing Loss (PCHL) in birthing Year 2003: Act Est

7) Average, Median, and Age Range of Children when they are diagnosed with PCHL

a) Average Age (Months): Act Est

b) Median Age (Months): Act Est

c) Minimum Age (Months): Act Est

d) Maximum Age (Months): Act Est

Example: Supposing that in 2003, 3 additional children born in 2002 are identified with the following ages of diagnosis: 3.50 months, 7.75 months, and 13.00 months. The average age of diagnosis for 2002 would change to: $1.00 + 1.25 + 3.75 + 4.50 + 6.25 + 3.50 + 7.75 + 13.00 = 41.00$ divided by 8 = 5.13 months. The median age would change to 5.4 months based on: 1.00 1.25 3.75 4.50 6.25 3.50 7.75 13.00. The midpoint is half of the difference between 4.50 and 6.25 = 5.4 months

8) Number of Children born in 2003 with PCHL receiving intervention: Act Est

Additional Comments

DSHPSHWA & Other Form Explanations (2004 Form)

1. Hospital Reporting.

State will specify if hospitals are required to report hearing screening information.

- 1a) States will list what information (if any) hospitals are required to report.
-

2. Number of Live Births.

Each state is to report the number of live births reported by calendar year as determined by the state entity responsible for reporting vital statistics. Number of births may be reported by either residence or occurrence. Default is typically by occurrence.

3. Number Screened.

Each state is to report the number of infants receiving a physiological hearing screening test bilaterally. Two numbers will be reported: (3A) number screened prior to hospital discharge and (3B) number screened before 1 month of age.

- These numbers should be an unduplicated count of the number of infants screened. In other words, **infants included in 3A should not be included in 3B.**
- The numbers reported should reflect the number of infants screened, not the number of tests completed or number of ears screened.
- Collection of information on high risk indicators is not considered a physiological measure.
- At this time, the physiologic measures considered to provide valid screening results are EOAE and ABR (screening, automated, or conventional).
- The exact protocol, person who screens, pass/refer criteria, counting valid/invalid screening, and so forth are to be determined by each state.
- Children referred directly for diagnostic evaluation (e.g., because of high-risk factors) may be counted as screened after they receive the physiological hearing test.

EXAMPLES:

- For programs using a 2-stage hearing screening protocol, a child is considered screened if the first stage is completed before discharge. If the first stage is completed after discharge, the child should be counted in 2B.
- Unilateral screening was considered, however, it was ruled out as a valid comparison to bilateral screening, which was determined as the basis for this data base.

4. Number Referred for Audiologic Evaluation

Each state is to report the total number of infants from Number 3 (3A + 3B) that are referred from initial or multiple screenings for audiologic evaluation. An audiologic evaluation is defined as the use of a battery of audiometric procedures to determine type of hearing loss by obtaining frequency and intensity specific information for each ear.

EXAMPLES:

- An infant is considered referred for a audiologic evaluation only when a systematic active referral system can ensure the child is linked with appropriate diagnostic services. The number reported does not include children who have not completed the hearing screening process (e.g., those who do not ever have an actual screening test but are referred for diagnostic evaluation solely because they were missed).
- These children would be counted as receiving a screening when the testing is performed according to time lines specified in #3).
- A child is considered to be referred for diagnosis when he or she has completed the hospital-defined screening process.

5. Number who Received Audiologic Evaluation by 3 months of age

Each state is to report the **total** number of infants from # 4 who were born in year 2004 and received an audiologic evaluation. This is the number of infants for whom hearing loss has been confirmed and infants for whom hearing loss has been ruled out.

5a) Each state is to report the number of infants from # 5 who were born in year 2004 and received an audiologic evaluation **by 3 months of age**. This is the number whom hearing loss has either been confirmed or ruled out.

Determining auditory status is a diagnostic process and usually will include more than one session. This item should reflect number of infants who have completed the process to sufficiently confirm or rule out hearing loss. The diagnostic process is expected to continue throughout early childhood.

The diagnostic process should include a combination of physiologic and behavioral measures and may include: ABR (click, frequency specific, bone conducted), EOAE (TEOAE and DPOAE), Immittance, and Behavioral measures. A diagnosis of hearing loss should not be based on the results of a single audiometric test.

EXAMPLES:

- After the initial screening, children referred for audiologic evaluations may initially receive only a screening that rules out a hearing loss. These children would be counted as referred and receiving the audiologic evaluation. In this case, the rescreening is considered part of the diagnostic evaluation and rules out a hearing loss.

- If a child is screened in the hospital and immediately an evaluation is performed before discharge, the child should be counted as screened, referred for audiologic evaluation, and having received the evaluation.

The time limit of 3 months of age was used in accordance with Joint Committee on Infant Hearing 1994 Position Statement goal to initiate audiologic diagnostic procedures as early as possible, in many cases within weeks of birth. Reporting the number of infants with diagnostic evaluations at 3 months of age should not be interpreted to mean that 3 months is the age at which the diagnostic evaluation is to be initiated or that evaluations performed past 3 months of age are not valid.

6. Number of Children with Permanent Childhood Hearing Loss (PCHL) Aged 0-7 Years

Each state is to report the **total** number of children born between **January 1, 2004 and December 31, 2004**, who are identified with Permanent Childhood Hearing Loss (PCHL), i.e. the number of children identified with hearing loss who were born in year 2004. This reported number should include any late identified cases of children identified with a PCHL who were born in 2004. This number will be updated each year as older children who were born in Year 2004 are identified with a hearing loss.

PCHL includes unilateral or bilateral permanent childhood hearing loss. Permanent hearing loss includes both sensorineural and non-transient conductive hearing loss (e.g., resulting from craniofacial anomalies, ossicular fixation, etc.). Hearing loss must be confirmed through a battery of audiometric tests that result in hearing loss detection at greater than 20 dB HL. A figure for each year will be given, and the number of children identified will be updated each year according to the birth year, as new children with hearing loss are identified. The number reported for previous years is cumulative and should be updated annually. The number will include the total number of children from the original cohort with hearing loss born in that year, regardless of when identified.

In addition to the total number of children with hearing loss, each child for whom hearing loss is detected will be classified by laterality, type, and degree of hearing loss according to 20 classifications.

6a) Each state is to report the number of children born in Year 2004, who are identified with a hearing loss, **that were screened through a Newborn Hearing Screening Program**. This is a subset of # 6 and includes only infants screened through the newborn screening programs. This number will remain the same, i.e. will not be updated in later years.

7. Average/Median Age in Months of Identification of Hearing Loss

Each state is to report the average and median age in months at which hearing loss was confirmed for the children in # 6. The average and median age and minimum and maximum ages will be calculated separately for each calendar year. The median age is the age at which 50% of the children are above and 50% of the children are below that age.

Age of confirmation of hearing loss is the age at which an audiologist has determined (confirmed) that a hearing loss is present. Obtaining complete, audiometric information is often an ongoing process with infants and this item should not be the age at which complete air and bone thresholds are obtained, but rather the age at which can be reasonably determined the presence or absence of a hearing loss.

For each year being reported, the average and median age will be calculated. Thus, the average and median age of diagnosis will be updated (and most likely change) on a yearly basis. The average and median age for each year will increase in subsequent years as children with congenital hearing loss are identified at later ages.

Examples for calculating average and median age of confirmation of hearing loss and updating average and median age annually:

Age of Audiologic Evaluation

Each state should obtain the age at which the infant/child received an audiologic evaluation of hearing loss in months rounded to the nearest week, expressed as:

5.00: 5 months
5.25: 5 months, 1 week
5.50: 5 months, 2 weeks
5.75: 5 months, 3, weeks

If the age of audiologic evaluation takes place in the first 4 days of the week, the age should be rounded down. If it occurs in the last 3 days of the week, it should be rounded up.

Example:

5 months, 2nd week, 4th day = 5.50 months
5 months, 2nd week, 5th day = 5.75 months

Average Age

If a state has 5 children born in 2004 identified with hearing loss with the following age of diagnosis: 1.00 month, 1.25 months, 3.75 months, 4.50 months, 6.25 months

The average for that state for 1998 would be reported as:

$$1.00 + 1.25 + 3.75 + 4.50 + 6.25 = 16.75 \text{ divided by } 5 = 3.35 \text{ months}$$

Median Age

Using the above ages, the median age for that state for 2004 would be reported as: 3.75 months (the age at which 50% of the children are above and 50% of the children are below).

Updating Each Year

Using the above ages, and supposing that in year 2004, 3 additional children born in year 2000 are identified with PCHL with the following ages of diagnosis:

3.50 months, 7.75 months, 13.00 months

The average age for 2004 would change to:

$1.00 + 1.25 + 3.75 + 4.50 + 6.25 + 3.50 + 7.75 + 13.00 = 41.00$ divided by 8 =
5.13 months

The median age would change to 5.4 months based on the following:

1.00, 1.25, 3.75, 4.50, 6.25, 3.50, 7.75, 13.00 (The midpoint is half of the difference between 4.5 and 6.25 = 5.4 months)

8. Number of Infants Receiving Intervention by 6 months of age

Each state is to report the **total** number of children identified in # 6 who are receiving appropriate intervention services as determined by each state. Because of the variability across states as to who qualifies for services, what services are available, it is the responsibility of each state to define what constitutes appropriate early intervention services, what the definition of enrolled is, etc. Intervention services must be specifically for children who are deaf or hard of hearing and may include, but are not limited to audiological services, educational services, medical or surgical treatment, etc.

8a) State should report the number of infants and / or children with a PCHL and born in year 2004 who are receiving appropriate early intervention services (as determined by each state) by 6 months of age.

The age of 6 months was selected in accordance with the recommendations of the Joint Committee on Infant Hearing 1994 Position Statement to encourage the enrollment of infants with identified hearing loss into appropriate early intervention as soon as possible. Appropriate intervention may include a range of services such as monitoring, speech-language therapy only or early intervention programming received on a regular basis by a parent-infant specialist, according to family choice.

To make comparisons between states, each state should indicate what types of services from the list below have been included in the number reported as receiving early intervention:

- A. Children with completed IFSPs.
- B. Children enrolled in Part C services.
- C. Children for whom intervention is received on a regular basis (at least 1 or 2 times per month).
- D. Children receiving speech/language therapy only.

- E. Children who are monitored periodically for changes in hearing level.
 - F. Children whose families receive preventative counseling.
 - G. Children whose families receive support services.
 - H. All of the above.
 - I. Other (describe):
-

9. Birthing Hospitals

Total number of birthing hospitals / facilities in the state.

10. UNHS Hospitals

State reports how many hospitals / facilities are classified as Universal Newborn Hearing Screening in the state.

11. UNHS Hospital Classification

States report if they classify Universal Newborn Hearing Screening birthing hospitals / facilities by the percent of infants they screen.

11a) If state does use a percent screened to classify Universal Newborn Hearing Screening hospitals / facilities, state selects one of the four listed choices. If the “other” option is selected, states are asked to provide the percent they use to classify Universal Newborn Hearing Screening hospitals / facilities.

12. Hospital Reporting of Hearing Screening Results

Select the type of method(s) or system(s) that birthing hospitals in the state use to report hearing screening information. All methods and/or systems used by birthing hospitals should be selected.

13. State Tracking of Hearing Screening Information

Select the type of tracking system that the state program uses to track hearing screening and follow-up information for infants and children. If the state does not currently use a system to track EHDI related information for infants and children, please indicate this by selecting the “None” option.

14. Degree of Hearing Loss

Categories of hearing loss are intended to provide information regarding that child's average/estimated hearing for the frequency range 500-2000 Hz. For children with certain types and degrees of losses (e.g. ski slope), data can be somewhat misleading. The data base is meant to be only a generalized way of categorizing type and degree of hearing loss and for simplicity's sake cannot incorporate all categories, type, and degree of hearing loss.

Mild Hearing Loss:	21 to 40
Moderate Hearing Loss:	41 to 70
Severe Hearing Loss:	71 to 90
Profound Hearing Loss:	91 +

The ages birth through 7 years were picked because the database should include all children with congenital hearing loss. It is assumed that by the end of the first year of school, all children with congenital hearing loss will be identified.

Although there will be children with fluctuating conductive conditions, for purposes of this database, only those with permanent conductive hearing loss are included. Conductive hearing loss associated with chronic or recurrent otitis media may be deleterious to child development in ways similar to that of permanent hearing loss, but this database does not track otitis media. The exclusion of other types of hearing loss in this database should not be interpreted to mean they are not important. States may also wish to maintain records for children identified with hearing loss of a non-congenital origin, such as children with acquired hearing loss or progressive hearing loss. Determining whether a hearing loss is acquired vs. congenital is difficult; however the purpose is to record only congenital hearing loss related to the identification through universal screening so children who develop hearing loss from diseases such as meningitis, and CMV, should not be included in this database.

15. Laterality and Type of Hearing Loss

Laterality of Hearing Loss

For each child, record the hearing loss according to laterality, with each child having either a unilateral or a bilateral hearing loss. Degree of unilateral hearing loss is to be reported according to the poorer ear. Degree of bilateral hearing loss is to be categorized according to the better ear.

Type of Hearing Loss

For each child, record the type of hearing loss identified, with each child having either a sensorineural, permanent conductive, or mixed hearing loss.

Data Summary Tables

Data reported by states and territories for each year are listed in Tables C - I. As noted in the limitations section, each of these tables includes all data that were reported by states and territories for that year. In some cases, this means only limited data appears for a state, such as the number of live births. When data for an item was not reported, the corresponding data fields were highlighted in gray. These tables also show the inconsistencies in the information reported, such as cases where a respondent did not report any data about the number receiving a diagnostic evaluation, but did report data about the number identified with a permanent hearing loss. As a result of these limits and inconsistencies, the totals and calculated rates for key indicators, such as the percent screened for hearing loss, were not included in these tables.

Table A: Summary of Year 1999 Key Data Items

Category	# States and Territories Reporting	Statistics (Estimated)
Screened for hearing loss	22	46.5% (660,639 / 1,419,633)
Referred for audiological evaluation	12	4.0% (13,739 / 340,954)
Receiving audiological evaluation before 3 months	8	51.8% (4,221 / 8,145)
Identified with hearing loss	9	282 (1.09 per 1,000 screened) Range: 0.35 – 3.5 per 1,000 screened
Enrolled in intervention before 6 months	N/A*	N/A*

Note: Data reported by states and territories was estimated in some cases.

*The percent enrolled in early intervention before 6 months cannot be calculated as in years 2000 – 2004 because the overall number enrolled in intervention was not reported in 1999. The percent enrolled before six months is calculated by (# enrolled in intervention by 6 months / # enrolled in intervention).

Explanation of Calculations (1999 DSHPSHWA Data)

Screened for hearing loss: 46.5%; 660,639 (# screened for HL) / 1,419,633 (# of live births) reported in 22 states

Referred for audiological evaluation: 4.0%; 13,739 (# referred for evaluation) / 340,954 (# screened for HL) in 12 states

Receiving audiological evaluation before 3 months: 51.8%; 4,221 (# reported to have received an evaluation) / 8,145 (# reported to have been referred for an evaluation) in 8 states

Identified with hearing loss: 282 (# identified) out of 257,085 newborns screened in these 9 states

Table B: Summary of Year 2004 Key Data Items

Category	# States and Territories Reporting	Statistics (Estimated)
Screened for hearing loss	49	91.8% (3,496,452 / 3,810,234)
Screened for hearing loss before discharge	42	98.3% (2,613,917 / 2,659,117)
Referred for audiological evaluation	48	1.8% (59,441 / 3,363,758)
Receiving audiological evaluation	41	48.7% (25,376 / 52,080)
Loss to System	41	51.3% (represents 26,704 infants)
Receiving audiological evaluation by 3 months	36	75.70%* (14,909 / 19,685 evaluated) 33.9%** (14,909 / 44,032 referred)
Identified with hearing loss	47	3,600 (1.11 per 1,000 screened); Range: 0.22 – 3.61 per 1,000 screened
Identified with hearing loss through an EHDI program	47	95.6% (3,441 infants with hearing loss were identified through a newborn hearing screening program out of a total of 3,600 identified with hearing loss)
Enrolled in Intervention	40	65.3% (1,859 / 2,846)
Enrolled in Intervention by 6 months	39 [^]	69.9%^{^^} (1,277 / 1,828 in intervention) – 38 states 46.3% (1,301 / 2,810 identified)

Note: Data reported by states and territories was estimated in some cases

Explanation of Calculations (2004 DSHPSHWA Data)

Screened for hearing loss: 91.8%; 3,496,452 (# screened for HL) / 3,810,234 (# of live births) reported in 49 states

Screened for hearing loss before discharge: 98.3%; 2,613,917 (# screened for HL before hospital discharge) / 2,659,117 (# screened for HL) in 42 states

Referred for audiological evaluation: 1.8%; 59,441 (# referred for evaluation) / 3,363,758 (# screened for HL) in 48 states

Receiving audiological evaluation: 48.7%; 25,376 (# reported to have received an evaluation) / 52,080 (# reported to have been referred for an evaluation) in 41 states

Loss to System: 100 – 48.7% = 51.3% (Percent reported to have not received an audiologic evaluation) in 41 states

Receiving audiological evaluation by 3 months: 75.7%*: 14,909 (# reported to have received an evaluation by 3 months) / 19,685 (overall # reported to have received an evaluation) in 36 states

33.9%** : 14,909 (# reported to have received an evaluation by 3 months) / 44,032 (# reported to have been referred for an evaluation) in 36 states

Note: Some states may have included those infants that were only referred for a second screening (not a full evaluation) in the number reported as referred for evaluation. In some cases, the number reported as receiving a full diagnostic evaluation may not have included the number that had also received a second screening

Provides a potential estimate of the percent of children who may not have received recommended follow-up testing or those cases where no information about completed follow-up testing was reported to the state or territory EHDI program

Identified with hearing loss: 3,600 (# identified) out of 3,250,732 newborns screened in these 47 states

Identified with hearing loss through an EHDI program: 3,441 (# identified through a newborn hearing screening program) out of a total of 3,600 identified overall in 47 states. Results in 95.6% of those identified with a hearing loss being identified by a newborn hearing screening program

Enrolled in Intervention: 65.3%: 1,859 (# with hearing loss enrolled in intervention) / 2,846 (# identified with hearing loss in the 40 states that also reported the # enrolled in intervention)

Enrolled in Intervention by 6 months: 69.9%^^: 1,277 (# enrolled in intervention by 6 months; *not including the number reported by the state that did not report the corresponding total number enrolled in intervention*) / 1,828 (# enrolled in intervention) in 38 states

46.3%: 1,301 (number enrolled in intervention by 6 months) / 2,810 (# identified with HL in the 39 states that also reported the # enrolled in intervention by six months)

Survey Results (Tables C – H)

*1999-2004 DSHPHWA data tables contain a complete summary of all the data reported by every state and territory. States and territories that did not report data for one or more data items are shaded in grey.

Table C: 1999 DSHPHWA Data Summary

State/Territory (59)	# Live Births (25 reported)	# Screened (23 reported)	% Screened	# Referred (13 reported)	% Referred	# Evaluated (9 reported)	% Evaluated	# Identified (11 reported)	# Intervention (6 reported)	% Intervention
Alabama										
Alaska										
Arkansas	35,189	20,109	57.1	1,781	8.9					
Arizona	80,505	73,035	90.7							
California										
Colorado	63,590	55,324	87.0	128	0.2	86	67.2	86		
Connecticut										
Delaware										
District of Columbia										
Florida										
Georgia	122,368	40,474	33.1							
Hawaii	17,091	16,841	98.5	176	1.0	112	63.6	59	50	84.7
Idaho	19,350									
Illinois*		54,510		2,178	4.0	14	0.6	22	21	95.5
Indiana										
Iowa	37,407	17,411	46.5	731	4.2					
Kansas	38,229									
Kentucky	50,000	31,247	62.5	4,538	14.5	3,426	75.5	42	12	28.6
Louisiana										
Maine	13,390	5,222	39.0							
Maryland										
Massachusetts										
Michigan	131,455	64,650	49.2							
Minnesota	62,688	36,347	58.0							
Mississippi	41,617	39,481	94.9	649	1.6	189	29.1	32	10	31.3
Missouri										
Montana	10,226	6,165	60.3	209	3.4					
Nebraska	24,119	6,334	26.3	457	7.2	6	1.3	3		
Nevada										
New Hampshire										

State/Territory (59)	# Live Births (25 reported)	# Screened (23 reported)	% Screened	# Referred (13 reported)	% Referred	# Evaluated (9 reported)	% Evaluated	# Identified (11 reported)	# Intervention (6 reported)	% Intervention
New Jersey	113,000	46,179	40.9	2,873	6.2			24		
New Mexico										
New York	260,571	58,825	22.6							
North Carolina										
North Dakota	8,879	3,397	38.3					2		
Ohio										
Oklahoma										
Oregon	46,067	12,800	27.8						12	
Pennsylvania										
Rhode Island	13,212	13,191	99.8	32	0.2	11	34.4	18	10	55.6
South Carolina**	52,000							40		
South Dakota										
Tennessee										
Texas										
Utah	47,267	43,581	92.2	358	0.8	160	44.7			
Vermont										
Virginia	93,289	45,091	48.3	1,807	4.0	231	12.8	16		
Washington	79,577	5,811	7.3							
West Virginia										
Wisconsin	68,126	19,124	28.1							
Wyoming										
American Samoa										
Guam										
Mariana Islands										
Marshall Islands										
Micronesia										
Palau										
Puerto Rico										
Virgin Islands										
* Number identified may include cases of nonpermanent conductive hearing loss										
** Could not separate 1998 data from 1999 data										

Table D: 2000 DSHPSHWA Data Summary

States/Territory (59)	# Live Births (48 reported)	# Screened (44 reported)	% Screened	# Referred (34 reported)	% Referred	# Evaluated (22 reported)	% Evaluated	# Identified (26 reported)	# Intervention (19 reported)	% Intervention
Alabama	61,139	45,403	74.3							
Alaska	9,905	4,277	43.2	68	1.6	19	27.9	5	4	80.0
Arkansas	36,406	25,041	68.8	71	0.3					
Arizona	86,042	78,034	90.7	780	1.0					
California	519,248	70,045	13.5	91	0.1	62	68.1	10		
Colorado	65,904	59,230	89.9	110	0.2	92	83.6	64	57	89.1
Connecticut	19,267	18,541	96.2	274	1.5	253	92.3	35	27	77.1
Delaware	11,225	10,120	90.2	257	2.5	110	42.8			
District of Columbia	8,000									
Florida	201,520									
Georgia	130,000	64,786	49.8							
Hawaii	17,592	16,332	92.8	168	1.0	155	92.3	57	53	93.0
Idaho	19,870	7,992	40.2	65	0.8	26	40.0	25	25	100.0
Illinois	183,000	62,345	34.1	3,072	4.9			36	30	83.3
Indiana	34,564	33,537	97.0	467	1.4					
Iowa	38,170	34,803	91.2							
Kansas	39,232	34,917	89.0							
Kentucky	50,473	42,632	84.5	5,324	12.5	2,169	40.7	12	9	75.0
Louisiana	66,888	36,428	54.5	3,602	9.9			8		
Maine	13,462	12,028	89.3							
Maryland										
Massachusetts	80,319	80,098	99.7							
Michigan	134,208	90,945	67.8	2,957	3.3	2,005	67.8	172	172	100.0
Minnesota	67,761	44,045	65.0							
Mississippi										
Missouri	78,302	8,500	10.9	36	0.4					
Montana	10,928	8,459	77.4	334	3.9			20		

States/Territory (59)	# Live Births (48 reported)	# Screened (44 reported)	% Screened	# Referred (34 reported)	% Referred	# Evaluated (22 reported)	% Evaluated	# Identified (26 reported)	# Intervention (19 reported)	% Intervention
Nebraska	24,767	8,978	36.2	164	1.8	263	160.4			
Nevada										
New Hampshire	13,987	5,280	37.7					15	15	100.0
New Jersey	111,794	58,500	52.3	2,983	5.1					
New Mexico	26,813	21,450	80.0	1,300	6.1			27	17	63.0
New York	259,824									
North Carolina	120,237	85,964	71.5	590	0.7	84	14.2		521	
North Dakota	8,847	3,693	41.7	167	4.5			2		
Ohio	150,000	21,151	14.1	714	3.4			39	36	92.3
Oklahoma										
Oregon	44,380	42,826	96.5	1,151	2.7	397	34.5	87	55	63.2
Pennsylvania	144,828	70,077	48.4	1,167	1.7	992	85.0	6	6	100.0
Rhode Island	13,180	13,161	99.9	33	0.3	24	72.7	18	14	77.8
South Carolina	20,436	16,744	81.9	398	2.4	218	54.8	50	30	60.0
South Dakota	10,589	6,937	65.5							
Tennessee	78,593	48,582	61.8							
Texas	364,000									
Utah	48,454	46,579	96.1	440	0.9	163	37.0	82	55	67.1
Vermont	6,280	1,361	21.7	1	0.1	1	100.0	1	1	100.0
Virginia	96,759	80,890	83.6	3,194	3.9	2,370	74.2	46		
Washington	81,004	18,212	22.5							
West Virginia	20,000	9,675	48.4	700	7.2	125	17.9	20		
Wisconsin	70,473	40,906	58.0	769	1.9	571	74.3	33		
Wyoming	5,771	5,570	96.5	10	0.2	9	90.0	4		
American Samoa										
Guam										
Mariana Islands										
Marshall Islands										
Micronesia										
Palau										
Puerto Rico										
Virgin Islands	1,772	947	53.4	16	1.7	16	100.0	1	1	100.0

Table E: 2001 DSHPSHWA Data Summary

State / Territory (59)	# Live Births (51 reported)	# Screened (48 reported)	% Screened	# Referred (40 reported)	% Referred	# Evaluated (27 reported)	% Evaluated	# Identified (36 reported)	# Intervention (31 reported)	% Intervention
Alabama	60,000	54,000	90.0	800	1.5	650	81.3	600		
Alaska	9,863	5,710	57.9	39	0.7	35	89.7	6	4	66.7
Arkansas	36,313	34,809	95.9	87	0.2	57	65.5	33	26	78.8
Arizona	85,603	78,475	91.7					61	61	100.0
California	528,509	137,871	26.1	504	0.4	257	51.0	126		
Colorado	65,161	61,733	94.7	400	0.6	300	75.0	91	91	100.0
Connecticut	43,156	40,646	94.2	571	1.4	126	22.1	27	18	66.7
Delaware	11,391	10,967	96.3	12	0.1	10	83.3	5	3	60.0
District of Columbia										
Florida	208,500								48	N/A
Georgia	133,934	108,156	80.8							
Hawaii	16,687	16,408	98.3	166	1.0	131	78.9	59	52	88.1
Idaho	20,305	16,798	82.7	53	0.3			48	48	100.0
Illinois	185,000	119,269	64.5	5,173	4.3			41		
Indiana	80,259	78,591	97.9	1,142	1.5	620	54.3	274		
Iowa	37,597									
Kansas	39,052	35,927	92.0						17	
Kentucky	52,000	45,851	88.2	1,389	3.0	344	24.8	19	19	100.0
Louisiana	65,193	42,842	65.7	2,464	5.8			21		
Maine	13,590	10,821	79.6							
Maryland	70,132	42,262	60.3	308	0.7			82		
Massachusetts	80,901	79,491	98.3	1,336	1.7					
Michigan	132,184	107,827	81.6	3,594	3.3	1,564	43.5	167	44	26.3
Minnesota	66,616	46,631	70.0						65	
Mississippi	42,277	40,599	96.0	400	1.0	244	61.0	73	73	100.0
Missouri	75,290	28,152	37.4							
Montana	10,935	9,111	83.3	127	1.4			12	9	75.0

State / Territory (59)	# Live Births (51 reported)	# Screened (48 reported)	% Screened	# Referred (40 reported)	% Referred	# Evaluated (27 reported)	% Evaluated	# Identified (36 reported)	# Intervention (31 reported)	% Intervention
Nebraska	25,096	15,272	60.9	661	4.3	486	73.5	27	52	192.6
Nevada	31,297	12,518	40.0	375	3.0					
New Hampshire	14,054	9,187	65.4	86	0.9			12	14	116.7
New Jersey	112,109	75,187	67.1					59	17	28.8
New Mexico	27,422	25,228	92.0	1,300	5.2			32	28	87.5
New York	46,153	38,887	84.3	226	0.6					
North Carolina	118,786	117,911	99.3	3,843	3.3	2,860	74.4	115	104	90.4
North Dakota	8,839	4,779	54.1	14	0.3	9	64.3	4		
Ohio	151,140	26,645	17.6	1,193	4.5	38	3.2	38	36	94.7
Oklahoma										
Oregon	45,947	42,020	91.5	831	2.0	359	43.2	91	42	46.2
Pennsylvania	143,972	24,128	16.8	124	0.5				156	
Rhode Island	13,319	13,288	99.8	51	0.4	41	80.4	27	21	77.8
South Carolina	27,254	26,241	96.3	710	2.7	489	68.9	42	16	38.1
South Dakota	10,346									
Tennessee	83,521	52,980	63.4	1,960	3.7					
Texas	124,316	121,168	97.5	428	0.4	186	43.5	123	3	2.4
Utah	49,041	47,318	96.5	621	1.3	320	51.5	66	50	75.8
Vermont	6,150	2,546	41.4	1	0.0	1	100.0	1	1	100.0
Virginia	96,535	91,849	95.1	3,472	3.8	2,459	70.8	54	16	29.6
Washington	79,101	31,662	40.0							
West Virginia	21,001	18,446	87.8	400	2.2	272	68.0	43		
Wisconsin	68,006	59,425	87.4	1,385	2.3			50	36	72.0
Wyoming	5,694	5,565	97.7	12	0.2	12	100.0	12	12	100.0
American Samoa										
Guam	3,854	52	1.3	6	11.5	1	16.7			
Mariana Islands										
Marshall Islands										
Micronesia										
Palau										
Puerto Rico										
Virgin Islands	1,772	620	35.0	30	4.8	30	100.0	1	0	0.0

Table F: 2002 DSHPSHWA Data Summary

State/Territory (59)	# Live Births (48 reported)	# Screened (48 reported)	% Screened	# Referred (40 reported)	% Referred	# Evaluated (37 reported)	% Evaluated	# Identified (39 reported)	# Intervention (34 reported)	% Intervention
Alabama										
Alaska	9,830	7,318	74.4	105	1.4	11	10.5	5	3	60.0
Arkansas	36,377	34,388	94.5	88	0.3	49	55.7	41	26	63.4
Arizona										
California	530,203	200,854	37.9					178		
Colorado	68,891	66,145	96.0	2,722	4.1	232	8.5	118	118	100.0
Connecticut	41,758	41,411	99.2	338	0.8	179	53.0	51	44	86.3
Delaware	11,709	11,483	98.1	160	1.4	125	78.1	19	12	63.2
District of Columbia										
Florida	205,580	203,113	98.8	7,134	3.5					
Georgia	134,598	125,881	93.5							
Hawaii	17,401	17,069	98.1	201	1.2	130	64.7	47	41	87.2
Idaho	20,686	17,189	83.1	204	1.2	142	69.6	41	36	87.8
Illinois	120,141	117,716	98.0	4,619	3.9	2,151	46.6	52		
Indiana	84,618	82,926	98.0	1,709	2.1	1,200	70.2	210	356	169.5
Iowa	37,555	31,884	84.9							
Kansas	39,654	36,481	92.0	162	0.4	24	14.8	28	2	7.1
Kentucky	50,500	49,745	98.5	4,887	9.8	837	17.1	30	22	73.3
Louisiana	61,367	52,149	85.0	3,115	6.0	1,700	54.6	32	32	100.0
Maine	13,370	13,043	97.6	476	3.6	0	0.0	0		
Maryland	70,528	60,438	85.7	309	0.5	309	100.0	108	108	100.0
Massachusetts	81,618	81,360	99.7	868	1.1	772	88.9	153		
Michigan	128,071	120,645	94.2	3,356	2.8	1,279	38.1	151	54	35.8
Minnesota	67,718	54,174	80.0						19	
Mississippi	42,000	39,776	94.7	398	1.0	316	79.4	66	66	100.0
Missouri	76,366	73,392	96.1	3,147	4.3	628	20.0	129	17	13.2
Nebraska	25,509	22,665	88.9	709	3.1	601	84.8	58	41	70.7
Nevada										
New Hampshire	13,493	11,033	81.8	96	0.9	30	31.3	14	14	100.0
New Jersey	110,367	107,421	97.3	4,822	4.5	1,992	41.3	46		
New Mexico	27,706	26,044	94.0	1,302	5.0			35	35	100.0
New York	250,434	231,123	92.3	1,217	0.5				197	

State/Territory (59)	# Live Births (48 reported)	# Screened (48 reported)	% Screened	# Referred (40 reported)	% Referred	# Evaluated (37 reported)	% Evaluated	# Identified (39 reported)	# Intervention (34 reported)	% Intervention
North Carolina	117,750	116,900	99.3	2,083	1.8	360	17.3	260	111	42.7
North Dakota	8,877	8,104	91.3	32	0.4	16	50.0			
Ohio										
Oklahoma	48,764	46,447	95.2	1,398	3.0	250	17.9	54	42	77.8
Oregon	44,000	41,138	93.5			358		123	48	39.0
Pennsylvania	142,380	75,300	52.9	514	0.7			48	47	97.9
Rhode Island	13,559	13,546	99.9	53	0.4	46	86.8	23	19	82.6
South Carolina	50,010	49,210	98.4	1,407	2.9	920	65.4	79	22	27.8
South Dakota	11,015	7,881	71.5							
Tennessee	82,603	40,387	48.9	1,119	2.8	273	24.4	8	8	100.0
Texas	314,417	310,913	98.9	694	0.2	228	32.9	132		
Utah	50,311	48,598	96.6	454	0.9	315	69.4	57	45	78.9
Vermont	6,107	5,062	82.9					16	16	100.0
Virginia	97,390	93,007	95.5	2,304	2.5	1,392	60.4	60	49	81.7
Washington	76,458	47,550	62.2							
West Virginia	21,132	20,616	97.6	130	0.6	90	69.2	20	17	85.0
Wisconsin	66,253	63,593	96.0	498	0.8	317	63.7	47	36	76.6
Wyoming	5,992	5,903	98.5	21	0.4	18	85.7	9	8	88.9
American Samoa										
Guam	3,221	118	3.7	6	5.1	1	16.7	0	0	0.0
Mariana Islands										
Marshall Islands										
Micronesia										
Palau										
Puerto Rico										
Virgin Islands	1,690	842	50	3	0.4	3	100.0	0		

Table G: 2003 DSHPSHWA Data Summary

State/Territory (59)	# Live Births (51 reported)	# Screened (50 reported)	% Screened	# Referred (47 reported)	# Evaluated (40 reported)	% Evaluated	# Identified (44 reported)	# Intervention (39 reported)	% Intervention
Alabama	59,125	57,000	96.4	3,000			30		
Alaska	9,959	8,081	81.1		67		12	8	66.7
Arkansas	37,132	34,185	92.1	116	55	47.4	37	36	97.3
Arizona									
California	541,834	304,469	56.2	1,117	890	79.7	473	256	54.1
Colorado	69,801	67,697	97.0	2,368	2,102	88.8	143	100	69.9
Connecticut	43,299	41,991	97.0	292	214	73.3	47	36	76.6
Delaware	12,115	10,115	83.5	62	62	100.0	31	28	90.3
District of Columbia	14,777	14,482	98.0	50	50	100.0	5	5	100.0
Florida	212,243	207,961	98.0	5,864				304	
Georgia	135,831	129,909	95.6	320	45	14.1	32		
Hawaii	18,082	17,821	98.6	171	126	73.7	54	41	75.9
Idaho	21,794	19,532	89.6	113	113	100.0	31	29	93.5
Illinois	163,144	163,144	100.0	62	48	77.4	72	72	100.0
Indiana	84,270	83,427	99.0	410	566	138.0	82	82	100.0
Iowa	38,402								
Kansas	40,330	39,103	97.0	2,334	1,798	77.0	52	13	25.0
Kentucky	50,627	50,371	99.5	1,986	278	14.0	22	22	100.0
Louisiana	64,513	60,388	93.6	3,916	2,554	65.2	91	47	51.6
Maine	13,662	12,890	94.3	267					
Maryland	70,783	64,413	91.0	871	236	27.1	80		
Massachusetts	81,068	80,117	98.8	889	757	85.2	221	140	63.3
Michigan	133,080	119,041	89.5	16,520			149		
Minnesota	70,006	65,114	93.0	1,120	600	53.6	21	21	100.0
Mississippi	41,354	40,778	98.6	408	341	83.6	65	65	100.0
Missouri	77,878	77,084	99.0	2,466	503	20.4	149	31	20.8
Montana	10,886	10,569	97.1	5	6	120.0	7		
Nebraska*	26,079	25,359	97.2	909	747	82.2	52	3	5.8
Nevada	31,057	30,958	99.7	795					
New Hampshire	13,875	12,655	91.2	118	11	9.3	11	11	100.0
New Jersey	111,872	110,071	98.4	5,111	2,732	53.5	61	20	32.8

State/Territory (59)	# Live Births (51 reported)	# Screened (50 reported)	% Screened	# Referred (47 reported)	# Evaluated (40 reported)	% Evaluated	# Identified (44 reported)	# Intervention (39 reported)	% Intervention
New Mexico	27,320	25,134	92.0	1,131			34	26	76.5
New York	252,150	232,530	92.2	1,210	308	25.5	74	67	90.5
North Carolina	118,493	113,174	95.5						
North Dakota	9,191	8,743	95.1	49	21	42.9	7		
Ohio	147,832	58,976	39.9	712	122	17.1	122	122	100.0
Oklahoma	50,874	48,928	96.2	1,579	500	31.7	58	44	75.9
Oregon	45,844	43,565	95.0	1,133	392	34.6	134	52	38.8
Pennsylvania	142,377	139,503	98.0	1,211	729	60.2	122	107	87.7
Rhode Island	13,823	13,761	99.6	74	70	94.6	19	17	89.5
South Carolina	53,216	52,376	98.4	1,635	1,055	64.5	87	48	55.2
South Dakota	11,503	10,395	90.4	51	35	68.6	2	2	100.0
Tennessee	84,015	81,494	97.0	1,258	769	61.1	8	8	100.0
Texas	331,824	323,305	97.4	1,677					
Utah	50,821	49,726	97.8	390	258	66.2	54	46	85.2
Vermont	6,330	5,919	93.5	14	12	85.7	3	3	100.0
Virginia	98,991	94,747	95.7	1,914	1,339	70.0	65	41	63.1
Washington	75,237	61,417	81.6	645					
West Virginia	21,481	21,103	98.2	320	210	65.6	40	24	60.0
Wisconsin	70,078	65,734	93.8				23	23	100.0
Wyoming	6,137	6,036	98.4	18	17	94.4	16	5	31.3
American Samoa									
Guam	3,296	2,673	81.1	25	14	56.0	1	1	100.0
Mariana Islands									
Marshall Islands									
Micronesia									
Palau									
Puerto Rico									
Virgin Islands									

* 2003 data is actually for the period 7/1/2002 to 6/30/2003

Table H: 2004 DSHPSHWA Data Summary

State/Territory (59)	# Live Births (49 reported)	# Screened (49 reported)	% Screened	# Referred (41 reported)	# Evaluated (41 reported)	% Evaluated	# Identified (47 reported)	# Enrolled (40 reported)	% Enrolled
Alabama	59,500	57,310	96.3	3,000			43	25	58.1
Alaska	10,256	9,102	88.7	162	28	17.3	16	12	75.0
Arkansas	37,831	35,816	94.7	184	88	47.8	30	30	100.0
Arizona									
California	541,834	423,428	78.1	2,040	1,504	73.7	629	266	42.3
Colorado	69,042	67,215	97.4	300	200	66.7	181		
Connecticut	42,499	42,494	100.0	324	273	84.3	60	26	43.3
Delaware	12,000	11,685	97.4	40	40	100.0	21		
District of Columbia	14,830	14,533	98.0	75	75	100.0	9	9	100.0
Florida	218,220	213,905	98.0	3,037	2,674	88.0			
Georgia	136,123	132,694	97.5				103		
Hawaii	18,246	18,023	98.8	185	167	90.3	65	54	83.1
Idaho	21,949	20,167	91.9	128	122	95.3	33		0.0
Illinois	176,272	171,436	97.3	1,081	9,145	846.0	127	127	100.0
Indiana	87,943	86,183	98.0	1,582	788	49.8	82	55	67.1
Iowa									
Kansas	40,450	39,517	97.7	2,171	1,917	88.3	65	45	69.2
Kentucky	54,123	52,042	96.2	2,003	345	17.2	31	31	100.0
Louisiana	61,001	58,729	96.3	3,394	1,721	50.7	63	45	71.4
Maine	13,728	12,208	88.9	357	100	28.0	26	6	23.1
Maryland	70,541	62,011	87.9	635	233	36.7	130		
Massachusetts	79,421	78,515	98.9	1,023	905	88.5	225	145	64.4
Michigan	129,387	121,419	93.8	4,336	414	9.5	157	45	28.7
Minnesota	70,579	59,710	84.6	2,682	1,286	47.9	30	30	100.0
Mississippi	41,301	40,898	99.0	432	337	78.0	65	65	100.0
Missouri	77,709	76,043	97.9	1,563	572	36.6	128	51	39.8

State/Territory (59)	# Live Births (49 reported)	# Screened (49 reported)	% Screened	# Referred (41 reported)	# Evaluated (41 reported)	% Evaluated	# Identified (47 reported)	# Enrolled (40 reported)	% Enrolled
Montana	11,526	10,100	87.6	8	9	112.5	7	4	57.1
Nebraska	26,443	26,104	98.7	902	805	89.2	32	17	53.1
Nevada	33,000	31,815	96.4	819					
New Hampshire	14,062	13,189	93.8	123	31	25.2	18	18	100.0
New Jersey	112,233	110,195	98.2	4,992	2,435	48.8	98	50	51.0
New Mexico	27,791	25,568	92.0	1,112		0.0	50	50	100.0
New York	254,491	240,577	94.5	1,527	311	20.4	65	56	86.2
North Carolina									
North Dakota	9,408	9,000	95.7	24	28	116.7	2	2	100.0
Ohio	145,228	110,869	76.3	5,884	1,158	19.7	136	136	100.0
Oklahoma	51,157	47,989	93.8	1,602	200	12.5	51	45	88.2
Oregon	46,376	42,876	92.5	870	532	61.1	47	5	10.6
Pennsylvania	144,899	139,201	96.1	1,472	567	38.5	105	72	68.6
Rhode Island	13,565	13,535	99.8	93	80	86.0	35	34	97.1
South Carolina	53,658	52,792	98.4	1,480	1,100	74.3	84	83	98.8
South Dakota	11,805	11,130	94.3	39	30	76.9	13	13	100.0
Tennessee	84,856	48,523	57.2	2,095	1,110	53.0	32	32	100.0
Texas	345,617	337,248	97.6	495	204	41.2	190		
Utah	51,835	50,349	97.1	418	290	69.4	68	45	66.2
Vermont	6,262	5,919	94.5	25	14	56.0	7	5	71.4
Virginia	101,748	99,246	97.5	3,015	2,458	81.5	86	68	79.1
Washington	79,504	69,958	88.0	196	147	75.0	96		
West Virginia	21,306	20,618	96.8	150	78	52.0	17	17	100.0
Wisconsin	69,014	65,608	95.1	1,317			19	19	100.0
Wyoming	6,238	6,118	98.1	22	22	100.0	17	17	100.0
American Samoa									
Guam	3,427	2,842	82.9	27	15	55.6	6	4	66.7
Mariana Islands									
Marshall Islands									
Micronesia									
Palau									
Puerto Rico									
Virgin Islands									

TABLE I. Summary of Infants Screened, Diagnosed, and Enrolled in Early Intervention, 1999 – 2004

Year	% Screened	% Diagnosed*	% Diagnosed Before Three Month of Age**	% Diagnostic LFU/LTD	# Number with Hearing Loss	% of Infants w. Hearing Loss Enrolled in EI	% of Infants Receiving EI Enrolled Before Six Months**
1999	46.5 (660,639) (n=22)	N/A	51.8 (4,221) (n=8)	48.2 (3,924) (n=8)	282 (n=9)	N/A	N/A
2000	52.1 (1,496,014) (n=44)	56.3 (10,124) (n=23)	77.6 (3,931) (n=11)	43.7 (7,859) (n=23)	855 (n=25)	83.7 (590) (n=17)	75.6 (446) (n=17)
2001	65.4 (2,115,869) (n=48)	55.7 (11,901) (n=27)	78.2 (4,622) (n=14)	44.3 (9,476) (n=27)	2,541 (n=35)	65.0 (891) (n=27)	69.7 (579) (n=24)
2002	82.9 (2,941,115) (n=47)	40.4 (17,254) (n=35)	69.5 (7,899) (n=26)	59.6 (25,469) (n=35)	2,553 (n=37)	64.0 (1,137) (n=30)	64.9 (531) (n=25)
2003	88.1 (3,417,964) (n=50)	55.2 (20,083) (n=37)	81.7 (10,671) (n=31)	44.8 (16,309) (n=37)	2,899 (n=44)	65.6 (1,702) (n=38)	67.4 (1,064) (n=35)
2004	91.8 (3,496,452) (n=49)	48.7 (25,376) (n=41)	75.7 (14,909) (n=36)	51.3 (26,704) (n=41)	3,600 (n=47)	65.3 (1,859) (n=40)	69.9 (1,277) (n=38)

Notes

EI, early intervention; LFU/LTD, loss to follow-up/loss to documentation; n, number of respondents; N/A, data not available

*Diagnosis data for 1999–2004 refer to the number of infants not passing the hearing screening that were estimated to have received a diagnostic audiologic evaluation.

**In 1999, data were only requested about the number of infants receiving a diagnostic evaluation before 3 months of age and the number of infants enrolled in EI before 6 months of age. No data were requested about the overall number that received a diagnostic evaluation or enrolled in EI.