

## Summary of 2022 National CDC EHDI Data

**Data Source:** 2022 CDC Early Hearing Detection and Intervention (EHDI) Hearing Screening and Follow-up Survey (HSFS)

**Background:** CDC's National Center on Birth Defects and Developmental Disabilities promotes the health of babies, children, and adults, with a focus on preventing birth defects and developmental disabilities and optimizing the health outcomes of people with disabilities. As part of these efforts, the Center is actively involved in addressing the early identification of infants who are deaf or hard of hearing (D/HH).

Between 1 and 2 per 1,000 infants in the United States are D/HH; when left undetected, being D/HH can delay a child's speech, language, social, and emotional development.<sup>1</sup> To ensure infants who are D/HH are identified as soon after birth as possible, states and territories have implemented Early Hearing Detection and Intervention (EHDI) programs. These EHDI programs work to ensure all infants

- Have hearing screened, ideally before 1 month of age.
- Receive diagnostic, audiologic evaluation (for those not passing the screening), ideally before 3 months of age.
- Are enrolled in early intervention (for those identified as D/HH), ideally before 6 months of age.<sup>2</sup>

The Hearing Screening and Follow-up Survey (HSFS) is a voluntary survey sent out annually by CDC to each jurisdictional EHDI program. It requests aggregated hearing information on infants born in a specified calendar year (e.g., 2022). The survey helps assess the progress of EHDI efforts to identify infants who are D/HH across the United States. This summary of the 2022 HSFS highlights EHDI-related information for babies born between January 1, 2022, and December 31, 2022.

Terminology in this document and subsequent 2022 HSFS summaries are based on current recommendations:<sup>2,3</sup>

- **Typical Hearing:** Hearing thresholds recorded within the normal range of hearing (-10 to 15 dB HL for children and -10 to 25 dB HL for adults) on an audiogram. Formerly, in previous HSFS summaries, CDC used "normal hearing."
- **Deaf or Hard of Hearing:** Reduced hearing/decreased hearing thresholds at birth obtained outside of the typical range of hearing. Formerly, in previous HSFS summaries, CDC used "permanent hearing loss."

**Number of Survey Respondents: 55** (49 states, 5 territories, 1 district) AK, American Samoa, AZ, AR, CA, CO, Commonwealth of the Northern Mariana Islands, CT, DE, District of Columbia, FL, GA, Guam, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, Palau, PA, Puerto Rico, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY

<sup>1</sup>American Speech-Language-Hearing Association (ASHA). Effects of hearing loss on development. Available at: <https://www.asha.org/public/hearing/effects-of-hearing-loss-on-development>. Accessed April 8, 2022

<sup>2</sup>Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs (2019). *Journal of Early Hearing Detection and Intervention*, 4(2), 1–44. <https://digitalcommons.usu.edu/jehdi/vol4/iss2/1/>

<sup>3</sup>Recommended Terminology When Referring to Hearing Differences [PDF]. (2023). *Educational Audiology Associations*. [RecommendedTerminology2023.pdf](https://www.edaud.org/RecommendedTerminology2023.pdf) (edaud.org)

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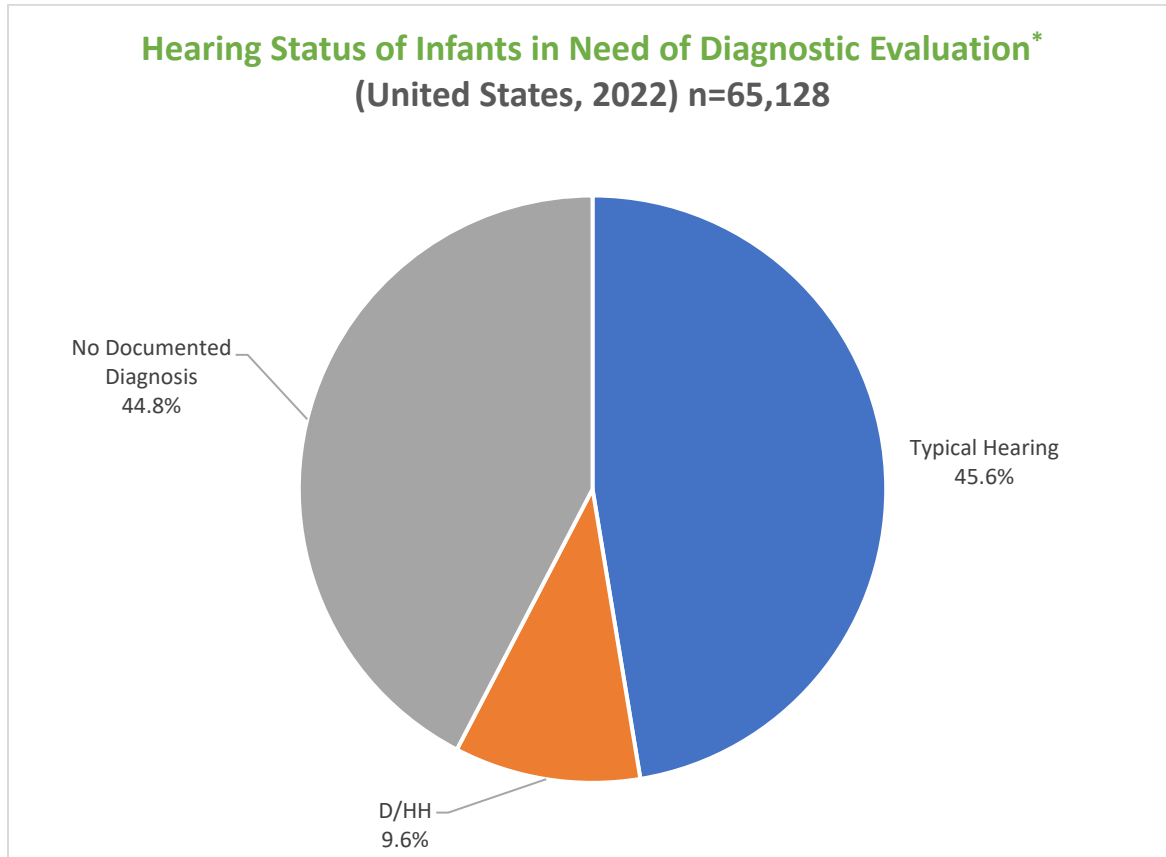
2022 Documented EHDI Data Items	
Total Occurrent Births ( <i>according to state and territorial EHDI programs</i> )	<b>3,616,776</b>
<b>Documented Hearing Screening</b>	
Percent Screened (among births)	<b>98.1%</b> (n=3,547,774) (Range across jurisdictions: 81.2%–100.0%)
○ Percent Screened ( <i>excluding infant deaths and parental refusals</i> )	98.7%
○ Percent Screened before 1 Month of Age (among births)	95.6% (n=3,455,915)
○ Percent Not Passing Final / Most Recent Screening (among screened infants)	1.8% (n=62,508)
<b>No Documented Hearing Screening</b>	
Percent with No Documented Screening	<b>1.9%</b> (n=69,002)
<b>Documented Diagnosis (among not passed screen + not screened because referred straight to diagnostic evaluation)</b>	
Percent Diagnosed	<b>55.2%</b> (n=35,940) (Range across jurisdictions: 9.2%–96.6%)
○ Percent with Typical Hearing ( <i>including transient hearing loss cases</i> )	45.6% (n=29,668)
○ Percent Confirmed Deaf or Hard of Hearing (D/HH)	<b>9.6%</b> (n=6,272)
○ Percent Diagnosed ( <i>typical hearing + transient hearing loss + confirmed D/HH</i> ) before 3 Months of Age	39.9% (n=25,968)
Prevalence of Confirmed D/HH	<b>1.7 per 1,000 births</b>
<b>No Documented Diagnosis (among not passed screen + not screened because referred straight to diagnostic evaluation)</b>	
Percent with No Documented Diagnosis	<b>44.8%</b> (n=29,188)
○ Audiological Diagnosis in Process	2.1% (n=1,371)
○ Infant Died	0.7% (n=467)
○ Parents / Family Declined	3.2% (n=2,064)
○ Non-Resident / Moved	3.0% (n=1,961)
○ Percent Loss to Follow-up (LFU) / Loss to Documentation (LTD) for Diagnosis ▪ LFU/LTD = # Parents/Family Contacted but Unresponsive (5,800) + # Unable to Contact (3,960) + # Unknown (12,386)	<b>34.0%</b> (n=22,146) (Range: 0.0%–83.2%)
<b>Other Cases of Infants who are D/HH</b>	
Number of Additional Cases ( <i>e.g., late-onset hearing loss, infants not screened at birth</i> )	n=403
<b>Documented Referral to Early Intervention (EI) (among those diagnosed as D/HH)</b>	
Percent Referred to Part C EI	86.8% (n=5,445)
<b>Documented Enrollment in EI (among those diagnosed as D/HH)</b>	
Percent Enrolled in EI ( <i>Part C and Non-Part C</i> ) ○ Enrolled in EI = # in Part C EI (3,651) + # in Non-Part C EI (132)	<b>60.3%</b> (n=3,783) (Range across jurisdictions: 0.0% - 100.0%)
○ Percent Enrolled in EI before 6 Months of Age ( <i>Part C and Non-Part C</i> )	<b>40.9%</b> (n = 2,564)
<b>No Documented Enrollment in EI (among those diagnosed as D/HH)</b>	
Percent with No Documented EI Services	<b>39.7%</b> (n=2,489)
○ Infant Died	1.0% (n=60)
○ Parents/Family Declined	9.2% (n=578)
○ Non-Resident/Moved	2.6% (n=163)
○ Not Eligible for Part C Services	1.0% (n=62)
○ Percent Loss to Follow-up (LFU) / Loss to Documentation (LTD) for EI ▪ LFU/LTD = # Parents/Family Contacted but Unresponsive (137) + # Unable to Contact (297) + # Unknown (786)	<b>19.5%</b> (n=1,220) (Range across jurisdictions: 0.0%–92.6%)

**Notes:**

Click on gray category headings to be directed to pages 5–7 for an explanation of the calculations for the EHDI data items.

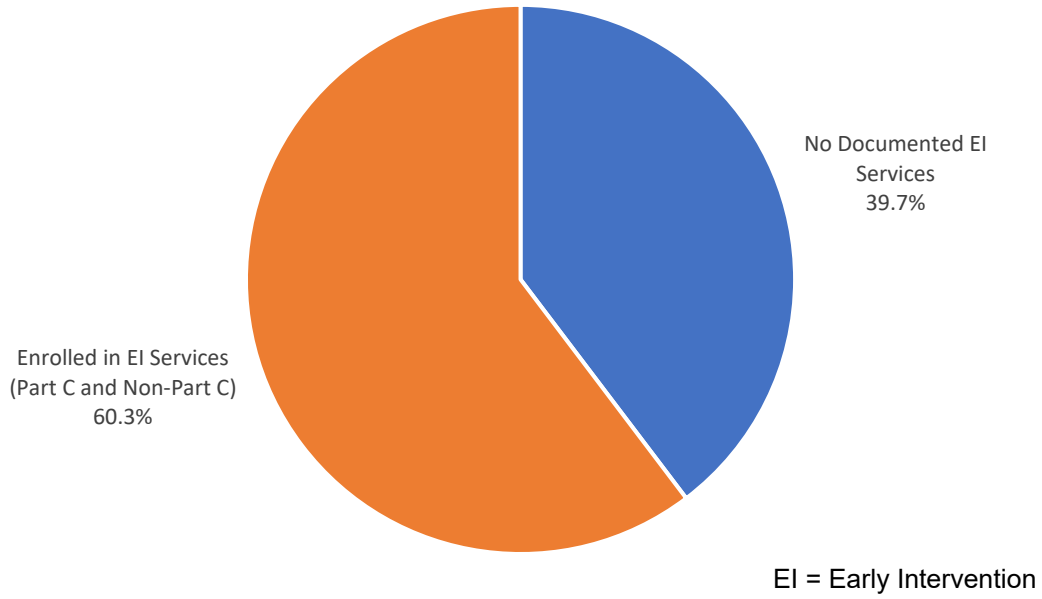
## Summary of 2022 National CDC EHDI Data

For summaries by jurisdiction, visit [www.cdc.gov/ncbddd/hearingloss/ehdi-data.html](http://www.cdc.gov/ncbddd/hearingloss/ehdi-data.html)



\*Infants in need of diagnostic evaluation includes infants not passing the hearing screen and infants who missed the hearing screen due to being referred straight to diagnostic evaluation.

**Documented Intervention Status of Infants who are D/HH**  
**(United States, 2022) Total Infants who are D/HH=6,272**



## Summary of 2022 National CDC EHDI Data

### Explanation of 2022 EHDI Data Item Calculations (*from page 1*)

#### Data Notes

- Hearing Screening and Follow-up Survey data reflect information that states and territories have reportedly **documented** without estimation. As a result, data reported by CDC EHDI may differ from other sources.
- Some respondents provided only partial data (e.g., hearing screening data only). As a result, the number of reporting states and territories and denominators varies for some of the data sections.
- **Audiological Diagnosis in Process:** Respondents were advised that to be reported in this category, each infant must have been seen for diagnostic evaluation at least one time and have a follow-up appointment already scheduled.
- **LFU (Loss to Follow-up) / LTD (Loss to Documentation):** Subgroup of “No Documented Diagnosis / Undetermined” and “No Intervention Services / Undetermined” includes cases where infants’ families were *Contacted but Unresponsive, Unable to Contact, and Unknown*.

#### Documented Hearing Screening (55 jurisdictions)

Percent Screened

$3,547,774$  (# screened) /  $3,616,776$  (# occurrent births reported by EHDI programs) x 100 = 98.1%

Percent Screened (excluding infant deaths and parental refusals)

$3,547,774$  (# screened) /  $3,595,127$  (# occurrent births excluding infant deaths [10,869] and parental refusals [10,780]) x 100 = 98.7%

Percent Screened Before 1 Month of Age

$3,455,915$  (# pass before 1 month + # not pass before 1 month) /  $3,616,776$  (# total occurrent births reported by EHDI programs) x 100 = 95.6%

Percent Not Passing final / most recent hearing screening

$62,508$  (# not pass) /  $3,547,774$  (# screened) x 100 = 1.8%

*For source of numbers used in these calculations, see “2022 Summary of Hearing Screening Among Total Occurrent Births” and “2022 Summary of Infants Screened Before 1 Month of Age” on [CDC EHDI webpage](#).*

#### No Documented Hearing Screening (55 jurisdictions)

Percent with No Documented Hearing Screening

$69,002$  (# with no documented screening) /  $3,616,776$  (# occurrent births reported by EHDI programs) x 100 = 1.9%

*For source of numbers used in these calculations, see “2022 Summary of Reasons for No Documented Hearing Screening Among Total Occurrent Births” on [CDC EHDI webpage](#).*

#### Documented Diagnosis (among not passed screen; 54 jurisdictions)

Percent Diagnosed

$35,940$  (# with documented diagnosis) /  $65,128$  (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 55.2%

## Summary of 2022 National CDC EHDI Data

### Percent with Typical Hearing

29,668 (# with typical hearing [27,235] + # transient hearing loss [2,433]) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 45.6%

### Percent Confirmed D/HH

6,272 (# confirmed D/HH) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 9.6%

### Percent Diagnosed Before 3 Months of Age

25,968 (# with typical hearing before 3 months [22,063] + # confirmed D/HH before 3 months [3,905]) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 39.9%

### Prevalence of Confirmed D/HH

6,272 (# confirmed D/HH) / 3,616,619 (# occurrent births reported by EHDI programs) x 1,000 = 1.7 per 1,000 births

For source of numbers used in these calculations, see “2022 Summary of Diagnostics Among Infants Not Passing Hearing Screening” and “2022 Summary of Infants Not Passing Hearing Screening Diagnosed Before 3 Months of Age” on [CDC EHDI webpage](#).

### **No Documented Diagnosis (among not passed screen; 54 jurisdictions)**

Percent with No Documented Diagnosis (of those not passing hearing screen and not screened because referred straight to diagnostic evaluation)

29,188 (# with no documented diagnosis) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 44.8%

### Percent Audiological Diagnosis in Process

1,371 (# audiological diagnosis in process) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 2.1%

### Percent Infant Died

467 (# infant died) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 0.7%

### Percent Parents/Family Declined Services

2,064 (# parents/family declined services) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 3.2%

### Percent Non-Resident or Moved Out of Jurisdiction

1,961 (# non-resident + # moved out of jurisdiction) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 3.0%

### Percent LFU/LTD for Diagnosis (i.e., Unable to Contact / Unresponsive / Unknown)

22,146 (# unable to contact [3,960] + # unresponsive [5,800] + # unknown [12,386]) / 65,128 (# not pass screen [62,508] + not screened because referred straight to diagnostic evaluation [2,620]) x 100 = 34.0%

For source of numbers used in these calculations, see “2022 Summary of Reasons for No Documented Diagnosis Among Infants Not Passing Screening” on [CDC EHDI webpage](#).

### **Documented Referral to EI (among those diagnosed as D/HH; 54 jurisdictions)**

Percent Referred to Part C EI

5,445 (# referred to Part C EI) / 6,272 (# confirmed D/HH) x 100 = 86.8%

## Summary of 2022 National CDC EHDI Data

For source of numbers used in these calculations, see “2022 Summary of Infants Identified as Deaf or Hard of Hearing Enrolled in Early Intervention (EI) Before 6 Months of Age” on [CDC EHDI webpage](#).

### **Documented Enrollment in EI (among those diagnosed as D/HH; 54 jurisdictions)**

Percent Enrolled in EI (Part C and Non-Part C)

$3,783$  (# enrolled in Part C [3,651] + # in non-Part C EI [132]) /  $6,272$  (# confirmed D/HH) x 100 = 60.3%

Percent Enrolled in EI before 6 Months of Age (Part C and Non-Part C)

$2,564$  (# enrolled in Part C EI before 6 months [2,500] + # in Non-Part C EI before 6 Months [64]) /  $6,272$  (# confirmed D/HH) x 100 = 40.9%

For source of numbers used in these calculations, see “2022 Summary of Early Intervention (EI) Among Infants Identified as Deaf or Hard of Hearing” and “2022 Summary of Infants Identified as Deaf or Hard of Hearing Enrolled in Early Intervention (EI) Before 6 Months of Age” on [CDC EHDI webpage](#).

### **No Documented Enrollment in EI (among those diagnosed as D/HH; 54 jurisdictions)**

Percent with No Documented EI Services

$2,489$  (# not receiving any EI services) /  $6,272$  (# confirmed D/HH) x 100 = 39.7%

Percent Infant Died

$60$  (# infant died) /  $6,272$  (# confirmed D/HH) x 100 = 1.0%

Percent Parents/Family Declined

$578$  (# parents/family declined) /  $6,272$  (# confirmed D/HH) x 100 = 9.2%

Percent Non-Resident / Moved

$163$  (# non-resident + # moved out of jurisdiction) /  $6,272$  (# confirmed D/HH) x 100 = 2.6%

Percent Not Eligible for Part C Services

$62$  (# not eligible for Part C services) /  $6,272$  (# confirmed D/HH) x 100 = 1.0%

Percent LFU/LTD for EI

$1,220$  (# unable to contact [297] + # unresponsive [137] + # unknown [786]) /  $6,272$  (# confirmed D/HH) x 100 = 19.5%

For source of numbers used in these calculations, see “2022 Summary of Reasons for No Documented Early Intervention (EI) Services Among Infants Identified as Deaf or Hard of Hearing” on [CDC EHDI webpage](#).