EHDI Demographic Data: Overview of Results and Future Direction

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Atlanta, GA
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Overview

- Background
- Hearing Screening and Follow-up Survey (HSFS)
- Demographic Data: Analysis and Key Findings
- Data Challenges
- Future Direction
Background
EHDI in the U.S.

- All jurisdictions have an EHDI Information System (EHDI-IS)
  - Ensure infants receiving services
  - Loss to follow-up (LFU) / loss to documentation (LTD)
  - Reporting diagnostic and intervention data usually not required
  - Variation in systems

- CDC’s role
  - Support development of EHDI-IS
  - Promote data standardization
  - Collect annual data
CDC EHDI Hearing Screening and Follow-Up Survey
Hearing Screening and Follow-up Survey (HSFS)

- Approved by Federal Office of Management and Budget
- Available data 2005-2014
- Annual and voluntary survey
- Aggregate data
- Two-year reporting interval
2014 CDC EHDI

Hearing Screening and Follow-up Survey (HSFS)*

<table>
<thead>
<tr>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>E-mail</td>
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<tr>
<td>Confirm E-mail</td>
</tr>
<tr>
<td>State/Territory</td>
</tr>
</tbody>
</table>

Note: Please select the Type and Severity system that was used to classify cases of permanent hearing loss for infants born in calendar year 2014 by clicking the orange box below and using the dropdown menu for your selection. You will not be able to complete the survey until you select either the "ASHA" or "DSHPHWA" option.

Click Here to Select Type and Severity System

The following navigation bar is available on all worksheets. The underlined tab indicates the current sheet.

Click on a tab to jump to the corresponding sheet.
HSFS Part 3: Demographics

- Variables reported:
  - Infant Gender
  - Maternal Age
  - Maternal Education
  - Maternal Ethnicity
  - Maternal Race
Demographic Data: Analysis
### TABLE 2. Percentage of Infants diagnosed after failed hearing screening, by maternal age, education and race (CDC Hearing Screening and Follow-Up Survey, United States, 2009-2010)

<table>
<thead>
<tr>
<th>Maternal characteristics</th>
<th>% of infants diagnosed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maternal age (yrs)</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;15</td>
<td>28%</td>
</tr>
<tr>
<td>15-19</td>
<td>43%</td>
</tr>
<tr>
<td>20-24</td>
<td>45%</td>
</tr>
<tr>
<td>25-34</td>
<td>55%</td>
</tr>
<tr>
<td>35-50</td>
<td>59%</td>
</tr>
<tr>
<td>&gt;50</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Maternal education</strong></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>45%</td>
</tr>
<tr>
<td>High School</td>
<td>49%</td>
</tr>
<tr>
<td>Some college/Associate's degree</td>
<td>56%</td>
</tr>
<tr>
<td>College graduate or higher</td>
<td>71%</td>
</tr>
<tr>
<td><strong>Maternal race</strong></td>
<td></td>
</tr>
<tr>
<td>White Non-Hispanic</td>
<td>57%</td>
</tr>
<tr>
<td>Black Non-Hispanic</td>
<td>45%</td>
</tr>
<tr>
<td>Asian</td>
<td>57%</td>
</tr>
<tr>
<td>Hawaiian or Pacific Islander</td>
<td>24%</td>
</tr>
<tr>
<td>Amer. Indian or Alaskan Native</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Key finding:**

- The demographic data indicate that some groups are more likely to have infants that become LFU/LTD.

Ongoing work on recent data

- **Purpose**
  - Are more jurisdictions reporting complete demographic data?
  - What does recent demographic data suggest?

- **Things to note:**
  - Usually most challenging part of survey is Part 3
  - Limitations with HSFS data
  - Data cleaning
Methodology

- Inclusion criteria:
  - **Step 1:** include jurisdictions that reported 100% gender for screening data
  - **Step 2:** include jurisdictions with no difference in total births reported in Part 1 (Screening) and Part 3 (Demographics)
  - **Step 3:** include jurisdictions with less than 20% of infants reported as “Unknown” for each category
Percentage of Total Reported Births (2014)

by Gender
- Female: 51%
- Male: 49%

by Maternal Age (in years)
- Less than 20: 16%
- 20-34: 57%
- 25-34: 16%
- 35 or older: 5%

by Maternal Education
- Less than high school: 31%
- High School/GED: 22%
- Some college/Associate’s degree: 19%
- College Graduate or higher: 28%
Percentage of Total Reported Births (2014)

by Maternal Ethnicity
- Non-Hispanic: 77%
- Hispanic: 23%

by Maternal Race
- White Non-Hispanic: 61%
- White Hispanic: 12%
- Black Non-Hispanic: 13%
- Black Hispanic: 6%
- Asian: 3%
- Native Hawaiian or Pacific Islander: 1%
- American Indian or Alaskan Native: 3%
- Other: 1%
Demographic Data: Key Findings (2014)
• There were significant differences in the percentages of infants screened, diagnostically evaluated and enrolled in intervention, in 2014, by maternal age, maternal education, maternal ethnicity and maternal race.
Percentage of Infants Enrolled in EI After Diagnosed with Hearing Loss, by Maternal Age (in years)

- Less than high school
- High School
- Some college/Associate's degree
- College graduate or higher

p < 0.0001

Percentage of Infants Enrolled in EI After Diagnosed with Hearing Loss, by Maternal Education

- Less than high school
- High School
- Some college/Associate's degree
- College graduate or higher

p = 0.0006
### Key finding:
- The demographic data indicate that some groups are more likely to have infants that become LFU/LTD.

#### Percentage of Infants Diagnosed After Failed Hearing Screening

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% of infants diagnosed</th>
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<tbody>
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</tr>
<tr>
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<td>50%</td>
</tr>
<tr>
<td>25-34</td>
<td>58%</td>
</tr>
<tr>
<td>≥35</td>
<td>52%</td>
</tr>
<tr>
<td><strong>Maternal education</strong></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>58%</td>
</tr>
<tr>
<td>High School</td>
<td>57%</td>
</tr>
<tr>
<td>Some college/ Associate's degree</td>
<td>64%</td>
</tr>
<tr>
<td>College graduate or higher</td>
<td>71%</td>
</tr>
<tr>
<td><strong>Maternal race</strong></td>
<td></td>
</tr>
<tr>
<td>White Non-Hispanic</td>
<td>59%</td>
</tr>
<tr>
<td>White Hispanic</td>
<td>44%</td>
</tr>
<tr>
<td>Black Non-Hispanic</td>
<td>47%</td>
</tr>
<tr>
<td>Black Hispanic</td>
<td>30%</td>
</tr>
<tr>
<td>Asian</td>
<td>75%</td>
</tr>
<tr>
<td>Hawaiian or Pacific Islander</td>
<td>27%</td>
</tr>
<tr>
<td>Am. Indian or Alaskan Native</td>
<td>34%</td>
</tr>
<tr>
<td>Other</td>
<td>44%</td>
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*CDC EHDI HSFS 2014*
Data Challenges
Potential Limitations of HSFS Data

- Reporting this aggregate data is voluntary
  - Respondents may vary by survey year
- Regulations requiring report of data vary by jurisdiction
  - May be unable to respond
  - May respond with incomplete data
- Potential lack of standardization in data reporting
Future Direction
Activities at CDC EHDI

- Support development of EHDI-IS
  - data consistency, accuracy and completeness
- Continue to offer technical assistance to jurisdictions
- Use the annual HSFS to support EHDI goals
- Use demographic data to identify program successes and potential areas of improvement
- Visualization of demographic data
Thank you!

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For more information, contact CDC
1-800-CDC-INFO (232-4636)

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.