Minnesota Early Hearing Detection & Intervention Annual Report for 2011 Data
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Indicator 7.1: Minnesota’s plan to develop and implement this system

Glossary

MDH Contact Information
Minnesota Early Hearing Detection and Intervention Program

The Minnesota Newborn Screening Program screens all infants born in the state for a variety of disorders. In 2007, Minnesota Statute section 144.966 mandated the reporting of newborn hearing screening results and added hearing loss to the panel of more than 50 disorders.

This legislation required all hospitals to establish an Early Hearing Detection and Intervention (EHDI) program. The EHDI program shall:

- **Provide** to the newborn’s parent(s) information concerning the nature of the screening procedure, applicable costs of the screening procedure, the potential risks and effects of hearing loss, and the benefits of early detection and intervention in advance of any hearing screening testing

- **Comply** with the same parental consent requirements as is used for the other newborn screening program

- **Develop** policies and procedures for screening and rescreening based on the Minnesota Department of Health (MDH) recommendations

- **Provide** appropriate training and monitoring of individuals responsible for performing hearing screening tests as recommended by MDH

- **Test** the newborn’s hearing prior to discharge, or, if the newborn is expected to remain in the hospital for a prolonged period, testing shall be performed prior to three months of age or when medically feasible

- **Develop** and implement procedures for documenting the results of all hearing screening tests

- **Inform** the newborn’s parent(s), primary care physician, and MDH personnel the results of the hearing screening test or rescreening if conducted, or if the infant was not successfully tested, according to MDH recommendations. The hospital that discharges the newborn home is responsible for the screening
This same legislation created the Newborn Hearing Screening Advisory Committee. The committee is intended to function in an advisory capacity to the MDH program managers in Newborn Screening and the Children and Youth with Special Health Needs (CYSHN) subject areas and, ultimately, to the Commissioner of Health.

The members of the Newborn Hearing Screening Advisory Committee are responsible for:

- **Developing** protocols and timelines for screening, rescreening, and diagnostic audiological assessment and early medical, audiological, and educational intervention services for children who are deaf or hard-of-hearing
- **Designing** protocols for tracking children from birth through age three that may have passed newborn screening but are at risk for delayed or late onset of permanent hearing loss
- **Designing** a technical assistance program to support facilities implementing the screening program and facilities conducting rescreening and diagnostic audiological assessment
- **Designing** implementation and evaluation of a system of follow-up and tracking
- **Evaluating** program outcomes to increase effectiveness and efficiency and ensure culturally appropriate services for children with a confirmed hearing loss and their families

The Newborn Hearing Screening Advisory Committee has established the following EHDI goals, indicators, and benchmarks (Approved May 2010, August 2010, and November 2010). This information is based on the national goals, program objectives, and performance measures for the Early Hearing Detection and Intervention Tracking and Surveillance System from the Center for Disease Control (CDC).
Goal 1. All newborns will be screened for hearing loss.

Indicator 1.1
Percent of infants screened for hearing loss.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>98.1%</td>
<td>98.4%</td>
<td>98.9%</td>
<td>99.4%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>98.4%</td>
<td>98.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NBaseline (from 2009) = 97.9%

Numerator
All infants reported as screened for hearing loss

Denominator
All infants born in Minnesota (MN) minus those that are deceased and those whose parent(s) declined hearing screening
Goal 1. All newborns will be screened for hearing loss.

Indicator 1.2
Percent of infants screened for hearing loss before 1 month of age. *this indicator excludes infants <1800 grams

Numerator
All infants reported as screened for hearing loss before 30 days of age minus babies <1800 grams

Denominator
All infants born in MN minus babies <1800 grams, those that are deceased, and those whose parent(s) declined hearing screening
Goal 1. All newborns will be screened for hearing loss.

Indicator 1.3
Percent of infants <1800 grams screened for hearing loss before 4 months of age.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>81.7%</td>
<td>82%</td>
<td>86%</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>87.9%</td>
<td>97.1%</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*NBaseline (from 2009) = 81.5%

Numerator
All infants <1800 grams reported as screened for hearing loss before 4 months of age

Denominator
All infants born in MN <1800 grams minus those that are deceased and those whose parent(s) declined hearing screening
Goal 1. All newborns will be screened for hearing loss.

Indicator 1.4
Percent of infants that did not pass initial hearing screening (given a “REFER”).

Numerator
All infants that did not pass initial hearing screening in one or both ears that were reported as REFER

Denominator
All infants reported as screened for hearing loss

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>5.9%</td>
<td>5.6%</td>
<td>5.1%</td>
<td>4.6%</td>
<td>4.1%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Actual</td>
<td>5.9%</td>
<td>5.5%</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 6.1%
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.1
Percent of infants given a REFER on initial hearing screening that were rescreened within 1 month of age. *this indicator excludes infants <1800 grams

Numerator
Infants with a REFER result on initial hearing screening that were rescreened (PASS or REFER result) within 1 month of age

Denominator
All infants >1800 grams with a REFER result on initial hearing screening with a rescreen result
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.2
Percent of infants who have a REFER on hearing rescreen and who received a comprehensive audiological evaluation by 3 months of age. *this indicator excludes infants <1800 grams

**Numerator**
Infants with a REFER result on hearing rescreen and a documented audiological evaluation within 3 months of age

**Denominator**
All infants >1800 grams with REFER results on hearing rescreen
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.3
Percent of all infants with a REFER on hearing screening who were lost to follow-up.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>13%</td>
<td>12%</td>
<td>8.5%</td>
<td>5%</td>
<td>1.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Actual</td>
<td>10.8%</td>
<td>6.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Numerator
All infants in “closed” status assigned codes NBNOAUDIO, NBNOSHOW, and NBNORESC

*Denominator
All infants reported as REFER

*See glossary for definition of codes
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.4
Percent of infants with a REFER on hearing screening who were lost to follow-up. *this indicator is for infants >1800 grams

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>13%</td>
<td>10.4%</td>
<td>7.8%</td>
<td>5.2%</td>
<td>2.6%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>13.9%</td>
<td>8.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NBaseline (from 2009) = 13.9%

**Numerator**
Infants >1800 grams in “closed” status assigned codes NBNOAUDIO, NBNOSHOW, and NBNORESC

**Denominator**
Infants >1800 grams reported as REFER

*See glossary for definition of codes
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.5
Percent of infants with a REFER on hearing screening who were lost to follow-up. *this indicator is for infants <1800 grams

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>16%</td>
<td>12.8%</td>
<td>9.6%</td>
<td>6.4%</td>
<td>3.2%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>16.6%</td>
<td>6.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 16.6%

Numerator
All infants <1800 grams in “closed” status assigned codes NBNOAUDIO, NBNOSHOW, and NBNORESC

Denominator
Infants <1800 grams reported as REFER

*See glossary for definition of codes
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.6
Percent of all infants with a REFER on hearing screening who were lost to documentation.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>5.6%</td>
<td>5%</td>
<td>3.5%</td>
<td>2%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Actual</td>
<td>3.4%</td>
<td>3.4%</td>
<td></td>
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</tr>
</tbody>
</table>

*NBaseline (from 2009) = 6.2%

Numerator
All infants in “closed” status assigned codes PCPUN, PCPNOCO, and NBDXPRO

Denominator
All infants reported as REFER

*See glossary for definition of codes
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.7
Percent of infants with a REFER on hearing screening who were lost to documentation.
*this indicator is for infants >1800 grams

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>5%</td>
<td>3.8%</td>
<td>2.6%</td>
<td>1.4%</td>
<td>0.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Actual</td>
<td>6.2%</td>
<td>3.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 6.2%

Numerator
Infants >1800 grams in “closed” status assigned codes PCPUN, PCPNOCO, and NBDXPRO

Denominator
Infants >1800 grams reported as REFER

*See glossary for definition of codes
Goal 2. All infants who do not pass hearing screening will have a diagnostic audiologic evaluation before 3 months of age.

Indicator 2.8
Percent of infants with a REFER on hearing screening who were lost to documentation.
*this indicator is for infants <1800 grams

Numerator
Infants <1800 grams in “closed” status assigned codes PCPUN, PCPNOCO, and NBDXPRO

Denominator
Infants <1800 grams reported as REFER

*See glossary for definition of codes
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.1
Percent of infants with hearing loss who received an Ear, Nose & Throat (ENT) and/or Otolaryngology (ORL) evaluation by 4 months of age.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>40.2%</td>
<td>46%</td>
<td>62%</td>
<td>74%</td>
<td>86%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>44%</td>
<td>48.7%</td>
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</tr>
</tbody>
</table>

*N=Baseline (from 2009) = 35.6%

Numerator
All infants with permanent confirmed hearing loss (PCHL) that have been evaluated by ENT/ORL by 4 months of age

Denominator
All infants reported with a congenital PCHL minus those infants whose parent(s) declined ENT/ORL evaluation
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.2
Percent of infants with hearing loss who received a genetics evaluation by 1 year of age.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>21.8%</td>
<td>30%</td>
<td>45%</td>
<td>60%</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>16%</td>
<td>27.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 13.6%

**Numerator**
All infants with PCHL that have received a genetics evaluation by 1 year of age

**Denominator**
All infants reported with a congenital PCHL minus those infants whose parent(s) declined genetics evaluation
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

**Indicator 3.3**
Percent of infants with hearing loss who received a pediatric ophthalmology evaluation by 6 months of age.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>22%</td>
<td>30%</td>
<td>45%</td>
<td>60%</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>10%</td>
<td>11.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 15.3%

**Numerator**
All infants with PCHL that have received a pediatric ophthalmology evaluation by 6 months of age

**Denominator**
All infants reported with a congenital PCHL minus those infants whose parent(s) declined ophthalmology evaluation
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.4
Percent of infants fitted with personal amplification within 1 month of PCHL diagnosis.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>22%</td>
<td>30%</td>
<td>45%</td>
<td>60%</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>44%</td>
<td>23.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NBaseline (from 2009) = 15.3%*

**Numerator**
All infants with PCHL that have had amplification fitted within 1 month of diagnosis

**Denominator**
All infants that have been offered amplification by an audiologist and have not declined amplification
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.5
Percent of infants/children ages 0-3 years with a reported PCHL (congenital or late onset) who were reported to be enrolled in Part C Help Me Grow.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>42%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>67%</td>
<td>67.3%</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*NBaseline (from 2009) = 22%

Numerator
All infants/children ages 0-3 years with a reported congenital or late onset PCHL who were eligible for, and enrolled in, Part C Help Me Grow Early Intervention services

Denominator
All infants/children ages 0-3 years with a reported congenital or late onset PCHL minus those whose parent(s) declined Part C Help Me Grow Early Intervention services
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.6
Percent of infants with a reported congenital PCHL and reported as enrolled in Part C Help Me Grow services, who were enrolled before 6 months of age.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>71%</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>53%</td>
<td>70.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NBaseline (from 2009) = 69%

Numerator
All infants with a reported congenital PCHL who were reported enrolled in Part C/Help Me Grow services before 6 months of age

Denominator
All infants with a reported congenital PCHL identified through hearing screening who were reported as enrolled in Part C Help Me Grow
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.7
Percent of infants/children ages 0-3 years with a reported PCHL (congenital or late onset) who were reported as enrolled in any early intervention program (Part C Help Me Grow or private services).

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>42%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>70%</td>
<td>67.3%</td>
<td></td>
<td></td>
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</tbody>
</table>

*Numeratord
All infants/children ages 0-3 years with a reported congenital or late onset PCHL who were enrolled in Part C Help Me Grow OR private early intervention services

Denominator
All infants/children ages 0-3 years with a reported congenital or late onset PCHL minus those whose parent(s) declined early intervention services
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.8
Percent of infants with a reported congenital PCHL and reported as enrolled in any early intervention services, who were enrolled before 6 months of age (Part C Help Me Grow or private services).

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>53%</td>
<td>70.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NBaseline (from 2009) = 70%

Numerator
All infants with a reported congenital PCHL who were enrolled in either Part C/Help Me Grow services OR private early intervention services before 6 months of age

Denominator
All infants with a reported congenital PCHL identified through hearing screening who were reported as enrolled in any early intervention program
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.9
Percent of infants/children ages 0-3 years with a reported PCHL (congenital or late onset) who were reported enrolled in any early intervention program (Part C Help Me Grow or private services) within 2 months of confirmation of hearing loss.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>36%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>37%</td>
<td>54.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*N Baseline (from 2009) = 11%

**Numerator**
All infants/children ages 0-3 years with a reported congenital or late onset PCHL who were enrolled in either Part C Help Me Grow OR private early intervention services within 2 months of confirmation of hearing loss

**Denominator**
All infants/children ages 0-3 years with a reported congenital or late onset PCHL who were reported as enrolled in any early intervention program
Goal 3. All infants with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiologic, and early intervention).

Indicator 3.10
Percent of families of infants/children ages 0-3 years with reported PCHL (congenital or late onset) who received direct family-to-family support (i.e. phone call, personal contact) within 1 month of confirmation of their child’s hearing loss.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>32%</td>
<td>35%</td>
<td>55%</td>
<td>70%</td>
<td>85%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>24%</td>
<td>22%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Near baseline (from 2009) = 29%

Numerator
All infants/children ages 0-3 years with a reported congenital or late onset PCHL whose families were directly contacted by MN Hands and Voices (family-to-family support organization) within 1 month of confirmation of hearing loss

Denominator
All infants/young children ages 0-3 years with a reported congenital or late onset PCHL minus those whose parent(s) declined family-to-family support contact
Goal 4. All infants and children with late onset, progressive, or acquired hearing loss will be identified at the earliest possible time.

*Indicator 4.1*
Percent of infants and children identified with late onset, progressive, or acquired hearing loss.
*there are no benchmarks associated with this target*

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BENCHMARK</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>ACTUAL</strong></td>
<td>9%</td>
<td>6.6%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Numerator*
All infants/children with an initial PASS hearing screen result but have CONFIRMED HEARING LOSS

*Denominator*
All infants and children reported as PCHL reported within 1 year and born after 9/1/2007 (implementation of mandate)
Goal 5. All infants with hearing loss will have a medical home as defined by the American Academy of Pediatrics.

Indicator 5.1
Percent of infants/children that have a primary care provider at the time of PCHL diagnosis.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>97.2%</td>
<td>97.5%</td>
<td>98%</td>
<td>99%</td>
<td>99.5%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>99%</td>
<td>98.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NBaseline (from 2009) = 96.9%

Numerator
All infants/children with PCHL and primary care provider has been confirmed during initial confirmation call-out

Denominator
All infants/children reported with PCHL
Goal 6. Minnesota will have a complete EHDI tracking and surveillance system that will minimize loss to follow-up.

Indicator 6.1
Documentation of percent of hearing screening results matched with vital records.

**Numerator**
All infants with hearing screening results that were matched with vital records

**Denominator**
All infants born in MN minus those infants whose parent(s) declined hearing screening

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>99.6%</td>
<td>99.7%</td>
<td>99.8%</td>
<td>99.9%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>99.4%</td>
<td>99.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 99.5%
Goal 6. Minnesota will have a complete EHDI tracking and surveillance system that will minimize loss to follow-up.

Indicator 6.2
Percent of audiology reports received by MDH within 10 days of appointment.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmark</strong></td>
<td>78%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>83.2%</td>
<td>84.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*N Baseline (from 2009) = 76.4%

**Numerator**
All audiology reports received by MDH <10 days from appointment

**Denominator**
All audiology reports received by MDH
Goal 6. Minnesota will have a complete EHDI tracking and surveillance system that will minimize loss to follow-up.

Indicator 6.3
Percent of infants who had incomplete or unreported hearing screening.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>2.3%</td>
<td>2.1%</td>
<td>1.6%</td>
<td>1.1%</td>
<td>0.6%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Actual</strong></td>
<td>2.1%</td>
<td>1.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*N*Baseline (from 2009) = 2.6%

**Numerator**
All infants with incomplete or unreported hearing screens minus those that are deceased and those whose parent(s) declined hearing screening

**Denominator**
All infants born in MN minus those that are deceased and those whose parent(s) declined hearing screening
Goal 6. Minnesota will have a complete EHDI tracking and surveillance system that will minimize loss to follow-up.

Indicator 6.4
Percent of requested follow-up reports received from audiologists identified as caring for infants/children with PCHL.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>65%</td>
<td>70%</td>
<td>75%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>75%</td>
<td>95.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 61.5%

Numerator
Number of requested follow-up reports submitted by audiologists identified as caring for an infant/child with PCHL

Denominator
Total number of follow-up reports/fax-back information requested from audiologists identified as caring for infant/child with PCHL
Goal 6. Minnesota will have a complete EHDI tracking and surveillance system that will minimize loss to follow-up.

Indicator 6.5
Percent of requested follow-up reports received from primary care providers identified as caring for infants/children with PCHL.

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>Actual</td>
<td>39%</td>
<td>57.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Baseline (from 2009) = 71.1%

Numerator
Number of requested reports submitted by primary care providers identified as caring for an infant/child with PCHL

Denominator
Total number of follow-up reports/fax-back information requested from primary care providers identified as caring for infant/child with PCHL
Goal 7. Minnesota will have a comprehensive system that monitors and evaluates the progress towards the EHDI goals and objectives.

Indicator 7.1

Minnesota state agencies (led by MN Departments of Education and Health) will develop and implement a system to determine and communicate the percent of infants/children ages 0-3 with a reported PCHL (congenital or late onset) who achieve communication development commensurate with their cognitive abilities at 3 years of age.

Benchmark Targets:

By December 31, 2011:

A statewide system will be developed to collect data to be used for determining and communicating the number and percent of infants and children who were reported to MDH as having PCHL (congenital or late onset) who achieve communication development that is commensurate with their cognitive abilities at 3 years of age.
Glossary

CDC   Center for Disease Control
EHDI   Early Hearing Detection and Intervention
ENT/ORL Ear, Nose & Throat/Otolaryngology
MDH   Minnesota Department of Health
MN    Minnesota
NBDXPRO Child has been seen by audiology but complete diagnostic data has not been completed and/or reported to Minnesota Department of Health and child has had >4 appointments and/or is >6 months. Case has been closed for follow-up by Minnesota Department of Health.
NBNOAUDIO Primary care provider recommended follow-up with audiology but appointment never made and/or results not reported to Minnesota Department of Health. Case has been closed for follow-up by Minnesota Department of Health.
NBNORESC Primary care provider has decided to monitor hearing and not refer for rescreen and/or diagnostic audiology. Case has been closed for follow-up by Minnesota Department of Health.
NBNOSHOW Family has not shown or has canceled multiple appointments with audiology for follow-up. Case has been closed for follow-up by Minnesota Department of Health.
PCHL   Permanent Confirmed Hearing Loss
PCPNOCO Primary care provider is unknown to Minnesota Department of Health however Minnesota Department of Health has been unable to contact for follow-up. Case has been closed for follow-up by Minnesota Department of Health.
PCPUN  Primary care provider is unknown to Minnesota Department of Health. Case has been closed for follow-up by Minnesota Department of Health
Minnesota Department of Health

Newborn Screening Program
http://www.health.state.mn.us/newbornscreening/
health.newbornscreening@state.mn.us
651-201-5466 or 800-664-7772

Program Manager
Mark McCann 651-201-5450

Short Term Follow-up Supervisor
Amy Gaviglio 651-201-5451

Audiologists
Kirsten Coverstone 651-201-5223
Melanie Weihe 320-223-7309

Children and Youth with Special Health Needs
http://www.health.state.mn.us/divs/fh/mcshn/index.htm
health.cyshn@state.mn.us
651-201-3650 or 800-728-5420

Program Manager
Barbara Dalbec 651-201-3758

Newborn Follow-up Supervisor
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Yaoli Li 651-201-3750

TTY 651-201-5797