Universal Newborn Hearing Screening, Diagnosis, and Intervention

GUIDELINES FOR RHODE ISLAND PEDIATRIC MEDICAL HOME PROVIDERS

**BIRTH**
- SCREEN
  - Identify a medical home for every infant

**BEFORE 1 MONTH**
- SCREEN
  - Results available to PCP on KIDSNET
- RIHAP 401-277-3700
- RE-SCREEN
  - Hospital-based Inpatient Screening (OAE/AABR)
  - At least 2 screening attempts recommended prior to discharge
- Outpatient Screening (OAE/AABR)
  - Results sent to PCP
- Missed, Incomplete, DID NOT PASS
  - RIHAP contacts family and schedules re-screen
- PASS
  - PCP Informed
  - Contacts family to encourage them to follow through with re-screen

**BEFORE 3 MONTHS**
- SCREEN
  - Follow-up: Every child identified with a permanent hearing loss
- RE-SCREEN
  - PCP Informed
  - Audiologist reports diagnosis to RIHAP, 401-277-3700
  - Audiolist refers directly for early intervention & family support: Early Intervention Coordinator, 401-331-1350 x3462
- OUTPATIENT SCREENING
  - PCP initiates medical evaluation
  - PCP refers to otolaryngologist for evaluation, to recommend treatment, and to provide clearance for amplification
- RESULTS TO PCP
  - Partners in care inform family (audiologist, early intervention providers, otolaryngologist, others) about communication, language development, amplification, and cochlear implants

**BEFORE 6 MONTHS**
- SCREEN
  - Continued enrollment in early intervention services
- OUTPATIENT SCREENING
  - Medical Evaluations
    - To determine etiology and identify related conditions
    - Genetic
    - Ophthalmologic (annually)
    - Developmental pediatrics, neurology, cardiology, and nephrology (as needed)
- RESULTS TO PCP
  - Pediatric Audiolistic Services
    - Hearing aid fitting and monitoring
    - Behavioral audiometry (starting at age 6 months)
    - Ongoing monitoring

**ONGOING CARE OF ALL INFANTS FROM THE MEDICAL HOME PROVIDER**
- Provide parents with information about hearing, speech, and language milestones
- Identify and aggressively treat middle ear disease
- Provide ongoing developmental surveillance and screening with a validated tool at 9, 18, & 24-30 months and referral to appropriate resources
- Provide vision screening and referral as needed
- Identify and refer for audiologic monitoring infants who have the following risk indicators for late-onset hearing loss:
  - Caregiver concern regarding hearing, speech, language and/or developmental delay
  - Family history of permanent childhood hearing loss
  - Neonatal indicators: NICU stay for >5 days, ECMO, assisted ventilation, exposure to ototoxic medications (gentamycin & tobramycin) or loop diuretics (furosemide/Lasix) and hyperbilirubinemia that requires exchange transfusion
  - In utero infections: CMV, herpes, rubella, syphilis, and toxoplasmosis
  - Craniosfacial anomalies, including those that involve the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies
  - Physical findings, such as white forelock, that are associated with a syndrome known to include a sensorineural or permanent conductive hearing loss
  - Syndromes associated with hearing loss or progressive or late-onset loss such as neurofibromatosis, osteopetrosis, and Usher syndrome; other frequently identified syndromes include Waardenburg, Alport, Pendred, and Vervell and Lange-Nielson
  - Neurodegenerative disorders: Hunter syndrome, sensory motor neuropathies, Friedreich ataxia and Charcot-Marie-Tooth disease
  - Culture-positive postnatal infections associated with sensorineural hearing loss including confirmed bacterial and viral meningitis and especially herpes viruses and varicella
  - Head trauma especially basal skull/temporal bone fracture that requires hospitalization
  - Chemotherapy

**NOTES**
- Bold indicates high-risk factor
- Red indicates primary care provider (PCP) action points
1. RIHAP=Rhode Island Hearing Assessment Program
2. OAE=Otoacoustic Emissions
3. AABR=Automated Auditory Brainstem Response
4. ABR=Auditory Brainstem Response
5. Home births, or infants at high risk for HL (ie, NICU), may be referred directly to a pediatric audiologist
6. Early Intervention Hearing Coordinator 401-331-1350 x3462
7. Family Guidance Program 401-222-3525

For a current list of Early Intervention Providers go to www.dhs.state.ri.us/dhs/famchild/early_intervention.htm and click on resources for a list of providers.

at the RI School for the Deaf
**CHECKLIST FOR RI PEDIATRIC MEDICAL HOME PROVIDERS**

**BIRTH**

**BEFORE 1 MONTH**

<table>
<thead>
<tr>
<th><strong>HOSPITAL-BASED INPATIENT SCREENING RESULTS (OAE/AABR)</strong></th>
<th><strong>DATE OF CARE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Ear</td>
<td>Missed</td>
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<tr>
<td>Right Ear</td>
<td>Missed</td>
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</tbody>
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**BEFORE 3 MONTHS**

<table>
<thead>
<tr>
<th><strong>OUTPATIENT SCREENING RESULTS</strong></th>
<th><strong>DATE OF CARE</strong></th>
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<tbody>
<tr>
<td>Left Ear</td>
<td>Missed</td>
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<tr>
<td>Right Ear</td>
<td>Missed</td>
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**BEFORE 6 MONTHS**

<table>
<thead>
<tr>
<th><strong>PEDIATRIC AUDIOLOGIC EVALUATION</strong></th>
<th><strong>DATE OF CARE</strong></th>
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<tbody>
<tr>
<td>Conductive Hearing Loss</td>
<td>Permanant Hearing Loss</td>
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<thead>
<tr>
<th><strong>SERVICE PROVIDER CONTACT INFORMATION</strong></th>
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<tbody>
<tr>
<td><strong>Pediatric Audiologist</strong></td>
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<td>Address:</td>
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<td>Phone:</td>
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<td>Fax:</td>
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<td>Email:</td>
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<td><strong>Early Intervention Program</strong></td>
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<td><strong>Otolaryngologist</strong></td>
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<tr>
<td><strong>Ophthalmologist</strong></td>
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<tr>
<td><strong>Other</strong></td>
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**PATIENT:**

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<thead>
<tr>
<th><strong>DATE OF BIRTH:</strong></th>
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**ONGOING CARE OF ALL INFANTS**

- Provide parents with information about hearing, speech, and language milestones
- Identify and aggressively treat middle ear disease
- Vision screening and referral as needed
- Ongoing developmental surveillance/referral
- Referrals to otolaryngology and genetics as needed
- Risk indicators for late onset hearing loss:
  - / (Refer for audioligic monitoring)

**CONTINUED ENROLLMENT IN EARLY INTERVENTION AND FAMILY GUIDANCE PROGRAM**

- Medical evaluations to determine etiology and identify related conditions
  - Ophthalmologic (annually)
  - Genetic
  - Developmental pediatrics, neurology, cardiology, and nephrology

- Pediatric audiologic services
  - Hearing aid fitting
  - Behavioral audiology
  - Ongoing monitoring starting at age 6 months

The recommendations in this document do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate. Adapted with permission from The American Academy of Pediatrics. Supported in part by project 1 H61 MC00009 from the Maternal and Child Health Bureau (Title V, Social Security Act), Health Resources and Services Administration, US Department of Health and Human Services.