Provider Fact Sheet

Minnesota Department of Health August 2004

Infant Hearing Loss

Infant hearing loss

About 200 deaf and hard of hearing babies are born in Minnesota each year. Approximately 1/1000 babies is born deaf and 3 to 4/1000 babies are born with a mild to moderate hearing loss. Ninety percent of deaf and hard of hearing babies are born to hearing parents who have no experience with hearing loss.

Identifying loss in newborns

Of Minnesota's 111 birthing facilities, 109 screen infants for hearing loss at birth. Of those hospitals, 87 report their results to the Minnesota Department of Health (MDH). Hospitals use two objective, physiologic methods to screen for hearing loss: Otoacoustic Emissions (OAE) and Automated Auditory Brainstem Response (AABR). Factors such as a screener's training, noise in the room, a quiet baby, clean ear canals, and appropriate probe fit can impact results. MDH recommends a refer rate of 4 percent or less which hospitals, overall, have achieved.

REFER results

A REFER result indicates that an infant did not pass the hearing screen in one or both ears. Newborns who fail their hearing test have a 1/10 to 1/20 chance of having a hearing loss depending upon the type of technology used to test them.

PASS results

A PASS result means an infant passed the hearing screen in both ears. However, because the sensitivity of OAE and AABR are not 100 percent accurate, some children with hearing loss may be undetected by both methodologies. If a child who passes the hearing screen has hearing loss risk factors, providers should monitor the child.

Causes of infant hearing loss

The etiology of hearing loss is heterogeneous. Of all pre-lingually deaf children, 50 percent of cases are genetic in origin, 25 percent are non-genetic, and 25 percent are idiopathic.

- *Genetic forms of deafness* may include other clinical features (30 percent of cases) or hearing loss may be the only isolated finding (70 percent of cases). More than 400 syndromes have been associated with hearing loss, which imply additional health concerns for the affected child. Most isolated, non-syndromic deafness is autosomal recessive in inheritance (hence, there is not a family history of deafness in the majority of these cases).
- *Non-genetic causes of deafness* can result from pre- or post-natal infection (i.e. cytomegalic virus, bacterial meningitis etc.), ototoxic medications, and severe hyperbilirubinemia. Other non-genetic risk factors include hypoxia, very low birth weight, assisted ventilation, and low Apgar scores.

Provider responsibilities

- Be familiar with your hospital protocol.
- Re-screen babies with a REFER result by one month of age and refer them for audiologic assessment by three months of age if the second screen is also a REFER.
- Assure referral to early childhood intervention services.
- Refer the child for genetics, ENT, and ophthalmology evaluations.
- Identify support resources for the family
- Call the Minnesota Newborn Screening Program with questions (612) 676-5260.

Managing infant hearing loss

- Learn about hearing aids or cochlear implantation.
- Assist in early intervention including assistance with selection of effective communication mode.
- Monitor child development.
- Schedule regular appointments with primary care provider (medical home concept).
- Identify resources for the family.

More information

American Academy of Pediatrics – www.aap.org
Deaf and Hard of Hearing Services – www.dhhsd.org/
1-800-456-7589
Educational and Social Resources –
www.health.state.mn.us/divs/fh/mcshn/cdtc.htm
1-800-728-5420
GeneTests – www.genetests.org
Lifetrack Resources – www.familysupportconnection.org
1-866-346-4543
MDH –
www.health.state.mn.us/divs/fh/mch/unhs/index.html
(612) 676-5260

MINNESOTA MDH DEPARTMENT OF HEALTH

Newborn Screening Program
717 Delaware Street SE
P.O. Box 9441
Minneapolis, MN 55440-9441
(612) 676-5260
Fax: (612) 676-5703