



# Child and Teen Checkups (C&TC) FACT Sheet

For primary care providers

## Hearing Screening

C&TC Requirements:	Qualified Personnel	Documentation
<p>Universal Newborn Hearing Screening is required for all newborns by one month of age using Automated Auditory Brainstem Response (AABR) or Otoacoustic Emission (OAE) technology. If an infant did not receive a newborn hearing screening or is at risk for early or late onset hearing loss, it is recommended that age-appropriate objective screening be done at age 3 with puretone audiometry</p> <p><b>All children</b> must be <b>subjectively</b> monitored for hearing concerns. Children should be screened for a family history of childhood hearing loss, delay of language acquisition or history of such delay, and a history of repeated otitis media. The child, parent or guardian must be asked if there are concerns about the child's hearing. When indicated, refer the child for age appropriate diagnostic hearing tests.</p> <p><b>Children age four and older</b>, in addition to the above, must receive an objective puretone audiometric screening using current testing methods.</p> <p><b>At the 16 and 20 year checkups</b>, subjective screening may be performed. However, if no objective screening occurred at the previous checkup, consider performing puretone audiometry.</p> <p>Based on objective screening measures, refer the child to an audiologist for diagnostic testing when appropriate.</p>	<p>An adequately trained individual  (i.e., trained nursing assistant, certified medical assistant, or paraprofessional)</p>	<p>Document newborn hearing screening results when available.</p> <p>Document normal/abnormal findings and risk factors.</p> <p>For children 3 - 4 years and older, document results of pure-tone audiometric screening. If objective screen not done, document reason.</p>

### Screening Tools:

#### Pure-tone audiometer and a variety of toys (for play audiometry)

Pure tone audiometric screening is the gold standard for children of all ages when developmentally appropriate.

A standard, manual, pure-tone audiometer with earphones works best for screening and allows for adjustments to the loudness, pitch and duration of the tone. These factors are needed to condition the child for play audiometry. Hand held, automatic audiometers do not allow for variation of these factors. Annual calibration of audiometers is recommended.

Voice varieties of audiometers are not recommended, such as the Verbal Auditory Screening for Children (VASC), because several types of hearing losses may not be detected using these audiometers.

## Facts about the importance of Hearing Screening:

Hearing loss is the most prevalent birth defect in the United States [1].

One in 1000 infants are born with severe to profound hearing loss. Of these infants, more than 30% of the hearing losses are likely to be genetic. An additional 2-5% of all children are born with some degree of hearing impairment [1].

In 2006, approximately 4,193 Minnesota children ages 3 ½ -5 years were identified through Early Childhood Screening with new potential hearing problems [2].

Hearing can be screened within hours of birth with otoacoustic emission equipment or auditory brainstem response [3].

National research suggests that 15% of children ages 6-19 years of age have a hearing loss in one or both ears [4].

Infants and children often compensate for hearing loss using other senses such as vision. This makes it difficult for parents to detect hearing loss in infants [5].

Research has shown that earlier detection and intervention of hearing loss (e.g. by 6 months of age) results in significantly better performance in speech, language and academic development compared to later detection and intervention [5].

Universal Newborn Hearing Screening is cost-effective, estimated to cost less than \$30 per infant. The cost of screening is similar among three hearing screening protocol options [6].

### Key Points:

Newborn Hearing Screening is mandated by Minn. Statute § 144.966 (Early Hearing Detection and Intervention) and Minnesota Statute §144.125-128 (Tests of Infants for Heritable and Congenital Disorders).

The results of the newborn OAE are sent to the infant's primary care provider and the Minnesota Department of Health (unless the parent requests otherwise) and can be retrieved along with the results of the newborn metabolic panel.

Minnesota Statute 121A requires all children to receive hearing screening before kindergarten. Additional ages at which school districts carry out hearing screening vary throughout the state. Check with your local school district to determine at which ages they complete hearing screening. If it has been documented that a child has completed a normal hearing screening through the school within the year, you may not need to screen the child a second time. For questions related to billing for C&TC in such instances, contact the child's appropriate health insurance payer (e.g., health plan).

### Attention: New State Mandate

Now that hearing screening is mandatory you will need to ensure that every infant is screened and that the results are documented in the medical chart and reported to MDH. Provisions should also be made to make sure that babies with REFER results have appointments made for additional testing and that their parents understand the importance of following through with the necessary evaluations after hospital discharge.

Your facility needs to have a protocol for screening newborns for hearing loss. With hearing screening changing from a voluntary to a mandatory program, this is a good time to review your screening protocol to see if revisions are needed. The protocol should cover not only the screening procedure and equipment, but how staff will be trained (and re-trained), documentation, result reporting to the Minnesota Department of Health (MDH), contingency planning for equipment failure, communication with parents and other health care providers, and follow-up for infants with abnormal results.

Calls and correspondence regarding screening infants for hearing loss should be directed to:  
Newborn Screening Program, MDH  
Phone: 1-800-664-7772  
Fax: 651-201-5471

## **Professional Recommendations:**

American Academy of Pediatrics recommends performing pure-tone audiometry at 4, 5, 6, 8, 10, 12, 15, and 18 years of age [7].

American Speech-Language-Hearing Association - Preschool children are screened using play audiometry as needed, requested, or mandated, or when they have conditions that place them at risk for hearing impairment. Screen school-age children routinely using pure-tone audiometry on initial entry to school, and annually in kindergarten through 3<sup>rd</sup> grade, and in 7th and 11th grades [8].

Joint Committee on Infant Hearing (American Speech-Language-Hearing Association, American Academy of Pediatrics, American Academy of Otolaryngology-Head and Neck Surgery, American Academy of Audiology, American Academy of Pediatrics and the Directors of Speech and Hearing Programs in State Health and Welfare Agencies) and Bright Futures endorse the goal of universal detection of infants with hearing loss as early as possible using auditory brainstem response or otoacoustic emissions. All infants should be screened before 3 months of age [3].

## **Resources:** (Accessed December 10, 2007)

Green, M., (2000) Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents (2<sup>nd</sup> ed.). Arlington, VA: National Center for Education in Maternal and Child Health. . [Online]: <http://www.brightfutures.org>.

Minnesota Department of Health (MDH), Hearing Screening Homepage. [Online]: <http://www.health.state.mn.us/divs/fh/mch/hlth-vis/hearing.html> or the C&TC Homepage. [Online]: <http://www.health.state.mn.us/divs/fh/mch/candtc.html>. For specific questions or training information call (651) 201-3735. Workshop registration information is located at: <http://www.health.state.mn.us/divs/fh/mch/mch-pro2.html>.

Minnesota Universal Newborn Hearing Screening (UNHS) /Early Hearing Detection and Intervention (EHDI) Program, MDH. [Online]:

<http://www.health.state.mn.us/divs/fh/mch/unhs/>. Contact the MDH Newborn Hearing Screening Program at (651) 201-5466 or (800) 664-7772 or the MDH Infant and Child Follow-Up Unit at (651) 201-3760 or by email at [newbornscreening@health.state.mn.us](mailto:newbornscreening@health.state.mn.us).

MDH Hearing Screening Procedures. [Online]:

<http://www.health.state.mn.us/divs/fh/mch/hlth-vis/materials.html>.

American Speech-Language- Hearing Association . [Online]:

[http://www.asha.org/about/legislation-advocacy/federal/ehdi/model\\_bill.htm](http://www.asha.org/about/legislation-advocacy/federal/ehdi/model_bill.htm).



Minnesota Department of Human Services C&TC Documentation Forms, [Online]  
[http://www.dhs.state.mn.us/id\\_028848](http://www.dhs.state.mn.us/id_028848) Criteria Guidelines for C&TC Provider  
Documentation (2006), C&TC FACT Sheets [Online]:

<http://www.dhs.state.mn.us/provider/ctc>

Centers for Disease Control and Prevention: Early Hearing Detection and Intervention  
(EHDI) Program. [Online]: <http://www.cdc.gov/NCBDDD/EHDI/question.htm>.

Cunningham, M., Cox, E. (2003). Hearing Assessment in Infants and Children:  
[Electronic version]. Recommendations Beyond Neonatal Screening. *Pediatrics*, 111;  
436-440. <http://pediatrics.aappublications.org/cgi/content/full/111/2/436?ck=nck>.

National Center for Hearing Assessment and Management (NCHAM). [Online]:  
<http://www.infanthearing.org/>. Links available to UNHS/EHDI intervention components,  
resources, and statistics.

American Academy of Pediatrics: The National Center for Medical Home Initiatives for  
Children with Special Needs. [Online]:

<http://www.medicalhomeinfo.org/screening/hearing.html#Mod>. Links to provider fact  
sheets, resources, brochures, and other tools.

## References: (Accessed December 10, 2007)

1. American-Speech-Language-Hearing Association: Facts on hearing loss in children.  
[Online]: <http://www.asha.org/public/hearing/disorders/children.htm>.
2. Minnesota Department of Education: Early childhood screening FY 2006 participant  
data. 2006. [Online]:  
[http://education.state.mn.us/mdeprod/groups/EarlyLearning/documents/Report/030638.p  
df](http://education.state.mn.us/mdeprod/groups/EarlyLearning/documents/Report/030638.pdf).
3. Joint Committee on Infant Hearing Year 2000 Position Statement: Principles and  
guidelines for early hearing detection and intervention programs. [On-line]:  
<http://www.jcih.org/jcih2000.pdf>.
4. Niskar, A., Kieskak, S. (1998). Prevalence of hearing loss among children 6 to 19 years  
of age. [Electronic version]. *Journal of the American Medical Association*, 279.
5. De Michele, Anne M., (2005). Newborn hearing screening. eMedicine. [On-line]:  
<http://www.emedicine.com/ent/topic576.htm>.
6. Gorga, M., Preissler, K., Simmons, J., Walker, L., Hoover, B. (2001). Some issues relevant  
to establishing a universal newborn hearing screening program. *Journal of American  
Academy of Audiology*, 12(2), 101-112.
7. U. S Public Health Service. (1998). Clinician's Handbook of Preventive Services (2<sup>nd</sup>  
ed.) McLean, VA: International Medical Publishing. [Online]:  
<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat6.section.4828#5063>.
8. American Speech-Language-Hearing Association. (2005). Hearing screening. [On-line]:  
<http://www.asha.org/public/hearing/testing/>.