UTAH DEPARTMENT OF HEALTH
Early Hearing Detection & Intervention

UTAH SCHOOL-AGE HEARING SCREENING PROTOCOL

The goal of successful school hearing screening programs is to identify children who may have hearing loss, which in turn leads to appropriate referrals for further audiological and/or medical evaluation. Early identification of hearing loss and appropriate management can improve a child's language & cognitive development and educational performance (Yoshinaga-Itano, 1995). While the universal newborn hearing screening program has proven successful in earlier identification of hearing loss in children, there is a continued need for school-aged screening due to late-onset and progressive hearing loss, as well as fluctuating conductive hearing loss due to ear infections.

Late-onset or progressive hearing loss may occur due to:

- NICU > 5 days or any of the following: ECMO, assisted ventilation, hyperbilirubinemia w/transfusion, ototoxic medication (gentamycin, tobramycin, chemotherapy), and loop diuretics
- Genetic disorders such as Connexin 26 mutuations
- Nonsyndromic progressive sensorineural hearing loss
- Infectious diseases such as Cytomegalovirus (in utero), meningitis or measles
- Syndromes associated with hearing loss such as Down, Usher, Waardenburg, etc.
- Craniofacial anomalies (cleft lip/palate; atresia; microtia)
- Disorders such as enlarged vestibular aqueduct
- Exposure to loud noise or music (dependent upon intensity and duration of noise/music exposure)

Who should be screened for hearing loss?

- All students new to the school district
- Annually, all students from Kindergarten to 3rd grade
- All students in the 7th grade
- All students in the 11th grade
- New entrants to school who do not have records of passing a hearing screening
- Annually, all students in a special education program
- Students who have failed a grade
- Any student in which parent or school personnel suspect a hearing loss

Who should not be screened for hearing loss?

- Any student who wears hearing aids or cochlear implants
- For the above, follow-up with parents is recommended to ensure the student is under the care of a physician and/or audiologist

Hearing Screening Protocol

- **Pure-tone screening** Screen at 1000 Hz, 2000 Hz, 4000 Hz at 25 dBHL
    - Include 6000 Hz for 7th & 11th grades to rule-out noise induced hearing loss

- **Otoacoustic Emissions**[1] (DP- or TEOAEs) are recommended for students who are unable to complete traditional pure-tone screening (i.e., young age, developmental and/or physical disability preventing accurate responses). Note: OAEs are not a replacement for students who can complete pure-tone screening

- **Tympanometry**[1] should be performed on all students who fail the rescreen. A "Refer/Fail" is any tympanogram in which peak admittance is < 0.2 mmho or tympanometric width greater than 200 daPa

- **Otoscopy**[1] performed on all failed tympanograms to determine the presence of excessive cerumen, otitis media, tympanic membrane perforation and/or pressure equalization tubes

- **Screening results and referral** to pediatrician/primary care physician sent home on day of rescreening if OM or TM perforation present

[1] These procedures should be completed or supervised by an audiologist

Hearing Screening Pass/Fail Criteria

- "Pass" → Student must respond appropriately to all presentation stimuli at screening level (25 dBHL) in BOTH ears
- "Refer" → Lack of response to any test frequency at screening levels in either ear
    - A rescreen should take place within 4 – 6 weeks.
- "Could Not Screen" → lack of cooperation, inability to be conditioned to the screening task

The following Best Practice Guidelines have been adapted from:

American Speech-Language-Hearing Association (1997). *Guidelines for Audiologic Screening.* http://www.asha.org/PRPPrintTemplate.aspx?folderid=8589935406

American Academy of Audiology Clinical Practice Guidelines: Childhood Hearing Screening (2011). https://www.audiology.org/publications-resources/document-library/pediatric-diagnostics

Joint Committee on Infant Hearing. (2007). *Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs*. http://pediatrics.aappublications.org/content/pediatrics/120/4/898.full.pdf

Kooper, R. (2008) "Screening, Evaluation, and Management of Hearing Loss in the School-Aged Child" in Madell, J. R., & Flexer, C. (2008 Eds.), *Pediatric Audiology: Diagnosis, Technology, and Management*

Roush, J. & Corbin, N. (2017) "Screening for Hearing Loss and Middle Ear Disorders: Beyond the Newborn Period" in Tharpe, A.M. & Seewald, R. (2017 Eds.), *Comprehensive Handbook of Pediatric Audiology*