**Pediatric Grand Rounds**

**FRIDAY, MAY 26**

8:00 a.m. Storm Eye Auditorium  
Topic: “Comprehensive Care Program: High Value Care for Children with Medical Complexity”  
Speaker: Nancy Murphy, MD, FAAP, FAAPMR  
Professor and Chief, Division of Pediatric PM&R

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**Amplification for Infants and Children with Hearing Loss**

With the execution of universal newborn hearing screening programs and implementation of early intervention programs, pediatric audiologists often confirm type and degree of congenital hearing loss, within the first few months of life. For those diagnosed with hearing loss, recommendations for habilitation/rehabilitation are discussed with the family at the time of the diagnosis, along with a referral to an otologist (fellowship trained physician) or pediatric otolaryngologist for a medical evaluation. After the FDA required “medical clearance” has been obtained, the process for obtaining amplification and enrollment in early intervention begins. Parents should receive information regarding hearing loss and made aware of all communication options and available technology.

Infants and children with even a mild degree of sensorineural hearing loss should be fit with high quality amplification which, when programmed appropriately, allows for maximized audition, while keeping amplified sounds comfortable and safe for the user. The units should be durable, moisture-resistant, and contain safety locking mechanisms. Additional features include directional microphones, feedback suppression, and frequency compression, and compatibility with wireless technology should be considered.

Infants and young children are typically fitted with traditional behind-the-ear (BTE) style amplification with custom earmolds, while receiver-in-the-canal (RIC) devices are becoming more popular with adolescents and teenagers, due to their “natural sound” and cosmetic appearance. The pediatric audiologist should use evidence based prescriptive methods when fitting traditional amplification and verify with probe microphone measurements.

Bone anchored or osseointegrated devices are often recommended for children with permanent conductive hearing loss, for whom traditional hearing aids are not appropriate, such as aural atresia, grade III or IV microtia, or chronically draining ears. For those under 5 years of age, bone anchored devices are typically coupled to a softband/elastic band, which wraps tightly around the head, allowing transmission of sound through bone conduction. For those at or above age 5 who meet FDA criteria, both transcutaneous and percutaneous bone anchored devices are available for surgical implantation.

For those children 12 months and older with severe to profound sensorineural hearing loss, who receive little or no benefit with appropriately programmed amplification and expected participation in a rehabilitative program, cochlear implantation is often recommended. Activation of the external processor typically occurs 2-3 weeks after implantation of the electrode array. Pediatric cochlear implant patients require regular programming and evaluation appointments, in addition to intensive aural habilitation. The MUSC CI team implants an average of 120 ears each year, with patients ranging from 7 months to 94 years of age.

For additional information regarding treatment options for children with hearing loss, please contact Dr. Orr at orrka@musc.edu