**Outcomes of group Aural Rehabilitation for older adult cochlear implant recipients**

Principal Investigators: Katrina Stidham, MD; Samantha Morgan, AuD

Co-Principal Investigators: Michelle Albera MS SLP; Mindy Schmelzer AuD

**Significance & Background**

The older adult population experiences the highest prevalence of hearing loss. As one ages, the likelihood of experiencing hearing loss increases. Within the United States, hearing loss affects nearly 50% of adults in their 60s, 68% in their 70s and as many as 89% of adults age 80 and older (Dillon et al., 2013). As the geriatric population expands, the impact of hearing loss warrants attention, as associations between hearing loss and cognition, as well as hearing loss and limited quality of life have been identified. A study Lin et al. in 2011 revealed an increased hazard ratio for dementia diagnosis for those with hearing loss; the ratio increased with increased severity of hearing loss. Gopinpath et al (2012) discovered that adults with hearing loss were more likely to experience social isolation and emotional distress than their normal hearing peers.

Prior investigation has demonstrated the beneficial effect of hearing healthcare intervention on related conditions, with the identification of a positive association between hearing aid use and cognitive function (Dillon et al., 2013). For older adults with significant hearing loss for whom hearing aids do not provide sufficient benefit, cochlear implantation provides improved acuity and speech recognition. As the geriatric population size grows and cochlear implant candidacy criteria continues to evolve, the number of older adults who undergo implantation is expected to increase (McRacken et al., 2017). Ongoing research to investigate a similar association between cognition and cochlear implant use is needed (Dillon et al., 2013). Additionally, outcome measures regularly employed with recipients should reflect daily communicative needs and demands, and evaluate multiple performance domains.

At present, it is a well-established concept that adults achieve optimal cochlear implant outcomes when provided with a structured therapeutic approach post-operatively. While self-guided aural rehabilitation activities are prominent within the arena of rehabilitation, patient compliance with computerized programs is as low as 30% (Moberly, Vasil, Baxter & Ray; 2018). Prior studies have indicated that those actively participating in a CI group were more likely to have a higher self-report of quality of life and be considered good performers. (Harris et al., 2016). When rehabilitation occurs within a group setting, the individual with hearing loss can share experiences, problems, and solutions among peers also impacted by hearing impairment. This format is also a more financially feasible approach, compared with a one to one therapeutic model, as the audiologist and/or speech language pathologist can provide rehabilitative services to more people in a given amount of time (Hawkins, 2005). Clinician-guided rehabilitative efforts have been shown to improve hearing-related quality of life as well as speech recognition abilities for cochlear implant users. However, clinician guided aural rehabilitation is not standard practice. The poor reimbursement for audiologists, as well as the infrequent presence of speech-language pathology on the cochlear implant team, are likely rationale (Moberly et al., 2018). Collection, tracking, and dissemination of resultant data when clinician led aural rehabilitation is provided is therefore of vital importance. Should outcome data

continue to demonstrate a positive benefit for all participants involved, data can be utilized to argue a change in how these services are coded and billed (Moberly et al, 2018). Without such evidence, an increasing number of implant recipients are likely to miss out on structured rehabilitation, and potentially fail to reach their optimal outcome potential with their cochlear implant (Harris, 2016). This pilot study is geared at collected additional evidence.

**Aims**

This pilot study serves to collect clinically needed intelligence regarding the impact of group aural rehabilitation on patient performance, patient perception of hearing handicap, and quality of life. As aural rehabilitation is within the scope of practice for the clinical audiologist and speech language pathologist, according to The American Speech and Hearing Association, further development of a delivery model provides the opportunity to improve upon the standard of care for implant recipients. Structured assessment of self-reported measures, in addition to evaluation of speech recognition abilities, is vital, as The Centers for Medicare and Medicaid Quality Strategy report include measures of quality of life measures as a primary outcome measure. (McRacken et al., 2017). The central question that this study serves to answer, is how does group aural rehabilitation effect outcomes of older adult cochlear implant recipients across various domains?

<u>Objectives/Goals</u>

1. Evaluate impact of engagement in an aural rehabilitation group on patient speech recognition performance and patient perception of hearing impairment and quality of life.
2. Identify situations in which use of assistive listening devices can improve communication and ease listening effort.
3. Explain how to implement communication strategies with family, friends and colleagues.
4. Discuss feelings and stigma surrounding hearing loss and cochlear implants.
5. Identify available community resources for the deaf and hard of hearing population.

**Hypothesis**

Clinician directed group therapy will provide regular meaningful auditory stimulation with peers, decreasing impact of social isolation, and improving objective and subjective measures of CI performance.