Remote Programming of Cochlear Implants

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Disclosure: Audiology Advisory Board for Cochlear Corporation
Telemedicine benefits

- live far from clinics
- have limited transportation
- are medically fragile
- inclement weather
- flexible hours
Recap RMEC Telehealth Study

• Remote programming could be administered in a feasible, inexpensive model for the clinic.

• 28 subjects in total: 17 subjects remotely programmed with a trained facilitator at remote site; 11 programmed at their home with no facilitator. Subjects saved 19 hours and $435 on average by attending a remote session.

• All subjects and the provider were extremely satisfied with the service provided.

• The remote programming session could be reimbursed through insurance in some instances.
Purpose

• Safety
• Efficacy
• Reimbursement
Current Study

- FDA approved IDE study
- Five sites
- 40 subjects
- Facilitated
- Unfacilitated
Endpoints

- **Primary Safety Endpoint:** Characterize the safety profile of Adverse Events associated with facilitated remote/ unassisted remote/ F2F MAP programming
  
  **How?** Documentation of AEs

- **Primary Efficacy Endpoint 1:**
  - Facilitated remotely programmed MAPs = F2F programmed MAPs

- **Primary Efficacy Endpoint 2:**
  - Unassisted remotely programmed MAPs = F2F programmed MAPs

- **Secondary Efficacy Endpoint:**
  - Unassisted = Facilitated

  **How?** CNC testing, .cdx file analysis, subject surveys
Materials

- Surface Pro tablet
- Go To Meeting
- CNCs
- SSQ-C
- Internal questionnaires
Visit Schedule

Visit 1 – Regular Clinic (consent, train, CNCs)
- At least one month but no more than 12 months after last MAPping
- Consent
- Training – computer applications and programming pod
- CNC testing with familiar/live program

Visit 2 – Remote Site (remote programming, survey)
- Within 1 month of Visit 1
- Remote programming session by primary AuD
- Assisted by a facilitator
- Remote Programming Satisfaction Survey

Visit 3 – Regular Clinic (CNCs, survey)
- Within 2-4 weeks of Visit 2
- CNC testing with Facilitated Remote Program
- SSQ-C comparing familiar/live MAP with remote MAP

Visit 4 – Remote Site (remote programming, survey)
- Within 2-4 weeks of Visit 3
- Remote programming session by primary AuD
- Self-facilitated
- Remote Programming Satisfaction Survey

Visit 5 – Regular Clinic (CNCs, surveys)
- Within 2-4 weeks of Visit 4
- CNC testing with Self Remote Program
- SSQ-C comparing familiar/live MAP with remote MAP
- Telemedicine Experience Questionnaire
All subjects reported they were satisfied with the programming session.
Current Feedback

Investigator Feedback

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Communication

Satisfaction

Encounter
Telehealth Barriers

- Internet connection
- Issues with internet speed
- Network connectivity problem
- Problems with Ethernet
- Internet connection/speed issues
Telehealth Barriers

- Reimbursement
- State laws
- Private Payers
- Medicaid
- Medicare

H.R. 2948 (2015-2016)
Medicare Telehealth Parity Act
Resources

- American Telemedicine Association [www.americantelemed.org](http://www.americantelemed.org)
- ASHA [www.asha.org](http://www.asha.org)
- AAA [www.audiology.org](http://www.audiology.org)

- Goehring, Hughes, Baudhuin, J, Valente, McCreery, Diaze, Sanford & Harpster (2012)
- Hughes, Goehring, Baudhuin, Diaz, Sanford, Harpster & Valente (2012)
- McElveen, Blackburn, Green, McLear, Thimsen & Wilson (2010)
- Ramos, Rodriguez, Martinez-Beneyto, Perez, Gault, Falcon & Boyle (2009)
- Rodriguez, Ramos, Falcon, Martinez-Beneyto, Gault & Boyle (2010)
- Samuel, Goffi-Gomez, Bittencourt, Tsuji & Brito (2014)
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