Telemedicine Solutions in Northwest Alaska and the Hearing Norton Sound Project

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Objectives



- Discuss telemedicine solutions for audiologic/otologic care at Norton Sound Health Corporation
- Describe a community randomized trial evaluating an mHealth school hearing screening and telemedicine referral process



Disclosures

- No disclosures
- Funding: Patient-Centered Outcomes Research Institute (PCORI AD-1602-34571)
- Clinicaltrials.gov registration: NCT03309553

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Treatable Hearing Loss

- Historical Data from Alaska
 - 16-31% prevalence of hearing loss
 - ✤ 65-76% >1 episode otitis media
- General US population
 - ✤ 1.7-5% prevalence of hearing loss

Lifelong Impact





Map provided by Alaska Native Tribal Health Consortium Division of Information Technology www.anthc.org

Alaska Native Tribal Health Consortium









AFHCAN

- Networked telemedicine solution
- Alaska Federal Health Care Partnership (AFHCP)
 VA, DoD, Coast Guard, IHS, ANTHC
- Connects 248 sites (44 organizations)
- Dermatology, Dentistry, Cardiology, Otolaryngology, Audiology, Primary Care, Optometry









Workflow for use of telemedicine in audiology and otolaryngology specialty care to increase access and timeliness of care, while reducing travel

Telehealth Services

- Diagnostic: video otoscopy, tympanometry, acoustic reflexes, OAEs, surgical/medical management
- Habilitation/Rehabilitation: hearing aid fitting and programming, troubleshooting, counseling, aural rehabilitation
- Newborn hearing screening follow-up
- Not yet tackled:
 - Balance assessment, CI mapping, electrophysiologic testing









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The Project

- How What we know: treatable hearing loss in this region is high
 - Ear infections are one of the top 5 diagnoses
 - Hearing loss in children can impact traditional oral culture, school performance, and vocational opportunities
- What exists:
 - State-mandated hearing screenings
 - Telemedicine
- What is missing:
 - The Referral process for hearing screening that prevents children being lost to follow-up

Key Questions

- 1. What is the **best way to identify** children with undiagnosed hearing loss?
- 2. How do we **improve the referral process** to ensure timely diagnosis and treatment?



Evaluate a new school-based screening and referral process that utilizes mobile health and telemedicine technology

Compare current school screening with new mHealth screening that includes a specific assessment of middle ear function



Compare current referral process with new expedited telemedicine referral

Outcomes

Sensitivity and specificity of screening protocols		Hearing loss prevalence
	Time to ICD-10 ear/hearing diagnosis	
School performance		Hearing-related quality of life

Community

- GOAL: Understand the insights, experiences, and perspectives of community members, patients, parents, children, health care providers, teachers, school and hospital administrators, and other key stakeholders as it relates to hearing loss in rural Alaskan communities and the conception/design/dissemination of the study
 - Focus groups and community events (beginning/end)
 - Semi-structured interviews



Overview



Cluster randomized trial in 15 communities in northwest Alaska

- ✤ All children eligible (K-12)
- Target enrollment n = 1500

Timeline



Community Engagement

Engage people representing the population of interest and other relevant stakeholders in ways that are appropriate and necessary in a given research context (PCORI Methodology Standards, PC-1)





Community Engagement

- Identification of the problem and conception of the question
- Design of the study
- Implementation
- Dissemination



Community

Stakeholders

Lead Education Lead Parent Lead Audiology Lead ENT Surgeon Lead Hospital Administrator Communication Outreach Specialist Research and Communication Coordinator Patient Partner Community Events

Focus groups and interviews

Addressing hearing loss disparities in a rural Alaska Native Population

Investigators

NSHC Duke University John Hopkins University









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A CHILDHOOD EAR & HEARING STUDY CONTACT BLOG STAFF

www.hearingnortonsound.org

A childhood ear & hearing study

Read more

Susan Emmett- Co-PI

Phil Hofstetter- Lead Hospital Administration Stakeholder (Co-PI 2017-2018)

Laureli Ivanoff- Communication Outreach Specialist (2017-2018)

Clay Jones-Communication and Research Coordinator (2018-present)

Paul "Bebucks" Ivanoff- Lead Parent Stakeholder

Patty Vink- Lead Education Stakeholder (2017-2018)

Jessie Towarak- Lean Education Stakeholder (2018-2019)

THE TEAM

Stephanie McConnell- Lead Patient Partner

John Kokesh-Lead ENT Surgeon Stakeholder

Alain Labrique- Co-Investigator

Nae-yuh Wang- Statistician and co-investigator

Joe Gallo- Co-Investigator

Myself- Co-PI and Lead Audiology Stakeholder (Co-PI 2018-current)

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Questions?

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