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

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- 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

Kuguenko Illustration
Norton Sound Health Corporation (NSHC) is a nonprofit consortium owned by twenty Tribes in the 44,000 square-mile Bering Strait Region of Northwest Alaska, which is home to approximately 9,500 residents; 74.6 percent are Alaska Native.

NSHC operates the Norton Sound Regional Hospital in Nome, as well as clinics in the region’s fifteen Native villages, which range in size from 150 to 900 residents. Each Village Clinic is staffed by local residents trained as Community Health Aides. In addition, NSHC stations a Physician Assistant or Nurse Practitioner in larger villages and Dental Health Aides are located in Savoonga, Shishmaref, Stebbins and Unalakleet. Although NSHC operates its own medevac service and telemedicine is available, the vast geographic distances within the service area can present challenges during inclement weather.
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
Hearing Norton Sound
Siutik Sigutenka
Chutek

Duke Global Health Institute
The Project

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:
- Referral process for hearing screening that prevents children being lost to follow-up
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?
Goals

- 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
- Time to ICD-10 ear/hearing diagnosis
- Hearing loss prevalence
- Hearing-related quality of life
- School performance
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
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
Addressing hearing loss disparities in a rural Alaska Native Population

**Stakeholders**
- Lead Education
- Lead Parent
- Lead Audiology
- Lead ENT Surgeon
- Lead Hospital Administrator

**Community**
- Communication Outreach Specialist
- Research and Communication Coordinator
- Patient Partner
- Community Events
- Focus groups and interviews

**Investigators**
- NSHC
- Duke University
- John Hopkins University
A childhood ear & hearing study

Read more

www.hearingnortonsound.org
THE TEAM

Susan Emmett- Co-PI
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Laureli Ivanoff- Communication Outreach Specialist (2017-2018)
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Patty Vink- Lead Education Stakeholder (2017-2018)
Jessie Towarak- Lean Education Stakeholder (2018-2019)
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Questions?

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