

Rural Telemedicine in Alaska: A Look at Healthcare Through Telecommunications

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DIFFICULTIES WITH RURAL HEALTHCARE

- An average town in the United States will have a basic medical facility capable of treating its patients. If not, there is roadway access to a capable facility.
- In Rural Alaska however, there is no way to drive to the nearest hospital. These communities are not connected to the major road system and the only way to reach a hospital is by air transport.
- Although many villages have access to hub communities that maintain a clinic, the clinic may not have the capabilities to treat certain ailments and many villages have no access to a medical facility.
- Providing adequate medical care for Rural Alaskans is difficult due particularly to the size of Alaska, the geographic isolation of many villages, and to the cost of transportation to these rural areas (Figure 1).
- The most serious healthcare issues that have been seen in Rural Alaska are "too few physicians or services and [health] care is too expensive," (Hagopian et al, 2000).
- In hopes of overcoming these obstacles in rural medicine, many organizations initiated telemedicine and telehealth programs.

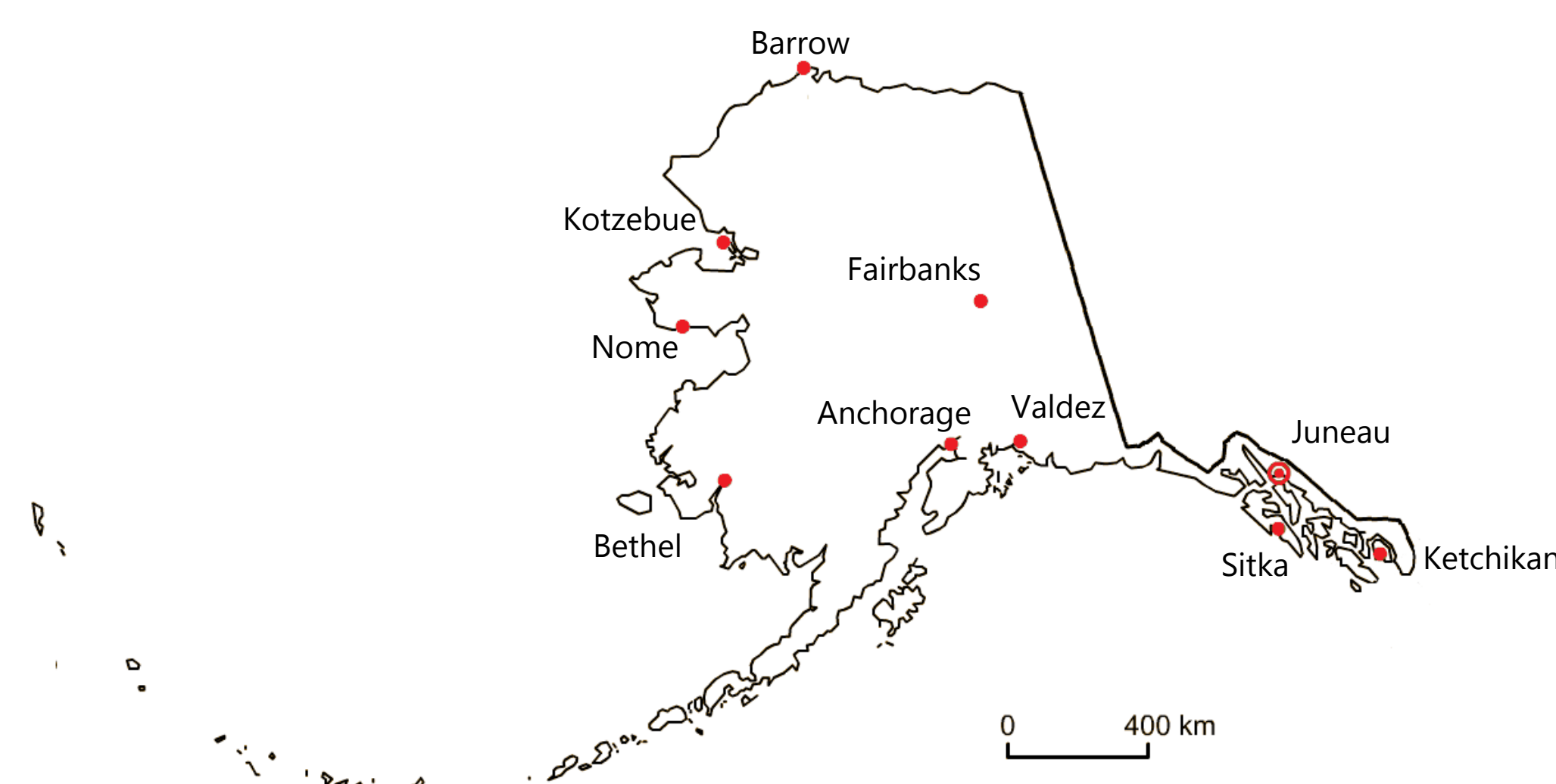


Figure 1. Map of Alaska with hub communities and urban cities indicated. Many rural Alaskans have to travel vast distances to reach a community (like one of these) that has the capability to diagnose and treat certain illnesses.

WHAT IS TELEMEDICINE/TELEHEALTH?



Figure 2. The Saban Free Clinic, in Los Angeles, California about to perform an electrocardiogram (ECG) for a child via telemedicine (*Telemedicine* 2011). This interaction between physicians and specialists may allow for increased quality of healthcare as a result of increased access to information and communication.

- Telemedicine is part of the larger concept of telehealth. Telehealth encompasses every aspect of healthcare via telecommunications, whereas telemedicine is focused specifically on treatment.
- The idealistic function of telemedicine is that patients can stay in their home-town facility and get a specialist's diagnosis of their condition via teleconference or videoconference (Figure 2).
- Alaska's current telemedicine projects are focused not only on specific areas of diagnosis and treatment, but are attempting to expand and increase the quality of telehealthcare that is available.

IS IT WORKING?

- Alaska telemedicine research has varied from treating suicide and alcohol-related disorders, oncology, otolaryngology, and diabetes since the introduction of telemedicine to Alaska (Allen et al 2011, Haozous et al 2012, Kokesh et al 2011, and Sequist et al 2011).
- Although telemedicine is still a relatively new field of medical practice in Alaska, with the initiation of the Alaska Federal Health Care Access Network (AFHCAN), Alaska obtained one of, "the world's most extensive telemedicine network[s]," (Hudson 2005).
- Research indicates that telemedicine decreases average travel distance of the patient, decreases overall energy consumption & medical cost (Yellowlees et al 2010 and Morgan et al 2011).
- Further implications include the fact that general expenditure should decrease as technology improves (Lamminen et al 2011).
- There are many telemedicine programs/networks in Alaska and they do appear to help in increasing the availability of healthcare, but more research should be done to help relieve some of the risk and increase collaboration between networks.

LIMITATIONS

- Telemedicine promotes the sharing of information, but there are physical, technological and legal constraints that need to be considered as telemedicine is used more frequently (Gardiner & Hartzell 2012).
- Although telemedicine is increasing in popularity, there will always be a higher risk associated with diagnosis and treatment due to the physical distance between the diagnostician and the patient.
- One way to increase the safety of patients, and to put them at ease, is to keep high-quality physician-to-patient relationships.
- These established relationships should keep the physician informed on the patient's current physical and mental states.

CONCLUSIONS

- The greatest step forward for telemedicine would be for telemedicine projects to collaborate further to increase effectiveness.
- It would be helpful however, in understanding Alaska telemedicine, if there were a current comprehensive report on Alaska telemedicine widely available. If there is a current version existing, it may not be accessible to the public.
- But the primary goal of telemedicine, and telemedicine research, should be to provide affordable quality healthcare for all Alaskans.

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