ALASKA AREA

The Alaska Area has a twenty-five year history with telemedicine that was driven from necessity by extreme weather, remote populations, poor transportation services, and high cost. Blue Cross and Blue Shield estimates that health care costs are 300 percent higher than the Lower 48 States.

Federal agencies spend an estimated $700 million a year on direct health care to over 200,000 Alaskan beneficiaries. In 1996, the Department of Defense, Indian Health Service (Alaskan Native Tribal Health Consortium), the Veterans Administration, and the U.S. Coast Guard started to share scarce resources and were able to save $2 million in less than 24 months.

In 1999, Congress began to support a combined federal interagency four year $30 million plan to connect 235 sites in a telemedicine network. The network is called the Alaska Federal Health Care Access (AFHCAN). AFHCAN is required to forge partnership arrangements with other hospitals in Alaska to ensure transfer of telemedicine and knowledge to the entire Alaskan population.

In September 2000, the AFHCAN project will use the Maniilaq Association (Kotzebue Service Unit) as a deployment test. Eleven Maniilaq villages, along with another sixteen, also participate in the on-going $2.8 million Alaska Telemedicine Test Bed Project funded by the National Library of Medicine under a competitive grant with the University of Alaska. Over 3-years, Community Health Representatives equipped with digital cameras and video otoscopes have referred more than 6,000 cases that average $38 apiece, excluding health care costs. The transmission occurred over regular phone lines. Project use evaluations still continues. A NLM contract amendment for $805,000 adds seven additional sites that are private sector clinics with a large native clientele.

The Alaskan telecommunications picture improved recently under the Federal Communications Commission's universal service program. In Funding Year Two, ninety-six rural Alaskan sites shared $4 million of the $6 million approved nationwide. The actual amount will be adjusted based upon the date of actual telecom equipment installation.

The Rural Utilities Service funded six federal grant initiatives for local telecom improvements that supported health care. The projects are listed below, but not described elsewhere in the report.

- **Bristol Bay Area Health**—$300,000, FY 1997
- **Council of Athabascan Tribal Governments**—$317,729, FY 1996
- **Norton Sound Health Corporation**—$313,025, FY 1999
- **Tanana Chiefs Conference, Inc.** —$259,064, FY 99
- **City of Galena, Yukon Koyukuk**—$186,490, FY 2000
- **Aleutians East Borough School District**—$271,848, FY 2000

1. Alaska Telemedicine Test Bed Project, University of Alaska

Area Office	Alaska Area
Indian Facility	Multiple native village clinic
Primary Use	Telemedicine
Use Status	Growing
Facility Contact	University of Alaska
Grantee	University of Alaska, Anchorage, Applied Science Laboratory
Funding	NLM Contract NO1-LM-6-3540, $1.99 million, plus $805,000 amendment, 10/1/96 - 9/30/01.
Grant Contact	Frederick W. Pearce, Ph.D., University of Alaska at Anchorage, Applied Sciences Laboratory, 3211 Providence Drive, Anchorage, AK 99508 Phone 907-786-4183, Fax 907-745-2259 Web site http://www.137.229.128.211/NLM/index.html

Summary **The Alaska Telemedicine Test Bed Project demonstrates that telemedicine was a viable alternative for remote clinics operated by community health aides.**

The Alaska Telemedicine Test Bed Project builds upon the organizational successes of prior telemedicine efforts to coordinate the replication of scaled, tested approaches to telemedicine and health care informatics in rural Alaska. Working partners include the university and civilian, military, and native health care organizations. Four regional health corporations and 26 villages participate in the project.

- **Yukon-Kuskokwin Health Corporation, Bethel**—Villages of Chevak, Hooper Bay, Kotik, Marshall, and St. Mary's
- **Norton Sound Health Corporation, Nome**—Villages of Elim, Gambell, Savoonga, Shishmaref, and Stebbins
- **Maniilaq Association, (Kotzebue)**—Villages of Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, Noorvik, Selawik, Shungnak and Point Hope (North Slope Borough).
- **Bristol Bay Health Corporation, (Dillingham)** —Villages if Goodnews Bay, Kolignaek, Manokotak, Perryville, and Port Heiden

The project used high school students to install computer workstation, digital cameras, and video otoscopes, and a printer at each site. The cart design was variable to meet space constraints in clinics as small as 600 square feet. Transmission occurred over a regular phone line. So far, over 6,000 consults have been recorded with a $38 cost average, excluding medical. Community health aides who met a minimal sixth grade education requirement manage the sites. The high school students taught the equipment use to the aides. A university coordinator integral to the project regularly contacts the aides to ensure continued use. The consults concentrated on ears, eyes, and throat, dermatology, and occasional emergencies such as consultation for animal bites. The project has three evaluation models designed to analyze issues and project benefits. One evaluation focuses on ear problems and effective medication treatment. The project has been extended into its fifth year by the National Library of Medicine that added seven remote private clinics that serve native populations. The project's success is linked to a simple operation, end-user staff support, and understanding that technology alone should not drive a project.

2. Alaska Federal Health Care Access Network

Area Office	Alaska Area
Indian Facility	Alaskan Native Medical Center, 194 tribal sites
Primary Use	Telemedicine
Use Status	Growing
Facility Contact	Vonni Carole, Director Tribal Support Services, Alaskan Native Tribal Health Consortium, 4141Ambassador Drive, Anchorage, AK 99508, Phone 907-729-1909, Fax 907-729-1901, E-mail <lcarole@anthc.org>
Grantee	Alaska Federal Health Care Access Network
Grant Funding	Congress, FY 99-2, $30 million (includes $4 million, OAT)
Contact	Linda Lekness (Director) Tom Bohn (Telecom), Steward Ferguson (Technology), and Ellen Provost (Project Evaluation), 4201 Tudor Centre Drive Suite 310, Anchorage, AK 99508 Phone 907-729-2260, Fax 907-729-2269, E-mail <afhcan@afhcan.org> Web site <http://www.afhcan.org/>
Summary	**The AFHCAN is ready to deploy telemedicine to 235 sites using the Maniilaq Association (Kotzebue) as a deployment test site in September 2000.**

The Alaska Federal Health Care Access Network (AFHCAN) project costs $30 million over four years to deploy telemedicine to 235 sites. A project office manages the project with the Alaska Native Tribal Health Consortium (IHS-related), Department of Defense (Army and Navy), the Veterans Administration, and the U.S. Coast Guard.

The AFHCAN project has successfully coordinated and completed the integration of communications by developing a hybrid network. This network includes Alaska's two long distance carriers (AT&T Alaskcom and CGI), several federal sector healthcare organizations, regional hospitals and rural clinics, including 37 member organizations. The network combines a hybrid of topologies including fiber optic, wire-line, unlicensed wireless radio, microwave radio, satellite, Internet, frame relay and private line. The integrated equipment ranges from a single DS0 (56/64K Private Line), a DS1 (T1 1.5Mb Circuit) to a new technology, the Satellite PRI (Digital T1 1.5Mb Circuit). AFHCAN also supported each village site in filing a federal application for a rural health care telecom discount with the Federal Communication Commission. The applications are filed yearly basis and for Year Two, Alaska villages received $4 of the $6 million approved nation-wide.

The Alaskan Clinical Engineering Services associated with the Alaskan Native Medical Center (ANMC) supports AFHCAN telemedicine delivery. ANMC is managed by the Alaskan Native Tribal Health Corporation, which provides primary and secondary teleradiology services to 42 service units. Radiologists use a Picture and Archiving Communications System (PACS) at 43 internal workstations, plus remote sites.

ACES used leading edge manufacturers and suppliers of radiology and are able to leverage their vendors via an internally developed performance relationship contract. This allows them to downstream the associated technology and financial risks. As such ACES/ANMC/AFHCAN has limited their exposure and finances by having internal trained personnel from ACES trained on each vendors equipment annually. This alleviates the high support costs incurred with most vendor support agreements. By working out all these details upfront, they have been able to "optimally package" a turnkey solution including maintenance and their own internal trained support. When deploying systems ACES has an inclusive bilateral financial portion of their arrangement, this returns approximately eleven percent of the purchased cost of the systems back to ACES, thus more than paying the system support ACES internally provides to the remote sites. This arrangement will allow the Alaskan project to better sustain the program.

In September 2000, AFHCAN will install equipment using the Maniilaq Association (Kotzebue) as a test pilot for deployment. The equipment rollout consists of an acquisition workstation; acquisition hardware; software, display workstation, web server, printer and network router. Medical equipment includes digital cameras, EKG, otoscope and scanner. Each site will be able obtain, view, create, and move permanent patient data records. The major equipment difference between AFHCAN and the University of Alaska Telemedicine Test Bed Project is the addition of an EKG peripheral, higher computer capacity, and that a touch screen replaces a keyboard.

The AFHCAN project funds most "one-time" costs with participating sites responsible for recurring costs such as equipment parts, extended warranty cost beyond year one, telecom costs, and staff training transportation and housing costs. AFHCAN will fund:

- Initial purchase of equipment, shipping and handling, and the first-year manufacturers warrant
- Equipment deployment, including assembly, burn-in and testing, re-packing, and shipping to member organization sites
- Installation costs which includes salary, per diem, travel, specialized transaction equipment and tools for Alaskan Clinical Engineering Support (ACES) personnel
- Support costs for the first 12-months following equipment installation, including toll-free phone support, replacement parts and shipping, and on-site support help as required
- Regional training sessions to train local Super-Users/Trainers
- Training materials, including videos, CD-ROMS and manuals

AFHCAN has not yet developed a sustainable model that includes training, business and legal costs, a help desk, and remote control for teleradiology equipment diagnostics. The AFHCAN evaluation model is an early stage. The first planned medical assessment planned is for ear treatments for improved patient care and treatment cost reductions.

Project funding from various agencies is transferred to the AFHCAN project office. Part of that funding includes $4 million from the Department of Health and Human Services' Office for the Advancement of Telehealth (OAT). OAT will require AFHCAN to meet its grant requirements for program use and will reserve $400,000 or ten percent for cost associated with travel to Alaska and routine project monitoring. In addition, OAT has awarded the East Aleutian Tribes $990,000 over 3-years to implement a local plan for six frontier communities. See section below for description.

3. Eastern Aleutian Tribes, Inc. (EAT)

Area Office	Alaska Area
Indian Facility	Eastern Aleutian Tribes, Inc. (EAT)
Primary Use	Telemedicine & Telehealth
Use Status	New Project
Facility Contact	Patty Linduska, Director of Grants/Program Development

Chris Devlin, Executive Director
Eastern Aleutian Tribes, Inc., 1600 A Street, #104, Anchorage, AK 99501 Phone 907-277-1440, Fax 9071-227-1446, E-mail <eat@alaska.net>
Web site under construction.

Grantee: Eastern Aleutian Tribes, Inc. (EAT)

Funding: OAT - FY 01-03 - $990,000

Grant Contact: See Facility Contact

Summary **The Eastern Aleutian Tribes is implementing a new telemedicine and Telehealth network in association with the school district in six frontier communities.**

The Eastern Aleutian Tribes (EAT) are located in the 8,029 square-mile area in the Bering Sea and Pacific Ocean with a land base of 6,985 square-miles. EAT formed a community partnership with the school district to maximize infrastructure resources and to sustain and improve health care for its native members by offering health care to the entire community. The school district received $233,767 from the Rural Utilities Service for local school and hospital high-speed connections. The school district and EAT combined their application to the Federal Communication Commission's universal service telecom discount program for a telecom discount that resulted in a $271,848 subsidy for Funding Year 2.

The Aleutians East service community is comprised of the six frontier communities of Akutan, False Pass, Nelson Lagoon, Cold Bay, King Cove and Sand Point. The permanent population is 2,500 with another 8,500 temporary residents during the peak-fishing season. The communities are geographically isolated from each other and from Anchorage. Airfare travel to Anchorage costs $550 to $1,000 with less costly sea travel available based upon weather conditions. Federally the area is designated as a Health Professional Shortage area, Medically Underserved Area, including medical, behavioral health, and dental.

OAT's grant funds will address the limited availability of physician specialty services, psychiatry, dental, case management and on-site supervision by physicians or mid-level providers for radiology or nutritional counseling. Existing phone consultation will be expanded through telemedicine's ability to transfer medical images; patient records and provides follow-on care for patients. Telemedicine consultations will occur via video conferencing and store-and-forward with a three-year plan for adding medical function areas. During year one, emergency medicine, ears/nose/throat, and dermatology will be available. Year two plans include radiology, dental and psychiatry with OB/GYN and nutritional counseling added in year three. The telehealth activities include administrative services connecting to EAT's Anchorage-based clinical director, continuing medical education and preceptorships by health professional students.

EAT supports the area-wide solution because the annual reoccurring cost base for Indian Health Service payments supplies less than 50 percent of the EAT budget. This small cost base also affects revenue from the Alaskan Federal Health Care Access Network (AFHCAN) which is estimated at $70,000 to $100,000 per year for three years.

Program sustainability is based upon cost savings from administrative and patient reductions in travel; patient revenue from the non-native and seasonal worker community; and, further identification of outside revenue resources. EAT's success in attracting a solid staff core with technical skills necessary to meet the vision for short and long-term health care helps local program development as well as coordination with the AFHCAN Project for an effective strategy.

4. Bristol Bay Area Health

Area Office	Alaska Area
Indian Facility	Bristol Bay Area Health
Primary Use	Telemedicine (teleoptometry)
Use Level	Sustainable
Facility Contact	Jim Pickard, DO, Bristol Bay Health Corporation, Dillingham, AK 99576 Phone 907-842-5201, Fax 907-842-9354
Grantee	Not applicable
Funding	$30,000 IHS Local Program Funds
Grant Contact	See Facility Contact

A Bristol Bay Area Health program is a 100% store-and-forward teleoptometry program with ANMC and the University of Southern California College of Optometry. The program started in July 1996 with $30,000 in IHS funds. The images are captured with an analog video camera and then digitized before e mailing to remote experts. The Eye Clinic sees 2,000 patients a year and on average sends 2-3 images a month to experts on cases that usually involve diabetic retinopathy. If you are interested in replicating this program, the eye doctor recommends a camera with high resolution. A T-1 transmission is used.