

TIIAP FY 1999
Project Narrative

Leech Lake Tribal Council

Grant # 27-60-99018

Health

Cass Lake, Minnesota

**BREAKING OUR BARRIERS: Reservation-Wide Collaboration for
Comprehensive Public Access to Specialized Health Care and
Wellness Information via Telecommunications**

(1) Project Definition

The applicant, the Leech Lake Reservation Tribal Council, is dedicated to improving the wellness of the Reservation community. The Tribal Council has resolved that it is imperative that the Reservation's telecommunication infrastructure must become more efficient and there is a need to set up collaborations, including memorandums of understanding and agreement, to maximize current and future telecommunication capacity. The purpose of this project is to create a sustainable tele-wellness infrastructure, starting with building capacity in the area of health and reaching into community networking; education, culture, and lifelong learning; public safety; and public services. As is the case in most rural areas of this country, there is an economic necessity to cross: disciplines; sub-cultures; cultures; Tribal, federal, state, and county governments; public and private sector services and businesses; and educational institutions to achieve comprehensive seamless information, services, and communications. If we do not adjust and develop our telecommunication system in concert we will truly be left behind our urban friends, likely to incur undue hardship and isolationism on our real end users, the residents of the Leech Lake Reservation.

Specific Needs: Residents in this rural area have always faced great difficulties in obtaining health care and access to health information. The travel distance, limited roads, harsh climate, unfamiliarity with urban areas and medical personnel often creates an atmosphere of self-persecution for timely and urgently needed health care services. Additionally, the majority of the residents are under severe economic stresses. Analysis of data, for a family of three from the Housing and Urban Development (HUD) Regional Office in Chicago, showed that 91 percent were rated at the low income level (HUD 2/98).

- The number of residents developing diabetes continues to increase, in both younger and older ages. The resultant cost, both monetary and quality of life, are devastating to families and the community. Diabetes is the leading cause of new blindness in adults 20-74 years old (Centers for Disease Control and Prevention, 1998).

- Many of the diabetic elders are homebound and require regular public health nursing services to avoid inpatient and nursing home placement. The Reservation is designated as a Home Health Agency Shortage Area, by the Health Care Financing Administration (HCFA). The Tribal Public Health Nurses currently have a waiting list of patients who need in-home services.

- Rural residents have out-of-pocket costs (loss of work time, child/elder care, home heating maintenance [freeze-up] for those who only have wood as a heating source, livestock care, and home security issues) that are currently not considered in the literature or in the data given to Congress to equitably determine the potential savings of telemedicine services. Additionally, these out of pocket costs create an extra hardship for our residents, who may choose to feed their families and bear the consequences of postponing their medical appointment until they require extensive costly procedures to save their life.

- Until just recently, there was not local access to the Internet. The ability of most health care professionals to readily access valid and reliable health information was cost prohibitive and certainly time consuming. The public still remains at a disadvantage, since most do not have in-home computers and given the economic status, cannot afford Internet services. The only public access on the Reservation to the Internet is one public library in Cass Lake, MN. Please refer to area maps for travel distances in Appendix B.

The Reservation is located in North Central Minnesota, about 200 miles north of the Twin Cities of Minneapolis/St. Paul, and 100 miles south of the Canadian border. The Reservation covers over 1,050 square miles or an area of 672,000 acres, most of which is located within the boundaries of the Chippewa National Forest. Included in the central area of the Reservation is Leech Lake, which has a shoreline of approximately 720 miles. The environment is typical of most isolated rural forested areas, beautiful pristine natural habitat for recreational and seasonal habitation and limited roadways that circumnavigate numerous lakes. Travel on the roadways is hazardous during the winter months not only from snow and ice conditions, but also extremes in below zero temperatures, which can create life and death situations.

The Reservation community includes parts of Beltrami, Cass, Hubbard, and Itasca counties, where, approximately 3,935 resident Indian people, and 22,287 non-Indian people live (1990 Census). The Indian Health Service (IHS) has a Service Unit (hospital and clinic) on the Reservation which combined with the Tribal Health Division P.L. 93-638 Self-Governance Health services, consisting of six satellite clinics, has an Indian patient enrollment of nearly 13,000 people. The diabetes rate among the enrolled patients is nearly 35 percent and over 50 percent for patients over the age of 50.

Projections from the Minnesota Planning Department, Office of Demographics, indicates that the total county populations of Beltrami, Cass, Hubbard and Itasca will continue to increase (about 10% a year) until the year 2020 (Gillaspy & McMurray, 1992). Thus, the need for health care services will continue to

escalate without respective increases in appropriated IHS dollars. Additionally, the Reservation community is considered a Medically Underserved Area (MUA) and a Health Professional Shortage Area (HPSA).

Telecommunication Solutions for Beneficial Outcomes: Three sites: the IHS Service Unit, Tribal Health Division (Cass Lake, MN), and Ball Club Clinic (satellite clinic-Ball Club, MN) will have video equipment and and Internet service installed. Two very remote satellite clinic, Inger (Inger, MN) and Onigum (Onigum, MN) clinics will have Internet service installed. (The Bug-O-Nay-Ge-Shig School clinic has access to the Internet from the school system.) Regular phone lines will be used for the home health services for patients who have phones (60 percent).

- Improve appointment compliance, appropriate and timely patient access to specialty medical consultations, and retinal eye exams for diabetes management, via store and forward and live teleconferences. The complication of diabetes can be greatly reduced with early diagnosis and through Staged Diabetes Management (Masse, Strock, Simonson, Bergenstal, & Etzwiler, 1998). Additionally, 90 percent of diabetes-related blindness is preventable through early detection and treatment (CDC, 1998).

Consider for example a fifty-five year old woman with a diabetic foot ulcer. Without telemedicine she will need to travel over 140 miles to receive specialized care. Many times patients, out of necessity, go without care, which may result in further infection and possible amputation. If this patient lived in a metropolitan area her primary care physician would refer her to a nearby diabetic foot specialist. This is not the case in rural North Central Minnesota. However, with telemedicine in place, this patient can access this specialized care without leaving her community. The patient and the primary care physician will have access to a consulting specialist and up-to-date care and treatment.

- Increase the coordination of care and communication between primary and specialty providers, for a substantial positive impact on patient health outcomes; using provider to provider teleconferencing and e-mail, from the IHS Service Unit and all the satellite clinics.

- Increase the compliance of homebound diabetic patients to prescribed treatments using telemedicine equipment over analog phone lines for in-home monitoring systems that link with the Tribal Public Health Nursing Department. This will reduce travel and travel time to the patient's residence allowing limited expansion of services. Some patients live over 40 miles (1-way) from the Department. (This service will only be available for patients who have telephones; approximately 40 percent of the entire population do not.) A survey by Moline (Dept. of

Commerce), *Virtual Reality for Health Care*, sites numerous studies that have shown a "cost-cutting" trend to treat more patients at home using telemedicine technologies rather than in the hospital.

- Patients who utilize local telemedicine services will save out-of-pocket costs. A reliable methodology will be developed that fairly reports the true cost (as referenced above) of rural Americans when accessing specialized medical services. By allowing patients to stay in rural hospitals, rather than transporting them to specialty care in urban centers, telemedicine may reduce health care costs in two ways: 1) by eliminating transportation costs, and 2) by keeping patients in rural, and typically less expensive, hospitals (Emery, 1996). It is critical for Congress to understand the actual disparity and economic implications when rural citizens become ill, not just health provider expenses, to ensure appropriate future reimbursement.

- This project will provide an innovative example of how to create pseudo libraries using existing satellite clinics for public access to Internet health information, both during business hours and with the help of volunteers, weekends and evenings. People need good information if they are to make decisions about how to maintain their health and where, when, and how to use health care services (Patrick & Koss, 1995).

- Establish collaboration opportunities from non-health care telecommunication users to share services/hardware/expertise in concert that will improve sustainability and ultimately the wellness of the community we all serve.

The initial focus, (diabetes services) of this three year tele-wellness project is a collaborative effort between the Tribal Council's Health Division; Regions Hospital, St. Paul, MN; HealthPartners Foundation, Minneapolis, MN; the IHS, Bemidji Area, Cass Lake Service Unit (hospital/clinic); Paul Bunyan Telephone, Bemidji, MN; Merit Care, Fargo, ND; and St. Luke's Hospital and Clinics, Duluth, MN. Currently, there are no telemedicine services on the Reservation and a limited telecommunication infrastructure.

Regions Hospital, HealthPartners Foundation, IHS Bemidji Area, the Cass Lake Service Unit, and Paul Bunyan Telephone Company has worked closely with Reservation staff for the past year planning and researching the application of telemedicine on the Reservation. This effort has been very well received by the residents and professionals on the Reservation and has resulted in the primary collaboration relationship for this application. The other medical collaborators, Merit Care and St. Lukes, have a collaboration relationship that will fold into, and be compatible with the proposed infrastructure development. Given

the complexity of developing the proposed infrastructure, it was determined to approach the identified unmet needs systematically and in small increments to ensure successful accomplishment. For this reason the budget and work plans are reflective of known costs of the primary collaborators. Honestly, it is not currently known what the extent of the total in-kind contribution will be from the other collaborators. However, there will be no additional need for federal dollars to accomplish the proposed goals. (The IHS staff in-kind contributions are federal dollars and not sited in the budget.)

The following businesses and educational institutions will collaborate with the above collaborators once the compatible infrastructure is established. This system will be the final phase, realistically year 3, of the tele-wellness system that will create an effective, efficient seamless network of health/wellness information for the residents of the Reservation: Bug-O-Nay-Ge-Shig Tribal K-12 School, Bena, MN; Cass Lake-Bena Public School, Cass Lake, MN; Laporte Public School, Laporte, MN; Walker-Hackensack-Akeley Public School, Walker, MN; Leech Lake Tribal College, Cass Lake, MN; Bemidji State University, Bemidji, MN; and the City of Cass Lake, MN. The total of these collaborations represent all of the major employers on the entire Reservation.

(2) Evaluation

Qualitative evaluations will include: utilization surveys of all patients who's medical condition could utilize telemedicine technology, including appointment compliance if telemedicine services were not available; regular written surveys of professionals and telemedicine patients to measure user satisfaction and suggestions for improvement. Surveys will be reviewed and evaluated by the Reservation's Project Coordinator/Trainer with each of the specialist provider sites. There will be quarterly teleconference meetings with the Project Director, Project Coordinator/Trainer, and all respective site Coordinators. These meetings will analyze surveys and recommend adjustments based on user feedback. Data collection will be ongoing.

Quantitative evaluations will include cost comparisons to IHS Contract Health dollars previously spent for off-Reservation diabetic care (FY 95, 96, 97) to dollars spent after telemedicine services are available (Please refer to Appendix H). Note that while the data in Appendix H has a "Diabetes" cost, current IHS data entry protocols require many of the true costs of diabetes services to be placed in the "Heart Disease" category as a result of atherosclerosis from diabetes. Data will be collected from all patients, all encounters.

An outside evaluator with 29 years of experience with the IHS will be contracted to analyze and determine the actual costs

of diabetes services. The evaluator will also work with Reservation staff to develop a formula to determine out of pocket costs for access to specialized services. Additionally, HealthPartners will provide an Ph.D. level evaluator to measure changes in: number and type of yearly encounters, total costs, and changes in the diabetic population.

Each of the Tribal satellite clinics (6) will record the number of patients/community members who receive instruction on Internet use and keep a log of the total number of people who use the Internet.

(3) Significance

Innovation: The applicant understands that TIIAP is encouraging innovative tools rather than access, unfortunately we have not even reached the starting line yet. A search of the literature including previous TIIAP grantees finds similar technology, rural populations, and Indian reservations successfully utilizing and providing services. However, we would like to ensure that our tax dollars are used efficiently and effectively by stretching the dollar and the concept of collaboration to be inclusive of every entity that uses telecommunications in our community. This is the same concept that our electrical coop uses to ensure everyone has adequate, economical electricity. Telemedicine holds great promise for improving the services and the quality of life in rural communities. Experience to date, however, suggests that with low populations density, many rural communities lack sufficient demand for services to support the sophisticated telecommunications infrastructure required to sustain advanced telemedicine systems (Puskin, Mintzer, & Wasem, 1997). By maximizing the current telecommunication infrastructure (i.e. sharing T1 lines, technologists, and hours of operation) and focusing on the needs of the community as a whole, this project will produce locally accessible comprehensive services. While the initial focus of this project is in the area of health, specifically diabetic care and prevention, it will cut across all of the application areas since it is difficult in rural areas to sustain utility services independently. Typically, health care telecommunication needs do not require full T1 lines, which equates to the following peripheral opportunities:

In the area of community networking: this project will link with other local community sources to help community members access information from county and federal governments, colleges, and universities. This networking is important because of the environmental, social, and behavior determinants of health, the base of information that can help improve or maintain health is much broader than that of information solely about medical issues (Patrick & Koss, 1995).

In the area of education, culture, and lifelong learning teleconferencing: Tribal and IHS health care staff will provide limited classroom presentations for K-12 schools (n=4) in year 3. Tribal and IHS health care staff will provide cultural sensitivity training for the collaborating specialist providers. And, the specialist health care providers will provide continuing education opportunities for local staff.

Pseudo Library Model: In the area of public services: Reservation satellite clinics will offer training and access to the Internet, similar to public library accesses to information on the Internet including evenings and weekends. Clinic staff will also be available for answering questions about newly acquired health information. Additionally, the Tribal Project Coordinator/Trainer will be responsible for developing a Health Division web page for health and public service information. Internet community planning and interdisciplinary information sharing encourages collaboration at the university, in the community and elsewhere, including participation at all levels of business and education (James-Deramo, 1999).

In the area of public safety: the community will be able to access product safety, recall, and environmental hazard information and e-mail law enforcement officials. Additionally, Tribal court information will be available on the web page.

(4) Project Feasibility

Funduscope Technical Approach : Dr. Lloyd Hildebrand, a world leader in telemedicine, has provided consultation and advise on interventions for the Reservation's diabetic population. The technology developed by the University of Oklahoma evolved into the Inoveon Corporation, now directed by Dr. Hildebrand. The Inoveon System uses the gold standard for assessing diabetic retinopathy which is stereoscopic fundus photography interpreted in qualified reading centers by specially trained non-physician readers under the supervision of a retinal specialist.

The technology consists of a Zeiss fundus camera. This floor mounted equipment functions as a lens system for a 35mm camera body, and is required to image the internal structures of the eye. A 35mm film-based camera is used in traditional fundus photography, however the Inoveon System replaces this camera body with a digital camera. This filmless camera replaces the film with a CCD chip, which captures the image. This image is transferred to a computer via a connection (called a Firewire connection). The workstation is an off the shelf computer with sufficient memory and CPU processing speed to optimize management of large sets of image data. The display monitor is specially designed to view the images in three dimensions by allowing "stereo display". This allows the retinal images to be displayed three dimensionally which improves the diagnostic accuracy of the

study. This is especially important for reliable detection of clinically significant macular edema and some forms of proliferative diabetic retinopathy.

(a) interoperability: The Inoveon System has operationalized this research protocol for clinical use by converting from film based photography to a digital system. By deploying digital (vs. film-based imaging) distributed telemedical services can be placed in primary care settings to capture the essential data. These images can be sent electronically to a centralized reading center (i.e. Vanderbilt University Fundus Photography Reading Center) for expert interpretation. From this interpretation a final stage of disease is determined, and a recommendation (based on the American Academy of Ophthalmology's Preferred Practice Pattern for Diabetic Retinopathy) is made and sent electronically to the sending site.

(b) technical alternatives: Nothing on the market currently compares to this system.

(c) scalability: The integration of multiple distributed sites linked to a centralized reading center using digital technologies creates a scalable solution. Furthermore, by integrating disease management with telemedicine and e-commerce, this project will be able to create economies of scale that allow for diabetic retinopathy services beyond screening (i.e. answering the question "is there retinopathy present?") to incorporate disease management decisions (i.e. answering the question "can this patient safely return for another evaluation next year or does this patient require laser surgery?"). Answering the disease management question creates efficiencies for the patient and health care system by reliably identifying the high-risk population and safely identifying the low risk population that only needs annual follow-up.

(d) maintaining the system : Business Rules
The Application ensures the telemedical diabetic retinopathy disease management business process, developed by Inoveon, is executed as designed. Fundamental elements include:

(i) appointment scheduling, (ii) digital retinal photography, (iii) digital image reading, (iv) analysis of reading results and generation of algorithmic recommendation, (v) recommendation reporting to the patient care site, and (vi) administrative reporting.

Inoveon System's suite of applications implements a client/server approach using TCP/IP (Internet) networking protocols to control the workflow and manage the data required to support diabetic retinopathy evaluations. In addition to guaranteed secure data delivery, the application controls access to the service and enforces the business rules and processes (i.e. quality assurance).

In-Home - Technical Approach: HELP Innovations Inc. has developed a two-way interactive audio/video connection over standard lines. The POTS (plane old telephone system) home based video system by HELP has been used at Regions Hospital with great success. The system will be used in this grant for following home bound diabetic patients.

(a) interoperability: The system runs in "standards" or H.324 which allows the system to work with other POTS based video systems, Region's current HELP system has successfully linked up with other H.324 systems. The HELP system allows for multiple inputs: blood pressure, blood glucose testing, and stethoscopes.

(b) technical alternatives: PC based video systems were looked at and it was determined that the end users (in home) were not comfortable with operating a PC. The HELP system has multiple inputs which many other POTS based systems do not. ISDN would be preferred but to the remote location ISDN service is not an option.

(c) scalability: The project will start with 12 systems. Expansion of the system will be directly impacted with users response and comfort levels of the Nursing staff. Currently, the Nursing staff spends over \$38,000 dollars a year for travel to remote homes. The system will reduce this expenditure.

(d) maintaining the system: Maintenance and training are provided by the vendor. Most maintenance is done by the vendor calling onto the system. If the problem can not be resolved the vendor over-nights a new video box.

Telemedicine Systems

Technical Approach: The Intel TeamStation System is a PC based Video Conferencing system that will include a cart and 32" viewing monitor. The system adheres to all existing standards and with the use of the Madge Switched will allow the telemedicine system to use varied speeds. This is needed due to the fact that one major receiving site operates at 384kb and the other operates at 512kb. The AMD-2500 General Examination Camera will allow high resolution video images. The camera is able to send both still and live images. Still images can be saved on the Intel PC and reviewed at a later date; or a Diabetic Wound specialist can view previous pictures and check on the progress of wound healing.

(a) interoperability: The Intel TeamStation runs H.261/263/320/323 Video; G711/722/723/728. The PC can also be used to access Internet when the video is not being used.

(b) technical alternatives: The video will be running over T1 lines. Working with Paul Bunyan Telephone (PB), it was determined that we would see significant cost savings if we ran the video using Internet Protocol. This would allow PB Telco to

sell us a fractionalised T1. ISDN service is not an option at the two clinics. We will have the option to "back hall" video into Fargo, ND for dial up service.

(c) scalability: The three video systems will be a spring board for expansion into other areas. As the telecommunication infrastructure grows so will the access of ISDN services, which should reduce line charges.

(d) maintaining the system: Maintenance of the system is written into the vendors contract. The vendor will train on site staff for minor repairs. The vendor can diagnose and fix many problems via a dial in modem. The vendor currently supports over 20 school videoconferencing systems in northern Minnesota. Telecommunication issues will be addressed by the Tribal Technolgist and PB Telephone Company.

Applicant Qualifications (Please note Advisory Committee member vitas are available upon request.)

The Tribal Health Division, Clinic Director/Health Planner will oversee and serve as the Project Director for this grant project. The Project Director is post-doctorate level in health and education and an experienced grant administrator (please refer to vita in Appendix E). The Division currently manages 30 percent of the health care services on the Reservation and is considered a "Mature Contractor". The Tribal Health Division is a division of the Leech Lake Reservation Tribal Council which manages over \$10,000,000 of other programs and services on the Reservation. The Reservation's Management and Information Systems Department will work directly with the Health Division and Regions Hospital staff to purchase and install the telecommunication system.

Regions Hospital has extensive experience in telemedicine. The telemedicine program at Regions Hospital began with a Department of Corrections (DOC) contract in 1996. The majority of specialties within Regions have seen these patients via telemedicine, and through this program Regions Hospital has conducted over 700 telemedicine visits. Additionally, through February 1999, the Burn Center specialists have seen 63 patients in 178 telemedicine visits. Regions Hospital also has a contract with Gillette Children's Hospital and Merit Care to see patients via telemedicine.

The telemedicine and home health telecommunication operation will utilize the training and expertise of Dr. Robert Cox, Hays Medical Center, to help develop policies and procedures, patient/staff relationship training, and provider technology training. Dr. Cox and a colleague have agreed to provide in-kind, on-site training for Reservation and IHS staff.

Budget, Implementation Schedule, and Timeline: Please refer to the timeline of implementation of this three-year project found in Appendix G and the budget found in Part VI.

Sustainability: This project will create a sustainable tele-wellness infrastructure beginning with building capacity for telemedicine that will be compatible with three of the major tertiary care hospitals in the state. Once the telemedicine operation is ready, it will merge into the telecommunication system on the Reservation to purchase additional phone lines in some communities and share existing lines in others. The collaboration and sharing of telecommunication services is an economic necessity as well as a security for long-term sustainability.

The use of the satellite clinic pseudo libraries will reduce the barriers of access to health information. One recognized failure of the health care market is inadequate information on comparative cost, quality of services, and providers (Patrick & Koss, 1995) for patient information. Additionally, most people seek information locally (culturally comfortable) from within their community or surrounding communities.

Much needed hospital and clinic revenues will be kept in the rural communities by: facilitating more rapid "repatriation" of patients discharged from distant tertiary care centers, facilitating the treatment of patients at an earlier stage of illness, and by local access to educational programs.

Congress has passed the Balanced Budget Act of 1997 which included state provisions requiring that HCFA begin reimbursing for Medicare Part B Telehealth services in more than 700 rural HPSAs (Grigorian, 1998).

(5) Community Involvement

Partnerships: Please refer to Appendix F for a complete list of formal partners, to-date. As the project progresses, any future community contributor can be folded into the tele-wellness system.

Involvement of the Community: The Tribal Council developed a strategic plan six years ago, which included telecommunication services. Overall the plan was a tremendous effort of all community stakeholders to define a vision of how to meet the health care and wellness needs of the Reservation community. The interest of Regions Hospital and HealthPartners to work with the Reservation community members to help design this grant application has been very well received. (Far too often rural providers are unwelcome or disregarded as a vital link in the chain of service for comprehensive health care.)

A special two-day meeting was scheduled at Cass Lake. This meeting involved community and medical leaders from the Reservation, St. Paul, and Minneapolis who voiced their needs, concerns, and helped plan this project. Additionally, there have been numerous meetings with all of the major employers and stakeholders in the community. Please refer to Appendix A for evidence

of community support and for other Tribal Divisions, (Organizational Chart Appendix D) including the Tribal College who will benefit from this project.

An Advisory Committee was formed including physicians, researchers, engineers, community leaders, and representatives from all of the collaborators (See Appendix I). This interdisciplinary group will be responsible for informing and getting feedback from key stakeholders and the end users regarding important developments in this project. They will meet quarterly in the first year, biannually in the second and third year.

Senator Wellstone is very active and helpful in the community, please refer to his letter of support. Due to the limited time frame, the other Congressmen have been asked to forward their letters directly to Mr. Irving (the Applicant trusts this is acceptable, this method was learned at the grant writing workshop).

Support for End Users: The Inoveon System diabetic retinopathy has been clinically tested, comparing its clinical performance in a population of diabetic patients at the Carl Albert Indian Health Facility in Ada, Oklahoma.

In order to support and ensure end user's comfort with the telemedicine system monthly introductory and training courses will be offered the first year of the project. Patients will have the opportunity to visit their home (satellite) clinic and witness a demonstration of the equipment, an explanation of its uses, and the chance to ask questions.

In addition one full time Project Coordinator/Trainer and one full time Technical Support staff will be hired to work with the system (see Budget Narrative, Personnel 424A). The isolation of the Reservation necessitates additional trained staff.

Privacy: Patients' rights of privacy will be observed at all times. Video and recorded telecommunication sessions will be treated as part of the Medical Records, and retained in the secure Medical Records area.

Security: With the exception of the primary image files, which contain no identifying patient information, all data transferred by ftp is encrypted during transmission and during local computer storage to ensure privacy. Data transferred using Web protocols is encrypted using the Secure Sockets Layer protocol. These approaches to data transmission and security are in compliance with the latest recommendations from the HCFA (Nov., 1998) for Internet communication of HCFA Privacy Act-protected and other sensitive HCFA information. Access to client workstation roles is restricted by encrypted user name/password combinations, and machine address (IP number) under server control.

(6) Reducing Disparities

Description and Documentation of the Disparities: Virtually every citizen in the Reservation community has the ability to become electronically empowered. Please refer back to Section (1) Project Definition for the description of the population.

Low socioeconomic status is a factor that encompasses families and individuals who have limited incomes or low paying jobs. Low socioeconomic groups tend to live in substandard housing and have substandard water and sewer systems. The Healthy People 2000 document has stated several health relationships to low socioeconomic status.

Health disparities between poor people and those with higher incomes are almost universal for all dimensions of health. Those disparities may be summarized by the finding that people with low income have death rates that are twice the rates for people with incomes above the poverty level. If all people with diabetes received recommended screening and follow-up for eye disease, the annual savings to the federal budget could exceed \$470 million (CDC, 1998).

Strategies for Overcoming Barriers to Access: This proposal is dedicated to ensuring comprehensive health care and health related services.

Currently, the IHS Service Unit has 11 primary care providers. Additionally, one physician and two Tribal mid-level providers rotate between the six satellite clinics. There are 11 acute care clinic examination rooms for these 11 providers in the Service Unit clinic. The lack of timely access to care creates inefficiency and causes patients to wait for approximately 30 days for a scheduled appointment. This results in a limitation of access for health care services, for people who already have a documented low health status. The current access to specialty care at satellite clinics is drastically limited which affects the ability of the staff to perform efficiently and creates a stressful environment for the patients. Additionally, the inappropriate waiting time for patients who do not have an appointment causes patients to seek services off the Reservation or unfortunately, postpone professional help until their condition is intolerable. The proposed telecommunication solutions will certainly have a positive impact towards improving access and ultimately the health status of the community.

(7) Documentation and Dissemination

Documentation Plan: It is planned to generate quarterly reports for the Advisory Committee (internal) and annual progress reports for funders and stakeholders (external). The Project Coordinator/Trainer will track consultation numbers by specialty in order to track needs. In addition, a chronicle of

qualitative events will be kept by the Project Coordinator/Trainer who will have a presence at all of the clinic sites. The two outside evaluators will provide summary documents to the Project Director.

Information Dissemination Plan: This group intends to disseminate information about this telemedicine project via conferences, publications, and other opportunities that come to their attention. It is planned to present abstract(s) at the annual American Telemedicine Association meeting. Updates on the project will be presented at the Annual Burn Retreat at Regions Hospital and at the Annual Surgery Department Retreat at Regions Hospital. In addition, articles about the project will be submitted to appropriate journals. The Health Division website will offer ongoing updates on progress besides providing health information.