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Almost all education directors feel that they could influence change at KiHS, another indicator of the strong sense of engagement in KiHS at the community level. When asked what changes they would seek to make in the future, many pointed to the need for better visibility and promotional strategies for the program in the community. There was a suggestion for more intensive on-site and professional guidance counselling, and more community visits by the KiHS principal. Suggestions about improved infrastructure, including facilities (classrooms), computer equipment, and Internet access were also made.

The creation of, and continued commitment to operate, a community-based steering committee as an advisory part of the governance structure accounts, in part, for this sense of inclusion. It is evident, however, that the management philosophy and style of Keewaytinook Okimakanak and KiHS have also greatly contributed to the strong sense of community participation in the program. The steering committee may only meet twice a year, but there are frequent informal and open exchanges between education directors and KiHS management that greatly enhance the community responsiveness of the program.

### ***Parent and Student Satisfaction with KiHS***

This section explores student and parent satisfaction with KiHS, drawing on parent interviews and student surveys. It covers such topics as: what is expected of KiHS by parents and students, the demand for KiHS services, satisfaction with the learning modalities offered by KiHS, student self-efficacy, and student satisfaction with course offerings.

A clear message conveyed in the parent interviews was that students need a valid option that will allow them to stay in their communities and complete high school. Nearly all parents (90%) feel that students should be able to finish high school without ever leaving the community. Despite the greater selection of courses available at the grade 11 and 12 levels in conventional high schools, most parents (70%) do not think it is essential for students to take courses outside of the community in order to have the full benefit of high school. Most parents (90%) feel that KiHS should offer more than a grade 9 and 10 program, suggesting strong support for a full high school program and a validation of the new expanded mandate of KiHS.

In support of these results from parents, 39% of students feel that it should be possible to graduate by taking only KiHS courses through high school; however, when asked to reflect on their own decisions, only 19% of students would want to complete high school exclusively in the community, with 53% preferring to have a mixture of high school experiences both within and outside of the community.

KiHS is the first choice for 40% of parents interviewed; the majority of parents, however, would prefer to send their children to schools outside the community. Students echo this pattern more strongly, with 90% preferring to go to other schools outside the community. The information obtained indicates that the majority of students at KiHS are attending because they feel they have no other choice.

This finding reinforces the opinion of community stakeholders that KiHS is a fallback option for students who have been sent home from Northern Nishnawbe Education Council (NNEC) programs. This underlines the need for KiHS to rethink its how it is perceived by parents and students. Indeed, one education director reports, “in our community it’s hard to convince people that this is a real high school, and these are real courses.” This viewpoint appears to be prevalent and suggests that a strong marketing response is needed. Nonetheless, almost all parents (90%) see KiHS as an important way for students to stay connected to their communities while completing high school.

The learning modalities offered by KiHS involve asynchronous course delivery using Moodle online courseware and, to a lesser extent, synchronous course delivery through Elluminate and video conferencing. Teachers report that asynchronous course delivery allows students the freedom to complete work when they have the opportunity to do so. This flexibility, teachers note, is a critical part of the service, allowing KiHS to cater to the diverse social needs of its students. Students can work according to their own schedules, and can work around frequent absences that, for many students, may be uncontrollable. Teachers note that they have fewer classroom management interruptions, and students have fewer distractions when working independently. Teachers also note, however, that asynchronous course delivery is most appropriate for courses requiring extensive reading and writing, or for courses where digital media artwork is the product. Teachers find that math and science presents many more challenges for students in an asynchronous format, noting that they are unable to watch students perform calculations and assist them in real time.

An asynchronous learning modality, where a significant degree of student independence and self-motivation is required, is not favoured by all students. The student survey results indicate that only 14 of 26 students surveyed learn well when they are working by themselves on assignments. And, only 7 of 26 students reported that they learn well when taking courses at KiHS. Thus, while asynchronous delivery may work very well for a significant proportion of KiHS students, there are many for whom it does not; these are students who may not be ready, or do not have the study skills, to work in a context where considerable self-motivation is required.

Elluminate and Adobe Connect represent an attempt to bring a more social constructivist learning modality into play. This online courseware has a limited synchronous capacity. Students can listen to their teacher speaking while viewing an interactive whiteboard, or the contents of their teacher’s computer screen. Due

to bandwidth limitations, they are unable to respond using audio, although text messaging can be used.

Teacher's concerns with this type of course delivery include the following: the amount of work required to prepare an Elluminate lesson given the low student participation; Elluminate is not a stimulating medium for students because it lacks video; Elluminate requires more bandwidth than is available in some communities; and, importantly, Elluminate sessions begin at a scheduled time, which is not compatible with the flexible arrival and departure times of students.

Although Elluminate has only been in use since the beginning of the 2007 school year, video conferencing, a second synchronous modality, has been in use at KiHS to a limited extent throughout the pilot project. Video conferencing is seldom used for instructional purposes at KiHS. Teachers cite equipment malfunction, or lack of understanding of operation as barriers.

Student self-efficacy or a student's own impression of his or her ability to succeed is a very important predictor of student success. Students who believe they can succeed in school, do succeed in school. Students at KiHS believe they can succeed in a computer-mediated learning environment, but are less confident with the non-traditional classroom setting. Student satisfaction with a computer-mediated learning environment is high, with most students (81%) declaring that they can learn well with computers. This is echoed by teachers who note high student enthusiasm for computer use. This finding points to the value of KiHS in terms of developing computer and network literacy amongst its students.

Students were most motivated to select "I learn well when I am using a computer," a statement which reveals positive self-efficacy towards the KiHS computer-mediated learning environment. However, lower enthusiasm for the statements, "I learn well when I am working by myself on assignments," and, "I learn well when I have no one telling me what to do," do not reveal strong self-efficacy for the KiHS asynchronous course delivery model, which requires significant self-motivation and independence. Additionally, students had low enthusiasm for the statement, "I learn well when I am taking KiHS courses," a result that should be tempered with the observation that students had equivalent lack of enthusiasm for a regular high school classroom; many students may, indeed, feel that they do not learn well at all in school.

Although these results are by no means definitive in their assessment of student self-efficacy at KiHS, there is evidence that the KiHS delivery model may not be aligned with most students' beliefs about where and in what context they are able to succeed.

KiHS began the five-year pilot project by offering courses only at the intermediate (grades 9 and 10) level. The first senior courses at the grade 11 level were offered in the 2004 school year, with additional courses (including grade 12) added in subsequent years. In the 2007 school year, KiHS began to offer academic-level courses leading to college or university entrance, making it the only First Nations school in the district presently doing so.

A majority of students surveyed indicate they would like more course options in all categories given. Of note is student interest for more course options at the grade 11 and 12 level and at the college and university level. All senior courses currently offered are at the workplace level. KiHS may be well-suited to offering upper-year courses for college and university entrance, as the learning modality is likely to work well for students who have the maturity and motivation to earn credits independently, and have the desire to proceed to higher education.

## **Recommendations from the Review**

A number of recommendations were made in the KiHS review. In conclusion, a few of these recommendations are highlighted:

1. KiHS should embark on a public awareness campaign and employ engagement strategies aimed at key community stakeholders, namely, students, parents, and education leadership to re-image KiHS as a valid and exciting high school option for a wide range of learners of various ages.
2. To the extent that it is possible to transfer practices from one community to another, KiHS should continue to identify best practices from communities that have higher credit-earning efficiencies, course success rates, and participation levels, and apply these, as much as possible, to communities that have been less successful.
3. KiHS should expand its offering of courses for students of the maturity and academic readiness who are most likely to benefit from the KiHS learning modality. The school should offer more courses at the senior level, experiment with college and later university preparation courses, and continue to develop its academic-level program. Also, to meet the needs of more mature students it should increase the profile of its PLAR offerings.
4. A certified teacher with guidance qualifications should be hired to fill the role of guidance counsellor; s/he should advise current and prospective students on educational issues, career planning, and personal development, and coordinate the provision of counselling services to students and parents.
5. Many students cited a need for better high-speed Internet in their surveys. There is no doubt that student participation and performance would be improved if there was consistent access to high-speed Internet in all communities. It was suggested that communities devote bandwidth exclusively to KiHS. Bandwidth issues may also contribute to student and teacher frustration with Elluminate.
6. As an Internet high school, KiHS requires adequate resources to provide and maintain the highest quality hardware and software to meet the learning needs of students. It is recommended that sufficient resources be dedicated to replacing and repairing equipment and software and to providing regular maintenance, troubleshooting, training, and technical support for mentors and students.

## Case Study 3

# The K-Net Approach to Water Treatment

Barry Strachan

### Introduction

The delivery of safe potable water to individual community members is a priority for First Nations throughout Canada. The Keewaytinook Centre of Excellence is committed to meeting the needs of its clients through the quality delivery of affordable technical and academic training programs.<sup>1</sup> Keewaytinook is a one-stop source for certification courses, academic upgrading, and continuing education units.

Qualified trainers at the Keewaytinook Centre of Excellence provide operators with excellent foundation skills (specifically in mathematics, communications, public health/microbiology, and water chemistry) and hands-on water plant operator training. The centre's services also extend to the private sector, the municipal sector, and to provincial and federal government utility workers.

The purpose of the remote-monitoring initiative, known as Anishinaabeg Kakenwaydemiwatch Nepi,<sup>2</sup> with 18 partner First Nations and their 3 tribal council technical services departments in northwestern Ontario, is to facilitate the installation and delivery of an affordable and sustainable remote-monitoring system in the water and waste water plants in each of these First Nations where such a plant exists. This service will fulfill the unique needs of these First Nations and will be a partnership that will also take into consideration the training, support, and sustainability issues of the project, as the operation of this service is transferred to the First Nations and their second-level support organizations. This service will be, at a minimum, equal to what is available in water and waste water plants located in municipalities that meet provincial requirements for the production and maintenance of environmentally and locally operated safe water operations in each community. The final solution will be capable of providing and offering a long-term system for managing and sustaining safe water systems in each community.

This service will allow access to plant monitoring services not previously available in these facilities. A 24-7 monitored operation employing local and regional qualified technicians is required. Training utilizing distance education, and ongoing data collection for research and reporting will now be possible for those that use the service.

The goal of the remote plant monitoring project is to identify and select a vendor to bring the necessary infrastructure and services to support remote water

and waste water plant monitoring in the communities that best meet the requirements as identified in this RFP (request for proposals). The remote plant monitoring vendor will:

- Provide remote plant monitoring infrastructure for water and waste water plant equipment located in the partner rural and remote First Nations;
- Deliver in each First Nation a water and waste water monitoring service equivalent to those available in other centres that meet provincial and federal monitoring requirements;
- Provide an online, high-speed data connection from each of the plants to a centralized monitoring system that is capable of identifying and distributing messages to qualified plant technicians who are scheduled to cover a 24-7 troubleshooting service;
- Create a three-year transfer strategy that will ensure all the partners have the capacity and resources required to sustain the ongoing operation and support for all the partner First Nation water and waste water plants;
- Connect each plant to a broadband service capable of supporting online training and troubleshooting services using video conferencing equipment; and
- Work with the local First Nation plant technician(s) to ensure the water and waste water plants are operating and maintained to provincial and federal standards and are available for all local businesses and residents.

## Endnotes

- 1 See <<http://watertraining.ca>>.
- 2 See <[www.wateroperations.ca](http://www.wateroperations.ca)>.

# Case Study 4

## Telehealth/Telemedicine Services in Remote First Nations in Northern Ontario

Donna Williams

### Introduction

Keewaytinook Okimakanak Telemedicine (KOTM) is Canada's busiest and largest First Nations telemedicine service, encompassing more than 25 sites as of fall 2008. KOTM works in partnership with the Ontario Telemedicine Network (OTN) to provide integrated access to the provincial and federal governments through the Ontario Ministry of Health and Health Canada's First Nations and Inuit Health Branch (FNIHB) service providers to deliver health programming on-reserve. For the past eight years, KO Telemedicine has designed, implemented, and refined a First Nations service model that supports and sustains telemedicine services in Ontario's most remote and northern communities.

KO Telemedicine developed as a pragmatic response to community demand for access to quality health services closer to home. By the late 1990s, most First Nations in the Sioux Lookout Health Zone felt that the regional health service delivery model, in which physicians, nurses, and allied health professionals intermittently fly in to communities to triage and treat clients, and clients fly out to secondary and tertiary facilities to receive specialized care and support, was not—on its own—able to meet the holistic health needs of their members.

Specifically, First Nations noted that the itinerant medical model was not well-suited to building and sustaining health teams, that it contributed to significant discontinuities in care, and that it disempowered local health workers by marginalizing their capacity to acquire new skills and transfer health knowledge to their community client base. At the same time, the model tended to reinforce health dependencies between medical “experts” and people living in remote and isolated communities. First Nations gained access to health expertise when the doctor visited or during a nurse's clinic. Consequently, diffusion of disease self-management strategies and uptake of self-care protocols were dismal (Health Council 2005).

### KO Telemedicine Services

Telehealth can be defined as “the use of advanced communications and information technologies to exchange health information and provide health care services

across the geographic, time, social, and cultural barriers” (Reid 1996). KO Telemedicine’s connectivity service—the Kuhkenah Network (K-Net)—provides the turnkey technology management and connectivity services needed to operate the program. K-Net leverages integrated technical and service support resources to address broadly based information and communications technology needs in First Nations on a pan-regional basis. Accordingly, the telemedicine network is extensive. It reaches from the isolated Beausoleil First Nation on Georgian Bay’s Christian Island in southern Ontario to the Fort Severn First Nation, Ontario’s most northerly community, and from the Winnipeg Health Sciences Centre in the west to James Bay’s Weeneebayko General Hospital on Moose Factory Island to the east.

The practical innovation that KO Telemedicine contributes in the Sioux Lookout Health Zone is its ability to enhance and improve existing services. Simply put, telehealth does not suppose a radical restructuring or reinvention of the health system. Rather, telehealth proposes a way to manage regional change and to integrate previously distinct jurisdictional health programming at the community level. Accordingly, telehealth has enabled timely evidence-based decision making and improved communication between families, clients and service providers. Similarly, telehealth supports health professionals and health workers by providing access to targeted training and educational programming at the point of care.

Telehealth engages the broader spectrum of community well-being. It brings with it high-speed community Internet access to online health resources, shares in the cost of local broadband services, contributes to the local economy through job creation, and leverages new opportunities for community development. Telehealth also respects the cultural diversity and practice of First Nations. Community telehealth coordinators translate video conferences between clients who speak their native language and distal service providers; telehealth facilitates local access to elders who have had to leave their communities to reside in urban-based long-term care facilities; and telehealth expands community choices by enabling access to traditional healers and caregivers.

The developmental rationale for KO Telemedicine is important because it describes conditions not unlike those experienced in most regions of Canada, and illustrates scenarios familiar to service providers in far-flung First Nations. Whether the community is located on the northeast coast of Labrador, within the Hudson’s Bay watershed, or tucked into a cove in British Columbia’s Broughton Archipelago, the logic and wherewithal that informs KO Telemedicine proposes a scalable approach to longstanding First Nations health service challenges in Canada, and engages a service model that is based on tripartite collaboration, regional integration, and community capacity to influence health service delivery.

A number of benefits tied to the use of telemedicine can be identified. These include:

- Improved access to and utilization of comprehensive telemedicine services that address community-based health and wellness priorities;

- Increased coordination and integration of federal and provincial First Nations health services programming;
- Enhanced scope of regional health-professional retention and recruitment strategies;
- Increased community participation and influence over access to the health system;
- Full integration with the Northern Ontario School of Medicine's community-based learning model, supporting medical student learning and practice needs during community placements;
- Reduced patient and health system travel burden—particularly for the elderly and parents with young children who have to travel long distances for access to medical services;
- Improved peer-to-peer interaction and team-based approaches to regional care;
- Decreased isolation for patients at distant points of care using tele-visitation services; and
- Improved community-based health service training and education capacity.

## **Telehealth Development in Keewaytinook Okimakanak First Nations**

Telehealth development in northwestern Ontario is closely tied to the infra-structural groundwork laid by Keewaytinook Okimakanak's telecommunication service—the Kuhkenah Network (K-Net). Network implementation anticipated community-based demand for broadband services and developed the community and regional capacity required for implementing and managing a regional tele-medicine service.

In May 1999, K-Net's broadband consultation demonstrated widespread interest in telehealth services by community members and health staff. People agreed that improved access to health services and information would be an important network service. At about the same time, Keewaytinook Okimakanak's health director identified mental health services as a priority application for telehealth. Over the next year and a half, KO Health designed a telepsychiatry pilot project and implemented services in two Keewaytinook Okimakanak communities. Despite significant technical and logistical challenges, community members responded enthusiastically to the new service and the project's final evaluation signalled the opportunity to continue and expand this service model.

In January 2000, Health Canada announced funding to support a regional telehealth consultation in northwestern Ontario. Keewaytinook Okimakanak was asked by Health Canada to participate in the consultation and to represent First Nations in the regional development of telehealth services. The consultation

engaged regional and community-based health workers and professionals and reflected local needs and priorities. The final report supported implementation of telehealth in the KO First Nations and became the basis for a working partnership between Keewaytinook Okimakanak and the provincial telehealth service provider, NORTH Network (changed to the Ontario Telemedicine Network in 2007).

Keewaytinook Okimakanak Telemedicine is witnessing how the introduction of clinical, educational, and wellness services is helping First Nations communities change their approach to health service practice and delivery. Increasingly, nurses and community health representatives, for example, are consulting validated health web resources that facilitate early intervention and preventative measures for managing chronic illness. Similarly, people living in remote communities have access to self-care and self-management information to help them negotiate lifestyle changes in order to modify their individual and family health statuses.

In these and many other minute ways, telehealth is supporting a change management strategy for improving the well-being of First Nations communities. As a fully implemented e-health network, KO Telemedicine is the most advanced indigenous telemedicine network in the Americas. It provides comprehensive access to health and wellness services for the province's most vulnerable populations by removing longstanding social and geographic barriers and by placing quality health care closer to home. At the same time, the accelerated access plan (AAP) enables a shared network environment, defined both by the cultural character of its communities and by the local and regional capacities of the provincial and federal health systems.

## **Benefits of KO Telemedicine**

There is increasing evidence of compromised health status and reduced quality of life among rural and remote First Nations populations. While differences exist among First Nations, Inuit, and Métis populations (for example, rates of diabetes are highest in First Nations communities whereas rates of tuberculosis are highest in Inuit communities), access to health care services is an issue for all Aboriginal communities. Although much effort has been devoted to improving delivery of First Nations health services, the standard of care is still far below baseline services in the rest of Canada. Telemedicine and telehealth provide a new opportunity to address service imbalances in the health system and to contribute to community well-being.

Access is a principle embedded in the Canada Health Act. It directly addresses demand for portable, affordable, and comprehensive services for all Canadians. Similarly, the access principle anticipates contemporary system migration requirements for integrated service models, team-based practice, and continuous quality improvement. These modern expectations of the health system are captured by KO Telemedicine and the work that it does with First Nations communities and

its system partners. KO Telemedicine's capacity to enable a community-based engagement and learning model for first- and second-year students enrolled in the Northern Ontario School of Medicine highlights connections between access, health innovation, and the institutional development of integrated service models for First Nations communities.

In addition to facilitating local access to new services and service providers, the KO Telemedicine service model also demonstrates a significant capacity to meet community demand for quality health services and provide direct feedback to KO Telemedicine during regular biweekly team meetings. By way of example, an urgent need for speech and language services was identified by coordinators in the Sioux Lookout Zone. KO Telemedicine communicated this need to medical and telehealth network partners. In a matter of weeks, service capacity was identified among an speech language pathology (SLP) group in Thunder Bay and a service delivery protocol was initiated. And though not all service gaps are able to be addressed that rapidly, the health network environment encourages delivery of priority services at community points of care.

Telehealth has also enabled community-based access to complementary services, such as mobile retinal screening programs. Initiated in 2002 as a KO Telemedicine partnership with the University of Toronto and NORTH Network, the tele-ophthalmology pilot project provided retinal screening services in three First Nations communities—Sandy Lake, Keewaywin, and Fort Severn. Over a 12-month period, the project screened 186 persons, finding that 14% of the readings had anomalies that required further follow-up.

An internal partner review validated the benefits of the program and a revised service model was launched in early 2005. The current iteration of the tele-ophthalmology project provides comprehensive diabetic teaching and support services to persons who are screened, and directly engages community health workers as part of the screening team. The results of the new service model show that 78% of the clients were saved a trip out of their communities for retinopathy assessment. Further, the network environment within communities supported the electronic transfer of ocular imaging data to the ophthalmology web server—an innovation that reduced specialist response time to just 48 hours.

Although the range of services provided at community clinics—variously classified as health stations, health centres, and nursing stations—has expanded, access to health professionals has routinely required that the community client fly, drive, or take a bus to the regional referral centre. In the Sioux Lookout Health Zone, these centres are Winnipeg, Thunder Bay, Toronto, and Sioux Lookout. By way of example, there were almost 20,000 medical transports in the Sioux Lookout Zone during the 2002–2003 fiscal year. More than 12,000 trips were made to see medical specialists and almost 5,000 additional trips (one-quarter of all approved travel) were made so that community members could see a general practitioner. Significantly, almost 60% of all medical travel was elective—categorized as consultations and counselling. This information shows the potential

for telehealth services to avoid medical transports and to improve community-based access to elective specialist services.

Uptake and acceptance of telehealth in the remote First Nations across the Sioux Lookout Health Zone is already demonstrating the value of telemedicine as a way to enhance existing services and make more effective use of existing health and human resources. For example, data on the frequency of clinical telemedicine and educational/training telehealth services in the five KO communities shows a 129% increase in clinical utilization of telehealth services from the 2002–2003 to the 2003–2004 fiscal years, and a 44% increase between 2003–2004 and the 2004–2005 periods. Non-clinical utilization mirrors these increases—though in greater numbers. In the 2002–2003 and the 2003–2004 fiscal years, non-clinical utilization increased by 68%. In the following year, non-clinical utilization increased by an additional 38%.

These trends demonstrate community acceptance of telehealth services and suggest continued demand for telehealth services in First Nations communities. Similarly, growing familiarity with telehealth by health service providers will support integration of community-based service delivery, improve the scale and scope of community-based choices, and accelerate adoption of complementary e-health services and technologies, such as electronic health records (eHRs), home-based telemetry, and validated web-based First Nations health resources.

The introduction of telehealth services has similarly contributed to First Nations capacity development. In a direct way, telehealth has opened up new worlds of education and training for health and social service staff in northern and isolated communities. KO Telemedicine coordinates a wide scope and variety of health training and continuous quality improvement programming that is specifically required by First Nations service providers and patients.

The telehealth program has stimulated wide-ranging socio-economic development for First Nations by describing the “realm of the possible.” This is made true not only by the fact that the program works, but more importantly, that it works on behalf of each community. Specifically, the community telehealth coordinator workforce—a full-time and highly motivated network of community-based staff—liaises with family members, peers, neighbours, and political leaders to constantly provide feedback on new ways for technology to address local service requirements, fill gaps, and deliver integrated solutions. In this sense, community well-being regards a larger goal than technological innovation—it engages a community-driven capacity to think past longstanding barriers and the cultural wherewithal to make change happen.

KO Telemedicine has also embedded distributed methods of teaching and learning into its new site training, community telehealth coordinator training, and continuous quality improvement programming. Accordingly, site coordinators learn their job and participate in regular training sessions via video conference. Recently, this approach was recognized by the First Nations and Inuit Health Branch as a national model for First Nations communities. FNIHB funding supports an

education coordinator position. In fall 2004, the education coordinator surveyed community-based health staff and administrators about their learning needs and used this data to program regular teaching and learning events via video conference. Direct learning is being augmented by web streaming. This feature provides health workers with the ability to review teaching events and training sessions that are archived on the KO Telemedicine website. KO Telemedicine also utilizes Adobe Connect Webinar software. This tool enables live and archived presentations and structured learning through the use of individual web browsers.

The KO Telemedicine project has incorporated formative, summative, and dynamic evaluation into its service model from the very beginning. This information has supported a best practices and continuous quality improvement environment, and has also been used to enumerate the start-up and ongoing costs, and the service provider and community benefits associated with the introduction of telehealth services in remote First Nations settings. For example, to evaluate Keewaytinook Okimakanak's first telehealth initiative—a telepsychiatry pilot project—KO worked directly with the Queen's Centre for Health Services and Policy Research to determine client/provider satisfaction with the service, and to unravel the various cost centres within which non-insured health benefits medical transportation funding is distributed. In the 2002 release of the final report, health policy researchers concluded that:

- Clients demonstrated perfect attendance and expressed consistently positive perceptions of the confidentiality and benefits of the service that were maintained over time.
- The distance created by not being face to face with the psychiatrist appears to have helped clients feel comfortable with the psychiatrist.
- While many clients (60%) indicated they felt nervous during their session, the majority (80%) said they felt comfortable with the psychiatrist asking personal questions of them.
- Almost all the clients indicated that the psychiatrist had helped them with their emotional problems and that they would recommend the service to people they care about who have emotional problems (Keresztes 2002).

Community client satisfaction was replicated in the University of Toronto's evaluation of NORTH Network's Canada Health Infostructure Partnership Program (CHIPP). The 2003 report looked specifically at services in the KO communities and concluded that participants in the patient focus groups in the First Nation's communities were very satisfied with their telemedicine experience; they felt that it was increasing access to other health care specialties (e.g., mental health counselling) and was more convenient with respect to time and cost savings. They valued the program and wanted it to continue. This sentiment was reflected in the comment of one participant, who stated: "Please don't take away the telemedicine program."

In 2004, KO Telemedicine launched a community engagement process to determine how the service was working for First Nations communities. During that process a number of elders were interviewed and asked to relate their telehealth experiences. Joseph Leo Anishinabe, a 69-year-old resident of Keewaywin, said he “enjoy[ed] using telehealth to visit my family and friends that can’t come home because the doctor has told them they would get better medical care in the city ... It’s like the person is right there in the room with you. It’s that close.” KO Telemedicine also launched a more extensive research exercise in 2004. Working in partnership with Laurentian University’s Centre for Rural and Northern Health Research and the University of Guelph, KO Telemedicine instituted a process and program evaluation that will determine KO Telemedicine’s success in meeting its Primary Health Care Transition Fund (PHCTF) objectives and build community capacity to participate in the research process.

Looking forward, KO Telemedicine has developed an Accelerated Access Plan (AAP) that will link the KO Telemedicine network with the province’s Aboriginal health access centre infrastructure and extend its unique Aboriginal service model to 50 additional remote and northern First Nation communities in Ontario. AAP will transform health service access for Ontario’s Aboriginal communities. It will deliver quality and comprehensive access to federal and provincial health programming within a common point-of-care network, support health professional retention and recruitment in small, isolated Aboriginal communities, and complement local health integration needs and priorities.

## Conclusion

KO Telemedicine meets a variety of sustainability tests. It is based on a network services model that provides secure health connections at community-based points of care, distributes the cost of access across a range of users, and provides culturally appropriate technical support to community telehealth coordinators. In addition, KO Telemedicine has anticipated a key change management role for itself and has dedicated human and system resources to enable the integration of programs and providers for First Nations communities. At the same time, KO Telemedicine’s service model directly addresses health system principles by improving access to comprehensive and quality care and by meeting longstanding community health and wellness needs. These values are embedded in a commitment to make more effective use of existing health resources and to undertake longitudinal cost/benefits analyses.

Finally, KO Telemedicine is successful in its ability to introduce and diffuse telehealth innovations at the community level. Community participation is high—in large part because of the work performed by community telehealth coordinators to shape the service to community needs; promote its use among community leaders, clients, and administrative bodies; and facilitate sessions at busy nursing stations. Community members understand the ways that telehealth has positively

changed the local health service access environment and are eager to see the service expand.

Still, telehealth exists in a policy and program vacuum. It is largely sustained by project funding, extensive collaboration among First Nations health service agencies, strategic partnerships, and directly by First Nations who contribute what they can to keep local broadband networks online.

While it meets or exceeds numerous sustainability tests, KO Telemedicine has no programmatic means of ensuring that services will continue at the end of its current project. This reality presents an issue of wide-ranging significance for Ontario First Nations and for Aboriginal communities seeking to “turn the corner” right across Canada. It also signals the need for tripartite collaboration so that investments made in developing, implementing, and integrating First Nations telehealth service innovations are available to address the clinical and social determinants of health for First Nations communities.

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