

A Pan-Canadian Environmental Scan of Clinical Telehealth Activity
Primary Document



Submitted to:
Provincial Health Services Authority

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Table of Contents

1. Introduction.....	5
2. Method.....	5
3. Framework of the Primary Document	5
4. Provincial “Snapshots”	6
Nunavut.....	6
Northwest Territories (NWT).....	7
Yukon.....	7
Newfoundland and Labrador	8
Nova Scotia.....	8
Prince Edward Island.....	9
New Brunswick.....	9
Quebec	9
Ontario	10
Manitoba	10
Saskatchewan.....	11
Alberta	11
British Columbia.....	12
5. Pan Canadian “Telehealth Picture”	13
6. Lessons Learned/Recommendations for the British Columbia Context.....	13
Lessons Related to Technology	13
Create Technological Standardization	13
Shift to IP	13
Provide Technical Support.....	14
Lessons Related to Governance.....	14
Centralize Administrative Structure	14
Build Linkages.....	14
Examine Workflow Patterns.....	14
Develop Mechanisms to Allow Physician Participation in Telehealth.....	15

Lessons Related to Promotion and Development	15
Identify Program Champions	15
Generate Stable Funding	15
Build to Expand	15
Manage Stakeholder Expectations	15
Incorporate Change Management Strategies	16
Provide Training Opportunities	16
7. Conclusions	16
Appendix to the Primary Document: Pan Canadian Telehealth Activity Tables	17

1. Introduction

The overarching objective of this environmental scan is to provide a comprehensive picture of existing clinical telehealth programs across Canada. The full report is organized in two components. The **Primary Document** provides an executive summary style synthesis of findings. The summary of findings begins with “snapshots” of telehealth programs for each territory and province followed by a comprehensive Pan Canadian picture of programs and activities. The Pan Canadian information is presented in summary tables as well as in lessons learned or recommendations for future program development. The Primary Document is intended to be used in conjunction with the **Evidence Companion**. The Evidence Companion provides detailed information for each territory and province as well as all data sources accessed. The Primary Document summarizes salient information and emergent themes, while the Evidence Companion provides an in-depth and comprehensive repository of findings. It should be noted that while data was gathered and presented to provide parallel information, that the variability in telehealth program development across territories and provinces has influenced the nature of the descriptions.

2. Method

The information presented in this environmental scan was systematically obtained from a variety of sources including program/provincial telehealth home pages, conference proceedings and strategic telehealth business plans. A noteworthy limitation faced in gathering information was the absence of a centralized national telehealth data repository containing comprehensive information regarding existing clinical telehealth activity. Personal correspondence (via email and/or telephone) with provincial telehealth coordinators and in some cases regional telehealth coordinators was conducted in order to fill in information gaps where required.

3. Framework of the Primary Document

As previously stated, the principal objective of the environmental scan is to provide comprehensive information regarding existing clinical telehealth programs across Canada. Telehealth activity is profiled province by province from East to West. Provincial snapshots include brief descriptions and discussions of the following:

- Pertinent details regarding background information about the program;

- The development trajectory of telehealth program(s) including funding information;
- Technology and infrastructure profile;
- Administrative structure; and
- Program specific impediments to service delivery.

Distilled from the analysis of provincial programs and discussions with key informants is a set of lessons learned or recommendations for future program development. These lessons highlight suggestions for development in the areas of technology, governance and program development.

4. Provincial “Snapshots”

The subsequent section provides a ‘snapshot’ of telehealth programs for each territory and province across Canada. Several components of each telehealth program are described including program background information (population served, number of telehealth sites etc), program development details, a brief technology profile, as well as administrative and governance structure details. Where possible, impediments to successful service delivery have been characterized to serve as ‘lessons learned’ to inform future program development. The territories are profiled first followed by the provinces from easternmost to westernmost.

Nunavut

The largest geographical landmass in Canada with just under 2 million square kilometers, health care providers in Nunavut are faced with the challenge of delivering care to possibly the most sparse population in Canada with 50% of Nunavut’s 25 communities housing less than 600 people. In order to meet this challenge, Nunavut adopted the Ikajuruti Inungnik Ungasiktumi (IIU) Telehealth Project, or “*the tool to help people that are far away*” from the Northwest Territories, a telehealth system which offers the residents of Nunavut access to approximately 15 medical specialities via telehealth. Expansion of the IIU was in part supported by Health Canada through Canada Health Infrastructure Partnership Program and the Primary Health Care Transition Fund Aboriginal Envelope. In April 2005, NorthwestTel donated \$100,000 to Nunavut Telehealth in cash and in-kind services to support further development of telehealth in Nunavut. At present, synchronous videoconferencing technology which operates on a satellite IP network is available at all 25 telehealth sites in Nunavut. Seventeen of these sites utilize the Alberta Health and Wellness centralized scheduling system to coordinate clinical activities. The IIU trains and employs 30 local Inuit staff as site technicians who operate and maintain telehealth stations.

Northwest Territories (NWT)

Much like Nunavut, NWT has an extremely low population density (one person per 28 square kilometers) and depends on its telehealth network to overcome the barriers of distance and climate to provide access to expert care to 42,000 people spread out across 1.17 million square kilometers. Telehealth is used to deliver services to the NWT in over 20 clinical areas and in all eleven official NWT languages. The Western Arctic Telehealth Network (WestNet) was established in 1998 and is sustained entirely by funding from the territorial government. There are currently ten telehealth sites in the NWT and one tertiary centre, which offer specialist services. To fill gaps in service delivery the Alberta Capital Health region provides inter-jurisdictional services. WestNet also utilizes the Alberta Health and Wellness scheduling system. As the NWT is not on the North American power grid, WestNet relies on a satellite Internet Protocol (IP) system to achieve connectivity and support a fully integrated telemedicine system that manages encrypted medical records, processes medical images and provides video consultation services. The system is administrated by one full time telehealth coordinator and four part-time telehealth coordinators who have administrative responsibilities rolled into existing full time hospital duties. Technical support, access to software, service updates, and telephone support are available from the current telehealth technology vendor. Impediments to the delivery of telehealth in the NWT include bandwidth limitations in remote areas, poor integration of telehealth services into the existing care delivery processes, lacking telehealth policy infrastructure and remuneration framework and limited local capacity for telehealth.

Yukon

The Yukon Telehealth Network is led by the Department of Health and Social Services of the Government of the Yukon and involves partners from British Columbia and Alberta in the delivery of clinical telehealth services to a population of roughly 31,000. Ten communities in the Yukon are linked via telehealth and four more remain unconnected due to bandwidth issues. These connected communities utilize telehealth to access five clinical service areas within the Yukon region (i.e., Diabetes Education, Child development services, Mental Health, Physiotherapy, and Family Visitation) as well as four clinical service areas outside of the Yukon in Alberta and B.C. The Network began in 2001 when the Yukon Government successfully applied to the Canadian Health Infrastructure Partnership Program (CHIPP). With CHIPP funding, the Yukon government established a telehealth information and services Network in nine Yukon communities. At present, the program does not have funding and is financially sustained and ongoing funding for program operation, equipment maintenance and personnel are drawn from a community nursing budget, a branch of Health and Social Services (H&SS) of the Yukon Government. The Yukon Telehealth Network utilizes IP networks for 'within region' clinical telehealth consultations and Integrated Services Digital Network (ISDN) protocols when connecting with partners in Alberta and B.C. A Telehealth Coordinator in Whitehouse is responsible for scheduling, setting up of the session and the day to day

operation and coordination of the system. IT support to the program is provided by an employee of the H&SS IT unit – there is currently one individual who has knowledge and expertise in videoconferencing. Impediments to service delivery include inadequate bandwidth in some communities as well as lack of sustainable funding. Additionally, the Yukon does not have an internal bridging system and therefore cannot connect all of their clinical sites simultaneously without incurring the high cost of bridging services provided by local telecom.

Newfoundland and Labrador

Although several pilot telehealth programs have been launched in the past, Newfoundland does not have an established, funded telehealth network to engage in functions critical to successful clinical programming such as coordination, scheduling and evaluation. Newfoundland is however home to the Telehealth and Education Technology Resource (TETRA) and although current TETRA initiatives are mainly focused on tele-educational services, they offer audioconferencing and videoconferencing networks both point to point and multipoint connects and provide bridging services for clinical telehealth services. IP networks are used for clinical telehealth applications occurring within the province whereas ISDN lines are used for extra-provincial consultations. Key informant interviews revealed that clinical telehealth is available at 29 sites throughout the province in a variety of clinical areas; however, it was not possible to ascertain any explicit data concerning clinical programming due to the lack of an established telehealth program to generate usage data. Newfoundland has completed a provincial telehealth strategy and the development of a provincial network is underway.

Nova Scotia

The Nova Scotia Telehealth Network (NSTHN) is an ISDN based videoconference network which provides a diversity of clinical services to 55 health care oriented facilities in Nova Scotia including tertiary care facilities, community health centers and a justice institute. In addition to providing province wide clinical telehealth services, the network also provides services to patients in the Maritimes and Newfoundland. NSTHN was the first province-wide telehealth network created in Canada. Telehealth services were first provided in 1996 through a pilot project created to assess the feasibility and benefits of providing remote health care delivery through telehealth. The success of the pilot project initiated a full provincial rollout in 1997 and by 1999 all the hospitals in the province were connected to this network. The network is sustained through funding from through a dedicated budget from the Department of Health of Nova Scotia. At present the NSTHN utilizes ISDN lines for clinical consultations, however, transfer to an IP-system is imminent. This transfer is intended to improve user-friendliness of the system and to improve convenience for health care

providers. Other future directions for the NSTHN network include the expansion of the telehealth network to develop linkages with primary care networks.

Prince Edward Island

PEI does not at present have a province wide telehealth program/network. PEI does however offer their residents access to two clinical telehealth programs. The first is Telehomecare -- a sustained program available to residents at 12 sites across the province. The telehomecare network operates via POTS (plain old telephone system) and connects clients to one central nursing station. Blood pressure, pulse, oxygen, live heart and lungs sounds, and blood sugars can all be monitored at a distance. The second program available to PEI residents is Telemental health, which uses IP networks to connect practitioners at the Homewood health centre with mental health practitioners. Telemental health offers clinical services in adolescent mental health and eating disorders.

New Brunswick

There are ongoing telehealth programs at a total of 63 sites in New Brunswick offering clinical programs approximately ten identified clinical areas with telecardiology being the highest user followed by tele-nutrition, mental health and rehabilitation. Direction for clinical telehealth in New Brunswick is guided by *New Brunswick Telehealth Workgroup* which consists of representatives from each of NB's seven regional health authorities and the NB department of Health and Wellness. This group is responsible for developing long term strategy for telehealth in NB as well as making recommendations for the provincial telehealth utilization strategies.

Scheduling for clinical telehealth activities is accounted for by jurisdictional telehealth coordinators in the absence of a central scheduling system. In terms of funding, Canada Health Infoway has allocated \$150 million for telehealth investments with specific focus on extending telehealth to remote and aboriginal communities as well as official language minority communities. At present, Clinical telehealth programs in New Brunswick is ISDN based and uses a 384 kbit/s standard for medical purposes. Long term plans for New Brunswick include moving to an IP-based network. The absence of an IP network is one of the core challenges facing telehealth in New Brunswick and the creation of such a network is a component of their telehealth strategic plan.

Quebec

Telehealth activity in Quebec is overseen by The Réseau de télécommunications sociosanitaire (RTSS), a private network run by the Ministère de la santé et des services sociaux (MSSS). This network provides the support and infrastructure for telemedicine and many

other health informatics applications in Quebec. The RTSS administrates and provides bridging services for the Réseau Universitaire Intégré de Santé (RUIS), a network of four university based telehealth providers which offer clinical services throughout Quebec. The RUIS telehealth network includes The Universities of Laval, Sherbrooke, Montreal and McGill and provides clinical telehealth to more than 90 sites across the province. In terms of technology, RTSS has multi-point and point-to-point capability with a guaranteed IP based transmission speed of 384 to 768 kbit/s. RTSS has a central reservation system. Individuals with access to the network can book the videoconferencing via the internet or by a 1-800 reservation line. On-site technicians are available at each regional site during work hours. However, if no on-site technical support staff is available, the RTSS has a Technocentre National that is mandated by the MSSS to provide support to all the technocentres.

Ontario

Currently in Ontario there are three large telehealth networks in operation, which provide clinical telehealth services across the province. These three networks, NORTH (Northern Ontario Telecommunications Health), Care Connect and Videocare work collaboratively to maximize resources and support over 80 clinical areas in over 200 total sites. All three networks were funded in part through CHIPP; however, sustainable funding for the networks is provided through the Ontario Ministry of Health and Long Term care *Smart Systems for Health Agency* (SSHA). The SSHA intends to expand the network by providing high speed connections to 150,000 Ontario Health Care Professionals at 24,000 sites. In terms of technological resources, the NORTH network operates with point to point IP network as well as multipoint ISDN bridging. Care Connect primarily uses ISDN based connections run through their own bridge while Videocare manages an IP network with a virtual private network to ensure security in information transmission. The future of telehealth in Ontario includes the integration of these three major service providers to further expand the capacity of the network. A detailed description of all three telehealth networks and their respective areas of clinical expertise as well as service areas can be found in the accompanying 'evidenced companion'.

Manitoba

The clinical telehealth needs of Manitoba's population are met by MB telehealth, a province wide telehealth network which offers over 50 clinical specialties in 27 sites across the province. Recently it was announced that the network would be expanding its reach to ten First Nations communities in the northernmost regions of the province. MB telehealth was established in March 2001 with the majority of funding from the Canadian Health Infostructure Program (CHIPP) with matching funds from Manitoba Health, Regional Health Authorities in Manitoba and in kind contributions. It is managed by the Winnipeg Regional Health Authority (WRHA) and

partners include Regional Health Authorities, Manitoba Health, and Manitoba Telecom Services. Continued funding to sustain the network comes from Manitoba Health. MB telehealth uses IP technologies to connect care providers and patients, and runs an estimated 350 clinical encounters a month which accounts for more than 50% of total network activity. Additionally, the network owns and operates its own telehealth bridge; however, increased bridging capacity will be required to meet program expansion. The network is administrated and maintained by a comprehensive support staff including, but not limited to a system quality analyst, network scheduler, desktop system analyst, 15 telehealth coordinators and four service support technicians. The main identified impediment to service delivery is, as mentioned above, an increase in programs which exceeds existing bridge capabilities.

Saskatchewan

Saskatchewan's provincial telehealth network provides a variety of clinical services to residents at 26 telehealth sites all with sustained funding from the Provincial government department of health. Through 2005, the provincial government conducted regional telehealth needs assessments and articulated a human resource strategy aimed at formalizing the network within Saskatchewan. In terms of program development, the first telehealth sites in Saskatchewan were established as part of the Northern Telehealth Network (NTN) pilot project which began in July 1999 and ended June 2000. The NTN was funded by Saskatchewan Health, with additional funding from Health Canada's Health Infostructure Support Program (CHIPP). At present the network is funded completely by Saskatchewan health. Recently, the network went entirely to IP for service delivery; however, there is ISDN redundancy through most of the region. The network is adding approximately 12 sites per year (as bandwidth allows) and exploring the potential use of Satellite in remote and rural areas where limited bandwidth is a potential issue. The network is administrated by 15 Telehealth Coordinators located at each provincial hospital and within each health region, and scheduling is run via Alberta Wellnet's central scheduling system. In terms of on site support, site coordinators (mostly with clinical backgrounds) support patients during consultations, and technical support is provided centrally by the provincial Health Department's Health Information Solutions Branch who handle the network bridging and gateway. At present, the largest impediments to telehealth service delivery in Saskatchewan include bandwidth limitations in remote communities and challenges associated with physician buy-in.

Alberta

Alberta enjoys one of the countries most extensive telehealth networks with over 30 clinical program areas available at over 200 sites within the province. All of Alberta's nine health authorities are actively engaged in telehealth; however, the Capital and Calgary health regions represent the largest and most active referral centers for patients in other health authorities seeking access to specialized

consultations. The Alberta Health and Wellness (AHW) telehealth network extends clinical services beyond the borders of Alberta through partnerships with B.C., Saskatchewan, Manitoba, and the Territories. Additionally, AHW is partnered with the governments of Nunavut and Saskatchewan through a shared telehealth scheduling system. The AHW telehealth network was created through a \$21 million dollar anonymous investment coupled with a \$7 million dollar investment from AHW. These investments provided the 'seed money' to grow the network to its present state. New telehealth pilot projects are funded through an annual AHW telehealth clinical grant fund, which to this point, has resulted in the sustained development of more than 20 clinical programs across Alberta. The clinical telehealth grant fund is a core component of AHW's strategic business plan, directed at increasing clinical telehealth in the province. In terms of technology, Alberta is largely an ISDN region, however the entire province is in the process of migrating to an IP SuperNet in an effort to maximize connectivity province wide. This initiative is funded through a \$15 million dollar cross ministry initiative aimed at creating connectivity via IP in the health care, government and education sectors. There is some variability amongst the health authorities in terms of their readiness for migration to IP with some authorities being wired for IP at all of their existing telehealth sites and some in the process. Each of Alberta's nine health authorities has a clinical telehealth coordinator who oversees program activities and provides technical support. Programs are run through a web based, central scheduling system. Core support services such as funding and program administration are overseen by a provincial telehealth committee consisting of senior health region physicians and AHW representatives.

British Columbia

Telehealth services are available to B.C. residents in over 20 clinical areas through 70 communities, with access points in hospitals, mental health centers and child development centres. The British Columbia Telehealth Program project funded through CHIPP laid the groundwork for many of B.C.'s telehealth services. The Ministry of Health and Health Canada contributed \$3 million dollars each, with various project partners making in kind contributions. The future of telehealth in B.C. involves a shift to IP via a partnership between Network B.C. and TELUS, which will bring broadband access points to 336 B.C. communities by the years end. The PHSA oversees the operation and maintenance of a Polycom MCG-100 videoconferencing bridge with six primary rate ISDN lines and connectivity to the provincial network. This system is used to facilitate service to videoconferencing sites across the province. To extend the reach of telehealth services, NetWork B.C. is endeavouring to establish internet connectivity throughout B.C. by years end, bringing IP based telehealth to communities across the province. Another recent measure aimed at improving the reach of telehealth services is the development of a compensation mechanism for physicians providing telehealth consultations. In January 2005, the B.C. Medical Services Commission granted the approval of physician compensation codes for selected medical services. In terms of program administration, the PHSA employs one individual full time to administrate telehealth services at the provincial level. However, program administration occurs at the health authority level under the direction of an individual assigned to telehealth (with

the exception of the Fraser health authority in which there is no designated coordinator). In terms of scheduling, B.C. does not at present utilize a province wide scheduling system and as a result scheduling remains fairly complex. The need for a singular, coordinated scheduling system is recognized and the province is in the process of seeking out an appropriate scheduling tool for trial. At present, the most significant impediment to clinical telehealth service delivery is a lack of broadband in some remote communities

5. Pan Canadian Picture of Telehealth

The appendix to the Primary Document includes two tables that provide a comprehensive summary of the full scope of telehealth activity across Canada. Tables were used because of their ability to provide summary and comparative information simultaneously. Clinical applications by territory/province are presented separately in Table 1. Table 2 provides comparative descriptions of telehealth program structures by territory/province, exclusive of specific clinical services.

6. Lessons Learned/Recommendations for the British Columbia Context

An analysis of the lessons learned by Canadian telehealth programs/networks yields a set of recommendations for future program development. Recommendations fall under technology, program governance and promotion/development. The remainder of this section includes a discussion of these lessons learned by the aforementioned theme areas.

Lessons Related to Technology

Create Technological Standardization

A salient lesson learned from the reviewed programs is that standardization of technologies across the telehealth network is essential. Technological standardization allows interoperability and maximizes the reach of telehealth applications.

Shift to IP

A shift to IP networks both increases the cost effectiveness of telehealth and capitalizes on ubiquitous technologies. The pervasiveness and user friendliness of internet based applications maximizes the potential for uptake of this medium in clinical telehealth contexts amongst patients and providers alike. IP networks however, present security challenges to potential users as sensitive patient

information is being transmitted across the often unsecured domain of the World Wide Web. Several telehealth administrators stressed the need to take steps to secure information, such as the development of a virtual private network for telehealth.

Provide Technical Support

The provision of ongoing technical support is critical to the success of telemedicine initiatives. Dedicated technical support staff members are required to enable caregivers to perform their clinical roles and minimize their roles as troubleshooters. Several provincial telehealth programs incorporate basic technical support duties into the roles of on site staff to ensure that timely assistance is there when needed.

Lessons Related to Governance

Centralize Administrative Structure

A centralized administrative structure for the management of a telehealth network is commonly adopted by large provincial networks. Roles of a centralized administration include definition of strategic goals and directions, bridging, ensuring interoperability standards are met, negotiation with vendors and equipment procurement. Central coordination allows core telehealth needs to be met in an efficient manner, allowing telehealth regions to focus on clinical program delivery. A centralized scheduling system promotes efficiency in clinical telehealth delivery as well.

Build Linkages

Establishing linkages amongst health care facilities and/or agencies expands the breadth and reach of clinical telehealth options. A review of Canadian telehealth programs reveals the importance of establishing a mechanism to link telehealth initiatives with primary care structures and encourage these structures to include telehealth technologies into their service plans.

Examine Workflow Patterns

Ensuring the successful uptake of telehealth initiatives requires building telehealth activity into the existing workflow patterns of end users. Equipment and scheduling which fails to mesh with established work patterns is unlikely to be fully adopted which can dramatically inhibit its ability to improve patient health. Placing telehealth equipment and workstations close to the practice environment and scheduling around practitioners needs may greatly contribute to user acceptance.

Develop Mechanisms to Allow Physician Participation

Several telehealth programs cite inadequate fee mechanisms to pay physicians for telehealth services as a major barrier to program success. Fee items to support both telehealth consultations occurring within and outside of province are a must. In some instances poor policy alignment between provinces creates liability/medico-legal risk issues for care providers. Policies need to be developed as a mechanism to mandate the use of telehealth.

Lessons Related to Promotion and Development

Identify Program Champions

Telehealth requires active promotion and the identification of champions to foster community uptake. Several telehealth program administrators highlight the fact that senior-level administrative support is critical for the success and sustainability of telemedicine services and the development of partnerships. Support of key individuals can also help to increase user acceptance.

Generate Stable Funding

Long term, dedicated funding is required to ensure that a telemedicine program can grow and expand from pilot projects to permanent fixtures. Long term success requires that governing bodies make telemedicine initiatives a priority and take steps integrate them into their existing financial and service delivery frameworks.

Build to Expand

Optimally, telehealth programs should be built with a view to expansion. Future visioning in the short term allows for efficient use of resources and streamlined program development in the long term.

Manage Stakeholder Expectations

Management of stakeholder expectations is critical to program success. Expectations for quick, large scale program development from program administrators to patients can lead to disappointment and withdrawal. Pilot studies in the literature have shown that gradual program growth coupled with realistic objective setting is related to success in telehealth initiatives.

Incorporate Change Management Strategies

The introduction of telemedicine is often disruptive to established work practices. Resistance to change can be one of the factors that contribute to failure of a telemedicine program. The development and implementation of change management strategies is essential to ensure clinical telehealth staff members are braced for the inevitability of systems change.

Provide Training Opportunities

Optimal uptake of new technologies in health care setting requires that staff members are in a position of comfort, competence and readiness to use the equipment. A substantial body of literature indicates that failure to provide training opportunities to end users of technology can result in rejection of said technology. Providing staff with training opportunities early and often serves to increase their comfort with the shift from actual and virtual service provision and promotes adoption.

7. Conclusion to the Primary Document

The Primary Document represents a cross Canada summary of telehealth activities, and synthesis of findings. The Evidence Companion provides further detail and depth to the “provincial snapshots” included in this document. The detailed evidence will underline the differences in telehealth program development and activity across territories and provinces. As much as possible, the authors of this report have tried to make the presentation of information parallel for the reader. However, because of variability in information available as well as structural differences of the programs themselves, there is variation in the scope and presentation across territories/provinces. That is, programs have different histories of development; the structure of the information presented in the Evidence Companion mirrors that variation.

Appendix to the Primary Document: Pan Canadian Telehealth Activity Tables

Table 1 - Clinical Applications by Province/Territory

	NU	NWT	YK	NFL D	NS	PEI	NB	QC	ON	MB	SK	AB	BC
Addictions		☒	❖										
Anesthesia					☒				☒	☒			
Acquired Brain Injury									☒		☒		
Audiology	❖							❖	❖				
Autism	☒									☒			
Burn Care									❖				
Cardiology		☒		☒	☒		☒	☒	☒	☒	❖	☒	❖
Dermatology	☒	☒			☒			☒	☒	☒	☒	☒	❖
Diabetes Mgt.		☒								☒	☒	☒	
Dialysis		☒						☒	☒			☒	
Emergency Med.											☒	☒	
Endocrinology								☒	☒	☒		☒	
Epidemiology												☒	
Epilepsy												❖	
Family Medicine	☒	☒									☒	☒	
Family Visitation	☒	☒	❖		❖							❖	
Gastroenterology					☒				☒			☒	
General Surgery								❖		☒	❖	☒	
Genetics					☒		❖	☒	❖	☒		❖	❖
Geriatrics	☒				☒				☒			☒	
Hematology					☒				☒				
Home Care						☒	☒		❖			☒	
Immunology										☒		❖	
Infectious Diseases									☒	☒		❖	
Internal Medicine	☒	☒						❖	☒	☒	❖		

Mental Health	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	❖
Movement disorders (ALS, Parkinsons)									☒			☒	
Neonatology									☒	☒		❖	❖
Nephrology		❖	❖		☒		☒	☒	❖		❖	☒	
Neurology				❖	☒			☒	☒	☒		❖	❖
Neurosurgery							❖		☒	☒		☒	
Nursing	☒								❖		☒	☒	
Nutrition/Eating Disorders		❖				☒	☒		❖	☒	❖	☒	❖
Nuclear Med.				☒				☒					
Obstetrics / Ultrasound	☒	☒						☒	☒		☒	☒	❖
Oncology			❖	❖	☒		❖	❖	☒	☒		☒	❖
OT/PT/ Rehab	☒	☒	☒		☒		☒	❖	☒	☒	☒	☒	❖
Ophthalmology		☒						❖	☒			☒	❖
Orthopedics	☒	❖			☒			☒	☒	☒	☒	☒	❖
Osteoporosis Care									❖				
Otolaryngology		☒						☒		☒			
Pain Management									☒				
Palliative Care									☒			☒	❖
Pathology								❖					
Pediatrics	☒				☒		☒	☒	☒	☒	☒	☒	❖
Pharmacy													❖
Plastic Surgery					☒				☒	☒	☒	☒	
Prosthetics									☒			☒	
Psychiatry	❖	☒	☒	☒	☒			☒	☒	☒	☒	☒	❖
Psychology	☒				☒				❖	☒	☒	☒	❖
Pulmonary Care												☒	
Radiology	☒	☒	☒	☒	☒		❖	☒	☒	☒	☒	☒	❖
Respirology	☒								☒	☒		☒	
Rheumatology	☒								☒	☒	❖	☒	
Speech Therapy	☒	☒	☒					☒	☒	☒		☒	❖
Stroke									☒			☒	
Surgical follow-up	❖	❖	☒		☒				☒		❖	☒	

/Discharge plan													
Thoracic Surgery					☒					☒			❖
Traumatology								❖					
Urology					☒		❖	☒	☒		☒		❖
Vascular Surgery					☒				☒				
Wound care					☒			❖	☒	☒	☒		❖

☒ = Clinical applications identified in the 2004 Environmental Scan

❖ = Clinical applications that were not listed in the 2004 Environmental Scan, and identified in the present Environmental Scan.

Table 2 - Descriptive Summary of Telehealth Activity by Province/Territory

	Clinical Activity (Annual visits)	Connectivity	Funding	Technical Support	Scheduling
Nunavut	85 visits (Oct 03-Feb 04)	Satellite IP	\$100,000 received from Northwestel; Expansion project funded by CHIPP; Uncertain if Territory provides dedicated funds	30 Site technicians in each community who operate and maintain telehealth stations; 1 Manager of Telehealth Services	Alberta Wellnet's Telehealth Coordination and Scheduling system
NWT	36% of all visits (2002/03)	Satellite IP	100% Territory	1 Coordinator (100% funded); 4 Coordinators (10% funded)	Alberta Wellnet's Telehealth Coordination and Scheduling system
Yukon	23% of all visits (2004/05)	IP (within Yukon) Switch 56 and ISDN (outside Yukon)	No designated funding. Funds for operation, maintenance and personnel currently from Community Nursing budget	Provided by 1 member of the IT unit, Department of Health and Social Services	1 Territorial Telehealth Coordinator in Whitehorse (scheduling and day to day operations); Health Centre clerk at each remote site sets up sessions and day to day

Newfoundland & Labrador	Not available	ISDN based videoconferencing	Not available	Dedicated tech support at telehealth sites with telehealth rolled into existing FTE duties	Decentralized: process for booking varies across the province
Nova Scotia	Approximately 1500 visits per year	ISDN based videoconferencing: widespread usage of a portable 'videoconferencing cart'.	Funding is attained 100% through the Nova Scotia department of health	Dedicated tech support at telehealth sites with telehealth rolled into existing FTE duties	Not available
P.E.I.	548 telehomecare visits reported in 2002	POTS for telehomecare and IP for telemental health	100% government funded	Technical support is also available and provided by American telecare™ (videophone service)	An RN who works with the telehomecare service is the contact person who does the bookings for televisits
New Brunswick	Not available	ISDN based videoconferencing and POTS for telehomecare	100% government funded	Technical support is provided by the Biomedical services group in each of the health regions	Decentralized: jurisdictional telehealth coordinators manage scheduling needs
Quebec	<p>RUIS McGill For the RUIS McGill, the only statistics that were obtained pertain to MUHC: 770 videoconference sessions connecting 1717 external sites, of these totals 55% was used for patient care (2004)</p> <p>RUIS Laval There exists little activity statistics for the telehealth sessions performed in the RUIS Laval. 102 direct teleconsultations, 2188 store-and forward</p>	IP based videoconferencing	Not available	On-site technicians are available at each regional site during work hours. However, if no on-site technical support staff is available, the RTSS has a Technocentre National that is mandated by the MSSS to provide support to all the technocentres.	The Réseau de télécommunications sociosanitaire (RTSS) has a central reservation system. Individuals with access to the network can book the videoconferencing via the internet or by a 1-800 reservation line

	teleconsultations were performed (2005) RUIS UdeM Not available RUIS de Sherbrooke Not available				
Ontario	North Network- 1400 monthly consultations Care Connect- 5000 telehealth consultations in 2004 VideoCare Not available	North Network- uses IP videoconferencing over a secured network Care Connect – Partner hospitals are connected by an IP based virtual private network, secured between hospital endpoints. Sessions which cannot be managed on the network are hosted by Bell Canada’s ISDN network VideoCare IP based virtual private network	North Network- receives funding from the Ontario MOA and long term care (\$5.75 million for 03/04) Care Connect- Ontario MOH and long term care VideoCare Since 2003, VideoCare has been receiving annual funding from the Ontario MOH and long term care	North Network- A formal Help Desk, which operates out of Toronto and Sioux Lookout, includes remote diagnostic tools and provides technical support 24/ Care Connect- Tech support originates out of a central hub. All telemedicine sessions are monitored ‘passively’ and assistance provided when required. VideoCare Online and telephone tech support is available during videoconferences	North Network- North uses a web based, custom software application called the <i>Telehealth Service Manager</i> to support scheduling Care Connect Central management and scheduling VideoCare Decentralized: each hospital in the VideoCare network is responsible for administration of services
Manitoba	55% of all visits (n=1460) (Jan 03-Oct 03)	Broadband internet-based (IP) videoconferencing	100% Manitoba Health	4 Support service technicians; 1 Desktop System Analyst; 15 telehealth	Network Scheduler

				Coordinators; 5 additional management/admin positions	
Saskatchewan	410 patient visits (2004/05)	IP and considering Satellite for areas with limited bandwidth	100% Saskatchewan Health	Saskatchewan Health Information Solution Centre (tech support and network bridging and gateway); 15 Telehealth coordinators	Alberta Wellnet's Telehealth Coordination and Scheduling system
Alberta	More than 300 clinical events monthly	At present ISDN predominates Alberta, however a province wide move to IP connectivity is underway.	Telehealth program seeding money was derived from an anonymous \$21 million dollar donation. AHW presently oversees program grant funding.	AHW oversees bridging and interoperability standards. Regionally, the most typically utilized model is to roll IT responsibilities into the FTE duties of hospital staff at hospitals with telehealth facilities.	Alberta Wellnet's Telehealth Coordination and Scheduling system
British Columbia	An estimated 200 consultations per month	Connectivity is established via ISDN lines, however a province wide move to IP connectivity is underway	The five regional health authorities and the PHSA provide the funds required to sustain the telehealth programs	Most health authorities roll IT support into FTE duties of hospital staff, however some health authorities contract out.	B.C. does not at present utilize a province wide scheduling systems. Typically, regional telehealth coordinators work with the PHSA to gain access to their 48 port bridge.

Legend

Clinical Activity: reported according to available information

Connectivity: mode of data transmission

Funding: reported according to available information

Technical Support: Human resources or services available to users

Scheduling Support: Human resources or services available to facilitate