



National Initiative
for Telehealth

**Framework of
Guidelines**

September **2003**

Reader Information

Title	National Initiative for Telehealth Framework of Guidelines
Abbreviated Title	NIFTE Framework of Guidelines
Author(s)	National Initiative for Telehealth (NIFTE)
Publication Date	Fall 2003
Recommended Citation	National Initiative for Telehealth Guidelines. (2003). National Initiative for Telehealth (NIFTE) Framework of Guidelines. Ottawa: NIFTE.
Target Audiences	Professional regulatory/licensing organizations, telehealth providers and their organizations (both private and public), Canadian Council for Health Service Accreditation, health professionals, standard-setting bodies, governments, telehealth researchers, and telehealth technology developers and vendors.
Dissemination	Available on the Canadian Society for Telehealth (CST) Website www.cst-sct.org . Also available on the NIFTE website www.nifte.ca until April 2004.
Description	<p>The National Initiative for Telehealth Framework of Guidelines is the result of a national, multi-stakeholder, interdisciplinary collaboration and consists of a structured set of statements designed to assist individuals and organizations with the development of telehealth policy, procedures, guidelines, and/or standards.</p> <p>The focus of the NIFTE Framework of Guidelines is on telehealth activities related to the rendering of clinical services (i.e., teletriage, telecare, and teleconsultation). The document examines five main content areas related to telehealth: Clinical Standards and Outcomes, Human Resources, Organizational Readiness, Organizational Leadership, and Technology and Equipment. For each of these content areas, a number of topics are addressed using a common set of headings: What We Learned, What Needs to be Considered, Guiding Principles, Suggested Guidelines, and Recommendations.</p>
Funding Source	The Richard Ivey Foundation
Reproduction of Document	Contents of this publication may be reproduced in whole or in part provided the intended use is for non-commercial purposes and full acknowledgement is given to the National Initiative for Telehealth Guidelines.
Language of Publication	Cette publication est aussi disponible en français sous le titre: <i>Cadre de lignes directrices de l'Initiative nationale de télésanté Septembre 2003</i>

NIFTE Framework of Guidelines

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Acknowledgements

The National Initiative for Telehealth Guidelines wishes to acknowledge and thank the many individuals and groups who contributed to the development of the Framework of Guidelines:

- The Richard Ivey Foundation for its generous financial support, without which this work would not have been possible;
- The project Co-Chairs Sandra MacDonald-Rencz and Trevor Craddock who provided invaluable leadership;
- The members of the NIFTE Steering and Advisory Committees and their organizations who provided their time, guidance and expertise (see Appendix C);
- The members of the NIFTE Research Consortium who conducted the environmental scan upon which the Framework of Guidelines is based (see Appendix C);
- The many expert reviewers who took the time to carefully review and provide feedback on various drafts of the Framework of Guidelines; and
- All of the stakeholders who completed the survey questionnaire, participated in the key informant interviews, and provided feedback on the drafts of the Framework of Guidelines.

The Co-chairs of the NIFTE project, Sandra MacDonald-Rencz and Trevor Craddock, also wish to thank both the Executive Director, Dianne Parker-Taillon, and the Project Coordinator, Rita Sherman. These two individuals have been central to the success of the NIFTE Project and to ensuring that the Framework of Guidelines reached publication on time and on budget.

Note: There is presently a mix of private and public funding and delivery mechanisms for telehealth services in Canada. The NIFTE Framework of Guidelines promotes a “best practices” approach that is applicable to all telehealth services in Canada.

Executive Summary

The National Initiative for Telehealth Framework of Guidelines is an important milestone in the development of the telehealth field in Canada. This document is the result of a national, multi-stakeholder, interdisciplinary collaboration funded by The Richard Ivey Foundation. The NIFTE Framework of Guidelines consists of a structured set of statements designed to assist individuals and organizations with the development of telehealth policy, procedures, guidelines, and/or standards.

It is anticipated that the NIFTE Framework of Guidelines will have a variety of uses for both individuals and groups involved in the telehealth field. Intended users of this document include, but are not limited to:

- Regulated health professionals and their organizations to assist in the development of specific standards and/or guidelines;
- Telehealth provider organizations to use as a benchmark for service provision; and
- The Canadian Council on Health Services Accreditation (CCHSA) and other agencies to assist in the development of accreditation standards.

The focus of the NIFTE Framework of Guidelines is on telehealth activities related to the rendering of clinical services (e.g., telerriage, telecare, and teleconsultation). The document examines five main content areas related to telehealth: Clinical Standards and Outcomes, Human Resources, Organizational Readiness, Organizational Leadership and Technology and Equipment. For each of these content areas, a number of topics are addressed using a common set of headings: What We Learned, What Needs to be Considered, Guiding Principles, Suggested Guidelines, and Recommendations. For quick reference the Suggested Guidelines for all topics are listed in Chapter 1, and the Recommendations are summarized in Appendix E.

The NIFTE Framework of Guidelines was developed over a 20-month period of time and involved a number of steps and activities. One of the major project activities was an environmental scan designed to examine the current status of policy and standards related to telehealth practice in Canada and identify the directions telehealth guidelines and standards should take. The environmental scan was conducted by members of the NIFTE Research Consortium, comprised of researchers from the Alberta Research Council, the Centre for Rural and Northern Health Research (CRaNHR) at Laurentian University, Dalhousie University, and the Health Telematics Unit at the University of Calgary. The environmental scan methodology involved three activities: a literature review, a mail questionnaire, and interviews with key informants in the field of telehealth.

The information collected during the Environmental Scan formed the basis for the development of the NIFTE Framework of Guidelines. Once developed, the draft Framework underwent extensive consultation that included key experts, stakeholder groups, telehealth provider organizations, governments, telehealth providers and consumers. The document you are reading is the end product of this comprehensive development process. It is the hope of all involved that the NIFTE Framework of Guidelines will serve as a useful point of reference and contribute to the overall development of the telehealth field in Canada.



Chapter 1

NIFTE Suggested Guidelines

This chapter includes a listing of all Suggested Guidelines included in the National Initiative for Telehealth Framework of Guidelines and is intended as a quick reference for the reader. Each of the Suggested Guidelines listed is also included in the relevant section by topic, along with the other sections of the Framework, such as **What we learned**, **What needs to be considered**, **Guiding Principles**, and **Recommendations**.

Clinical Standards and Outcomes (CSO)

Duty of Care

- CSO-1 A “duty of care” is established in all telehealth encounters between the health care professional and the patient/client. The health professional gives clear and explicit direction to the patient/client at the telehealth encounter as to who has ongoing responsibility for any required follow-up and ongoing health care.

Communication with Patients/Clients

- CSO-2 Health professionals providing telehealth services are familiar with appropriate video/telephone behaviours as well as the technology and are able to multi-task (i.e., use equipment and stay focused on the patient/client). Issues such as being aware of and accommodating the limitations of video/audio and providing service from a distance are fully appreciated.
- CSO-3 Organizations providing telehealth services provide education/orientation in telehealth communication skills to health professionals prior to their initial telehealth encounter.
- CSO-4 Health professionals determine to the best of their ability each patient/client's appropriateness for, and level of comfort with, telehealth prior to the first encounter.
- CSO-5 Organizations and health professionals providing telehealth services provide patients/clients with education/orientation to the telehealth process and communication issues prior to their initial telehealth encounter.

Standards/Quality of Clinical Care

- CSO-6 Prior to commencing telehealth services for a specific patient/client, the health professional must be satisfied that the standard of care delivered via telehealth is “reasonable” and at least equivalent to any other type of care that can be delivered to the patient/client, considering the specific context, location and timing, and relative availability of traditional care. If the “reasonable” standard cannot be satisfied via telehealth, the health professional should so inform the patient/client and suggest an alternative type of health care delivery/service (e.g., face-to-face encounter, emergency room visit, etc.).
- CSO-7 Health professionals use existing clinical practice guidelines, whenever possible, to guide the delivery of care in the telehealth setting, recognizing that certain modifications may need to be made to accommodate specific circumstances (e.g., the lack of ability to touch or directly examine a patient/client).
- CSO-8 As clinical practice guidelines are health discipline specific, any modifications for the telehealth setting are approved by the discipline's clinical governing body or association.
- CSO-9 Health professionals providing telehealth services follow protocols and procedures related to: informed consent (verbal, written, recorded); privacy and confidentiality; documentation; ownership of patient/client record; and appropriate video/telephone behaviours.
- CSO-10 Health professionals providing telehealth services possess the following: required skills expected in the practitioner's field of practice; competent communication skills; an understanding of the scope of service being provided via telehealth; orientation to and ability to navigate the technology system and environment; an understanding of the telehealth operational protocols and procedures; and an understanding of any limitations of the technology being used.

Clinical Outcomes

- CSO-11 Organizations providing telehealth programs have in place a systematic method of collecting, evaluating and reporting meaningful health care outcome data which would include indicators of efficiency of service (e.g., cost per case, timeliness, accessibility, elimination of patient/client transfer/travel, and waiting time) and clinical effectiveness (e.g., diagnostic accuracy, validation of diagnostics, appropriateness of service delivered, information provided, referrals made, patient/client safety, patient/client satisfaction, acceptability, and reviews of complications, morbidity, and poor outcomes). Organizations receiving telehealth services should be consulted on appropriate outcome indicators.

Patient/Client Confidentiality

- CSO-12 Organizations and health professionals providing telehealth services are aware of, and ensure compliance with, relevant legislation and regulations designed to protect the confidentiality of patient/client information. Organizations and health professionals are encouraged to consult with legal counsel and relevant professional licensing/regulatory bodies when determining confidentiality policy.
- CSO-13 Organizations providing telehealth services have confidentiality guidelines that may include:
- site security;
 - maintenance of store and forward records, including photographs and videotapes;
 - employee confidentiality agreements for support/teaching staff associated with the telehealth encounter;
 - technical security of the technology being used (see TE-5);
 - sound-proofing of rooms/headsets;
 - establishment of security and ownership of patient/client record;
 - informing the patient/client of the name, organization/location and type of health professional they are speaking to, as well as all other individuals party to the encounter; and
 - secure patient/client's consent to obtain, use, disclose and transmit information (e.g., permission to fax/send information to hospital or family physician).

Informed Consent

- CSO-14 Organizations and health professionals providing telehealth services are aware of, and ensure compliance with, relevant legislation or regulations that relate to patient/client decision-making and consent. Organizations and health professionals are encouraged to consult with legal counsel and relevant professional licensing/regulatory bodies when determining consent policy.
- CSO-15 Telehealth encounters are preceded by a communication to the patient/client that includes information regarding:
- the name, profession and organization/location of the health professional;
 - who is participating in the encounter;
 - the process of such an encounter;
 - how the technologies work and what is involved in any specific application (where applicable);
 - potential risks and benefits;
 - the choice to decline participation and alternatives available;
 - contingency plans should technology fail or be insufficient for clinical diagnosis/management (where applicable);
 - how care will be documented;
 - security, privacy, and confidentiality of information;
 - who is responsible for ongoing care; and
 - the right to withdraw consent at any time.

- CSO-16 Written informed consent is obtained prior to specific telehealth encounters, as required by applicable legislation and regulations, such as: robotic or invasive treatment, videotaping and/or recording of the encounter, use of information for promotional/media events, patient/client photography, and other medical acts that would normally require written consent in the traditional health care setting.
- CSO-17 The consent process is integrated with existing consent processes/documentation.

Human Resources (HR)

Human Resources Plans and Policies

- HR-1 Organizations providing telehealth services have a human resource plan to ensure the right supply and mix of appropriately-trained staff, based on the needs of the program.
- HR-2 Telehealth-specific policies are integrated into existing human resource policies and new policies for telehealth should be created only when absolutely necessary.

Roles and Responsibilities

- HR-3 Organizations providing telehealth services have position descriptions that clearly articulate the roles and responsibilities of personnel engaged in telehealth activities.
- HR-4 Organizations providing telehealth services have a position description that acknowledges the diverse and central role of the person responsible for coordinating the telehealth service.
- HR-5 Position descriptions for personnel engaged in telehealth activities are reviewed regularly to reflect and respond to ongoing change in this area.
- HR-6 Organizations providing telehealth services evaluate staff performance in carrying out telehealth duties and must reflect these observations in the formal performance evaluations. Organizations expecting employees to provide telehealth services in addition to other services must include telehealth-specific components in the formal performance evaluations.

Licensure and Related Issues

- HR-7 Health professionals providing telehealth services shall be fully licensed and registered with their respective regulatory/licensing body. It should be noted that, at the present time, the locus of responsibility for health professionals providing telehealth may be in either the patient/client's jurisdiction or the health professional's jurisdiction. The respective professional licensing /regulatory body should be contacted for details.
- HR-8 Health professionals shall be aware of their locus of accountability and any/all requirements (including those for liability insurance) that apply when practicing telehealth in another jurisdiction. It should be noted that for some professions scope of practice may vary between jurisdictions. The respective professional licensing /regulatory body should be contacted for details.

Competency and Qualifications

- HR-9 Organizations providing telehealth services have policies and procedures to ensure that staff have the necessary qualifications and competencies.
- HR-10 Organizations providing telehealth services provide orientation and on-the-job training to ensure staff have the necessary competencies (see HR-12).
- HR-11 Health professionals providing telehealth services ensure they have the necessary competencies to perform their work, including understanding any limitations of the technology they are using, and the ability to multitask.

Education, Orientation and Training

- HR-12 Health professionals providing telehealth services have the necessary education, training/orientation, and ongoing continuing education/professional development to ensure they possess the necessary competencies for the safe provision of quality health services.
- HR-13 Organizations providing telehealth services link training and job performance evaluation and encourage feedback from personnel on telehealth training sessions (e.g., comfort level during the session and in the use of equipment).

Reimbursement

- HR-14 Organizations providing telehealth services have policies and procedures that reflect provincial, territorial, and federal policy regarding reimbursement of health professionals.
- HR-15 Organizations offering telehealth services have strategies for retaining personnel that include reviewing compensation to ensure it is fair and equitable.

Organizational Readiness (OR)

Planning Readiness

- OR-1 Organizations providing telehealth services have a telehealth strategic plan that:
- involves all relevant stakeholders, both internal and external, in the development;
 - supports the corporate direction and reflects the priorities of the organization; and
 - is used to monitor progress in moving forward on the plan.
- OR-2 Organizations providing telehealth services have the following in place:
- needs assessment and analysis (including clinical, educational and administrative needs);
 - business plan;
 - marketing plan (internal and external);
 - communication plan (to ensure stakeholders are informed during development and implementation phases);
 - training plan;
 - implementation plan; and
 - evaluation plan.
- OR-3 Organizations providing telehealth services have organizational telehealth policies and procedures that are based on the telehealth strategic plan.
- OR-4 Organizations providing telehealth services establish collaborative partnerships, with appropriate written agreements, based on the scope and application of the telehealth services offered.

Workplace Environment Readiness

- OR-5 Organizations providing telehealth services ensure that the workplace is “ready” for telehealth prior to implementation and that strategies are in place to address and support the components of workplace environment readiness including:
- being aware of legislation and professional and regulatory/licensing requirements that may impact on the delivery of telehealth services;
 - being structurally ready (i.e, physical environment facilitates the use of telehealth equipment and considers ergonomics);
 - having administrative support policies and procedures in place;
 - having effective communication processes in place that include initiatives to raise awareness of telehealth and keep all stakeholders informed during the planning and implementation stages;

- having a change management plan in place to deal with the impact of implementing telehealth services; and
- ensuring readiness of human resources (e.g., qualified staff, past experience with telehealth, adequate training and professional development programs [see HR-9, HR-10, HR-11, HR-12, HR-13]).

Technical Readiness

- OR-6 Organizations providing telehealth services ensure that the environment is “ready” for telehealth prior to implementation, and put strategies in place to address and support the components of technical readiness including:
- network and local site technical readiness and interoperability;
 - technical feasibility;
 - bandwidth;
 - verification of fidelity of data transmission;
 - procedures to ensure that technology/equipment are checked regularly; and
 - availability of technical support.

Organizational Leadership (OL)

Organizational Leadership Overarching Issues

- OL-1 Organizations providing telehealth services have documented organizational policies, procedures, standards, and guidelines. In organizations providing a variety of health services these are integrated with existing documents, whenever possible, and new policies etc., for telehealth are developed only as needed.
- OL-2 Organizations providing telehealth services consider the specific telehealth applications and program type (e.g., pilot, research, ongoing service) when developing organizational policies, procedures, standards, and guidelines.
- OL-3 Organizations providing telehealth services review policies, procedures, standards, guidelines, and agreements more frequently than in other health service areas due to the ongoing development and change in the field.
- OL-4 Organizations providing telehealth services are aware of required policies, procedures, standards, and guidelines specific to “networked” services which go beyond site requirements, such as shared central services (e.g., scheduling) or infrastructures (e.g., bridges).

Organizational Accountability

- OL-5 Organizations providing telehealth services have clearly documented accountabilities in relation to the telehealth services.
- OL-6 In organizations providing telehealth services in addition to other services, the person responsible for coordinating telehealth services is accountable to someone positioned in the organization to have a strategic impact.
- OL-7 Organizations providing telehealth services have privacy policies in place that consider:
- the crossing of organizational and facility boundaries and sharing of highly personal information; and
 - who is present during a telehealth session and that the client is informed.
- OL-8 Organizations providing telehealth services have policies and procedures in place that protect the confidentiality of information (see CSO-12, CSO-13) and consider:
- technical security (passwords and encryption);
 - site security;

- maintenance of store and forward records, including photographs and videotapes;
 - employee confidentiality agreements for all staff and volunteers associated with the telehealth encounter; and
 - establishment of security and ownership of patient/client record.
- OL-9 Telehealth security policy and procedures be integrated with those for electronic health records, whenever possible.
- OL-10 Organizations providing telehealth services have policies and procedures in place that protect the physical security of telehealth equipment and electronic security of data (see TE-5).
- OL-11 Organizations providing telehealth services ensure that all individuals involved in the provision of telehealth services are aware of, and follow, policies and procedures related to confidentiality and security.
- OL-12 The same ethical principles that apply in any face-to-face patient/client interaction apply to telehealth encounters.
- OL-13 Organizations providing telehealth services have policies and procedures to ensure that informed consent is obtained and that are compliant with relevant provincial/territorial legislation and regulations related to patient/client decision-making and consent. Organizations are encouraged to consult with legal counsel and relevant professional bodies when determining consent policy (see CSO-14, CSO-15, CSO-16, CSO-17).
- OL-14 Organizations providing telehealth programs have policies and procedures for documentation and storage of patient/client telehealth records that respect the confidentiality of the information.
- OL-15 Organizations providing telehealth services manage risks within the telehealth program by:
- ensuring they have a documented risk management plan;
 - ensuring that equipment acquisition, maintenance, and quality assurance is set in both policy and practice (see TE-1, TE-16);
 - having specific guidelines for recruitment, evaluation and training of staff (see HR-6, HR-9, HR-10, HR-12, HR-13);
 - having a written policy statement regarding health professional licensing, credentialing and granting of privileges (see HR-7, HR-8); and
 - clearly defining the roles, responsibilities and accountability of the different individuals or groups within the organization involved in providing telehealth services (see HR-3, HR-4, HR-5).
- OL-16 Organizations providing telehealth services globally and internationally have specific policies in place that address such issues as liability, licensure and reimbursement.

Ensuring Quality Telehealth Services

- OL-17 Organizations providing telehealth services maintain a quality practice environment to promote recruitment and retention of health professionals and quality client outcomes. Activities such as sharing and taking up best practices and regularly reviewing research literature should be promoted within organizations providing telehealth services.
- OL-18 Organizations providing telehealth programs have clearly defined and coordinated activities to continually monitor and improve quality of telehealth services.
- OL-19 Organizations providing telehealth services conduct more frequent reviews and evaluation of the service, particularly upon initial implementation.

Continuity

- OL-20 Organizations offering multiple telehealth services have mechanisms in place to facilitate coordination of the telehealth services including:
- management of the equipment and physical space;
 - developing policies, procedures and guidelines for use of the services; and
 - setting priorities.
- OL-21 When two or more health care organizations/agencies are involved in the telehealth service delivery, a written agreement or contract between the health care organizations/agencies is in place. This agreement includes written statements appropriate to all relevant policy issues, such as:
- reimbursement;
 - liabilities (referring and consulting providers, organizations/agencies);
 - legislation regarding security and protection of health information;
 - informed consent;
 - documentation and storage of patient/client records;
 - protection of patient/client “rights to privacy, confidentiality, and quality care”; and
 - detailed protocols for data preparation, transmission, receipt, mutual responsibilities, and liabilities (Nerlich, et al., 2002).
- OL-22 Organizations providing telehealth services have policies and procedures to ensure accountability and sustainability of the telehealth services.

Technology and Equipment (TE)

Procurement Practices

- TE-1 When procuring equipment, user input is sought to ensure that technology selection is based on functional capacities required to address user needs.
- TE-2 Suggested criteria when purchasing telehealth equipment include:
- ease of use;
 - price;
 - conformance to standards and requirements;
 - performance of equipment during demonstration;
 - ability to interface with peripherals;
 - service/support;
 - speed;
 - means of communication (e.g., IP, ISDN, POTS);
 - acceptability to patients/clients;
 - financial stability of vendor;
 - CSA certification;
 - Interoperability;
 - review of upgrade path for equipment;
 - portability;
 - scalability;
 - requirements of Medical Devices, Health Canada; and
 - clinical guidelines.

Safety

- TE-3 Organizations providing telehealth services comply with all relevant safety laws, regulations and codes including:
- CSA Canadian Electrical Safety Code (CSA 22.1);
 - CSA safety standard for electromedical equipment (CSA 60601.1.1)

- Industry Canada's Electromagnetic Interference Standard (ICES 003); and
 - Health Canada Medical Devices policy.
- TE-4 Organizations providing telehealth services ensure that infection control policies and procedures are followed in the delivery of telehealth services.

Security

- TE-5 Organizations providing telehealth services have policies and procedures in place to ensure the physical security of telehealth equipment and the electronic security of data that recommend:
- telehealth equipment be kept behind locked doors, whenever possible;
 - peripherals and other movable equipment be physically secured;
 - access to telehealth equipment be limited through the use of keys and passwords;
 - ISDN and IP networks require user authentication protection;
 - IP networks require a secure network behind a firewall with encryption; and
 - use of screensavers.

Diagnostic Quality

- TE-6 Organizations providing telehealth services follow application-specific diagnostic quality guidelines and standards, whenever possible.
- TE-7 In the absence of application-specific diagnostic quality guidelines and standards, the literature on efficacy/effectiveness is consulted.

Reliability

- TE-8 Organizations providing telehealth services adhere to reliability standards and guidelines where they exist.
- TE-9 Organizations providing telehealth services take steps to ensure equipment reliability that may include the following:
- efforts be made to initially purchase the appropriate equipment (see TE-2);
 - a check list is instituted for post-installation testing of equipment;
 - preventive maintenance occurs (including pre-session calibration and checklists);
 - pre-session calibration of equipment occurs, using checklists;
 - users be trained in proper use of equipment;
 - reliability standards and guidelines are adhered to, where they exist; and
 - contingency plans are in place.
- TE-10 Organizations providing telehealth services track equipment reliability using logbooks that record:
- start time;
 - end time;
 - technical problems;
 - user problems; and
 - how problems were resolved.
- TE-11 Organizations providing telehealth services take steps to ensure reliability of the telecommunications network by having:
- quality of service agreements in place with telecommunication providers; and
 - access to additional lines when required for mission critical services.

Acceptability

- TE-12 Organizations providing telehealth services take steps to maximize equipment acceptability that include:
- purchase of user-friendly equipment (see TE-2);
 - appropriate training of users and patients/clients;
 - ongoing provider and patient/client evaluation of equipment acceptability; and
 - existing standards/guidelines.



Interoperability

- TE-13 Suggested measures to ensure interoperability between service providers within a region include:
- test the equipment prior to purchasing (see TE-2);
 - buy equipment from one or two suppliers;
 - purchase standards-based equipment; and
 - conduct conformance and interoperability testing prior to full-scale deployment.
- TE-14 Suggested measures to ensure interoperability outside of a region include:
- perform test calls between systems;
 - purchase standards-based equipment; and
 - follow ISO, Alberta Research Council or other guidelines, where applicable.

Scalability

- TE15 Organizations providing telehealth services take steps to facilitate scalability when purchasing equipment and technology that may recommend:
- developing an overall plan that includes a needs assessment with user input and considers future growth and change;
 - using scalability as a requirement in the procurement process (see TE-2); and
 - using lifecycle planning (a “refresh strategy”) once equipment is purchased that acknowledges new requirements and upgrades that emerge, as well as the need to replace equipment, and plan accordingly.

Maintenance

- TE-16 Organizations providing telehealth services have processes in place to ensure the safety and effectiveness of equipment that require:
- preventive maintenance that may include:
 - network checks
 - equipment checks
 - software updates
 - keeping a supply of spare parts
 - interoperability checks
 - logbook analysis
 - pre-session testing (including calibration)
 - remote access to equipment;
 - equipment maintenance agreements in place;
 - maintenance services available locally;
 - individuals performing maintenance have appropriate technical training;
 - lifecycle planning (a “refresh strategy”) for required updates and replacement of equipment;
 - quality assurance measures in place (i.e., pre-session testing);
 - clear accountability for all equipment; and
 - education of staff regarding maintenance requirements.

Current Standards and Guidelines

- TE-17 Organizations providing telehealth services follow existing applicable guidelines and standards, whenever possible.



Chapter 2

Background

This chapter provides key background information related to the who, what, where, why, when and how of the National Initiative for Telehealth Guidelines. It also describes the considerations, assumptions, and limitation of the Framework of Guidelines.

2.1 Present Status of Telehealth in Canada

Canada's health care system is facing many challenges and changes with increasing pressures to improve access while containing costs. Concurrently, there has been unprecedented growth and development in information technology and communications systems, with Canada being a world leader in this field. This has stimulated interest and exploration of opportunities for the application of these systems to the health care field in this country which, in turn, has led to the development of numerous initiatives that are being grouped under the umbrella term "telehealth". Telehealth is defined as "the use of information and communications technology to deliver health and healthcare services and information over large and small distances" (Picot, 1998). Telehealth is not new to the health care system in Canada. Health professionals, poison control centres and crisis lines have been using the telephone for decades to deliver services. According to Picot and Craddock (2000) the earliest identifiable telemedicine activities in Canada were those undertaken by Newfoundland and involved an audio-only teleconference network serving nine communities delivering health and education services.

Telehealth has been described as one of the most promising aspects of the Canadian health care system. The Report of the Commission on the Future of Health Care in Canada (Romanow, 2002) highlighted telehealth as a mechanism for improving access to health care services for rural and remote communities.

As the number of telehealth projects, programs and services has steadily increased in recent years, attention is being placed on policy and quality and outcome issues related to the delivery of telehealth services. Health and research professionals with interest and expertise in the field of telehealth (Canadian Society for Telehealth, 2001; Pong and Hogenbirk, 2000; Health Canada, 2000) have cited the following as some of the important issues related to telehealth:¹

Organizational:

Organizational readiness, processes, leadership, and resources; management resources and decision making; funding; quality assurance measures and continuous quality improvement; accountability and accreditation; linkage and coordination with all services; legalities, regulations, policies, service jurisdictions, liabilities, and partnerships; local mergers, privatization, regionalization and globalization; need for planning and business case approach; handling continual change; etc.

Human Resources:

Telehealth-specific policies, regulation, license and qualifications relating to hiring or job performance criteria; telehealth-specific roles and responsibilities; liability and malpractice issues; remuneration; staffing; orientation; on-the-job training or continuing education including formal and informal training in telehealth; professional issues and changes to practice norms; cross-jurisdictional human resource issues; etc.

Technology and Equipment:

Equipment standards; environment and safety; reliability, security and maintenance; procurement policies; costs and funding; interoperability; interactive, integrated and supportive systems; realistic human and technological interface; continuity; etc.

Telehealth has been described as one of the most promising aspects of the Canadian health care system. The Report of the Commission on the Future of Health Care in Canada (Romanow, 2002) highlighted telehealth as a mechanism for improving access to health care services for rural and remote communities.

¹ Note: Some, but not all, of these issues are addressed in the National Initiative for Telehealth Guidelines.

Clinical Standards and Outcomes:

Standards, ethics, best practices and quality of clinical care; clinical outcomes; communication with patients/clients and client-provider partnerships; informed consent; confidentiality and information security; safety; equity; accessibility; timeliness; efficiency and effectiveness; application of current knowledge; etc.

This list of issues demonstrates the need to revisit and reassess the formal structures within which health care operates namely, the law, regulations, policies, standards, and quality measurement methodologies to identify the impact of telehealth. In some cases, these structures may need to be revised or adapted to ensure that the health sector integrates telehealth appropriately as it meets the mandate of providing quality service to its patients/clients. The telehealth community is eager to develop a comprehensive policy for telehealth in Canada. However, it has been recognized that the development of a comprehensive policy may be premature at this time. Instead, it has been suggested that some intermediate steps need to be taken first, two of which are: the development of telehealth guidelines and standards by the various health provider organizations; and the evaluation of telehealth as a component of accreditation.

Currently several initiatives are looking at standards related to telehealth within their specific contexts. However, as one peruses the literature there appears to be a general need for leadership in bringing the stakeholders together to develop, and reach consensus on, a comprehensive framework of guidelines that can be utilized by the various organizations within the health community such as health provider organizations and the Canadian Council for Health Service Accreditation (CCHSA). This has the potential for major cost savings by reducing time, effort and duplication as standards are developed.

2.2 Overview of the National Initiative for Telehealth Guidelines

In 2001 several organizations recognized the need for national leadership on key issues related to telehealth and telehealth standards. This led to the National Initiative for Telehealth (NIFTE) Guidelines, a 20-month multi-stakeholder project funded by The Richard Ivey Foundation. The project was initiated in January 2002 with the primary outcome being the development of a Framework of Guidelines for Telehealth to be used by:

- regulated health professional organizations in developing their specific standards;
- organizations providing telehealth services² as a benchmark for service provision; and
- the Canadian Council on Health Services Accreditation (CCHSA) in developing accreditation standards.

The overall goals of the project are to:

- assist in the continuing development of telehealth services in Canada by bringing together a national, interdisciplinary group, including experienced credible researchers;
- develop a comprehensive framework of national guidelines to facilitate the development of telehealth standards by the various health provider organizations and contribute to the ongoing provision of quality telehealth services; and
- build a sustainable network of telehealth stakeholders that facilitates ongoing integrated, multi-sectoral collaboration.

² The generic term “organizations providing telehealth services” is used throughout this document to refer to the various types of organizations involved in the delivery of clinical telehealth services such as telehealth networks, health care facilities, call-centres providing telephone advice, and health professionals working in solo office practices.

NIFTE is a multi-stakeholder interdisciplinary project involving a consortium of individuals and organizations with a variety of backgrounds and experience, including representatives of professional associations, service provider organizations, decision makers, government, and researchers. The project is led by a Steering Committee that is directly accountable to the project funder. The project Co-Chairs are Sandra MacDonald-Rencz and Trevor Craddock. A list of Steering Committee members can be found in Appendix C.

An Advisory Committee representing key stakeholders, including a total of 30 members representing national stakeholder groups, provided advice to the Steering Committee and Secretariat. The role of the Advisory Committee also includes promoting the work of the project and facilitating uptake of the Framework of Guidelines. A list of members is available in Appendix C.

A Research Consortium, involving four research teams, was responsible for conducting an environmental scan of telehealth in Canada. The four teams in the Research Consortium, along with their areas of interest, are listed in Appendix C.

The project was managed by a Secretariat, consisting of an Executive Director, Dianne Parker-Taillon and Project Coordinator, Rita Sherman. The role of the Secretariat has been to:

- manage the day-to-day administration of the project, including development and adherence to a detailed workplan and budget;
- compile a comprehensive database of stakeholders including programs, projects, providers and telehealth firms in Canada;
- establish and maintain communication networks among all involved, including stakeholders; and
- develop the Framework of Guidelines based on the results of the Environmental Scan, lead the consultation process, and manage the final production of the document.

The project commenced in January 2002 and was completed in September 2003. In order to achieve the goals of the initiative outlined above, six key activities were undertaken:

- developing a database of key telehealth stakeholders, programs, providers and technology developers;
- developing a national interdisciplinary stakeholder network, including researchers, to assist in the continuing development of telehealth in Canada;
- conducting an environmental scan of the current status of telehealth in Canada;
- developing a framework of national guidelines for telehealth that can be used by health provider organizations in developing discipline-specific standards;
- providing telehealth information to the CCHSA to facilitate the development of standards for telehealth services; and,
- communicating and disseminating information about the initiative.

2.3 Purpose of the NIFTE Framework of Guidelines

The purpose of the NIFTE Framework of Guidelines is to provide a structured set of statements to assist individuals and organizations with the development of telehealth policy, procedures, guidelines, and/or standards.

Since the outcome of the NIFTE project is the development of a Framework of Guidelines, it is important to understand what is meant by the terms guidelines and standards.

A standard is a statement established by consensus or authority that provides a benchmark for measuring quality and that is aimed at achieving optimal results (NIFTE Research Consortium, 2003). A guideline is a statement of policy or procedures by which to determine a course of action or give guidance for setting standards (adapted from Loane and Wootton, 2002). According to Loane and Wootton (2002) standards imply technical compliance with rigid and defined criteria while guidelines imply following recommended, and to some extent flexible, practices. The overall aim of guidelines is to promote best practice and to improve the consistency and efficiency of health care, based on scientific and clinical research and expert opinion. This definition for guidelines is consistent with the intent of the NIFTE Framework of Guidelines.

2.4 How to Use This Document

The NIFTE Framework of Guidelines has been developed for use by a variety of audiences for a number of applications, including:

- to provide guidance and assist health organizations with the development of new telehealth programs;
- to assist health organizations with the monitoring and evaluation of existing of telehealth programs;
- to assist health professional organizations and standard-setting bodies with the development of standards and guidelines for telehealth;
- to provide guidance to organizations and health professionals in bench-marking service provision;
- to assist researchers in identifying potential research questions and areas of inquiry;
- to assist educators with the development of education/training programs related to telehealth; and
- to assist governments and other decision-makers in the development of policy related to telehealth.

Those wanting a quick reference should review the Executive Summary and Chapter 1. Each individual chapter may be read as a stand-alone reference, and topics are referenced to assist the reader in finding related information in other chapters. Recommendations indicated throughout the document are included in Appendix E.

2.5 Scope of the Project

The scope of telehealth included in this project is illustrated in Figure 1. The diagram shows three continuums related to the delivery of telehealth services radiating from the centre point of care. The three continuums are:

- Service Delivery, i.e., teletriage, telepharmacy, telecare (telehome care, telemonitoring), web-based consultation, and teleconsultation;
- Professional Support, i.e., clinical support tools, telementoring, and professional education; and
- Public Education, i.e., disease-specific, prevention and promotion, and web-based health education and support.

The area to the right of the vertical dotted line defines where along the telehealth service delivery continuum this project was focused. The focus was on activities related to the *rendering of clinical services*. The following table summarizes what was considered within and outside the project scope:

Within Scope of Project	Outside Scope of Project
<ul style="list-style-type: none"> • tele-consultation • tele-triage • telecare (i.e., telehome care, telemonitoring) • web-based clinical consultation • telepharmacy • clinical support tools (i.e., protocol-based decision-making tools) • telementoring and telemonitoring of a health professional (i.e. surgery) • technology and equipment requirements of users in delivery of clinical services • poison control • ambulance dispatch • public health 	<ul style="list-style-type: none"> • health professional education (e.g., tele-education, e-learning) • public education websites • telemedicine in space

In terms of the scope of outcomes, the project has developed a bank of valuable knowledge relevant to telehealth standards in Canada. It will be disseminated to all relevant stakeholders for their use in developing professional and application-specific standards. The project did not develop and approve specific standards for specific regulated health professional associations or CCHSA. However, all groups recognized the value of working together in the development of a common framework that could be used as a context for the development of profession-specific, telehealth application-specific and accreditation standards. In addition, the project did not include the development of standards and performance indicators for accreditation purposes. However, it did include the identification of those that currently exist. Standards and performance indicator development is a complex and resource-intensive process and it is anticipated that this will be a separate activity undertaken at a later stage by the CCHSA and the stakeholder organizations through their normal mechanisms.

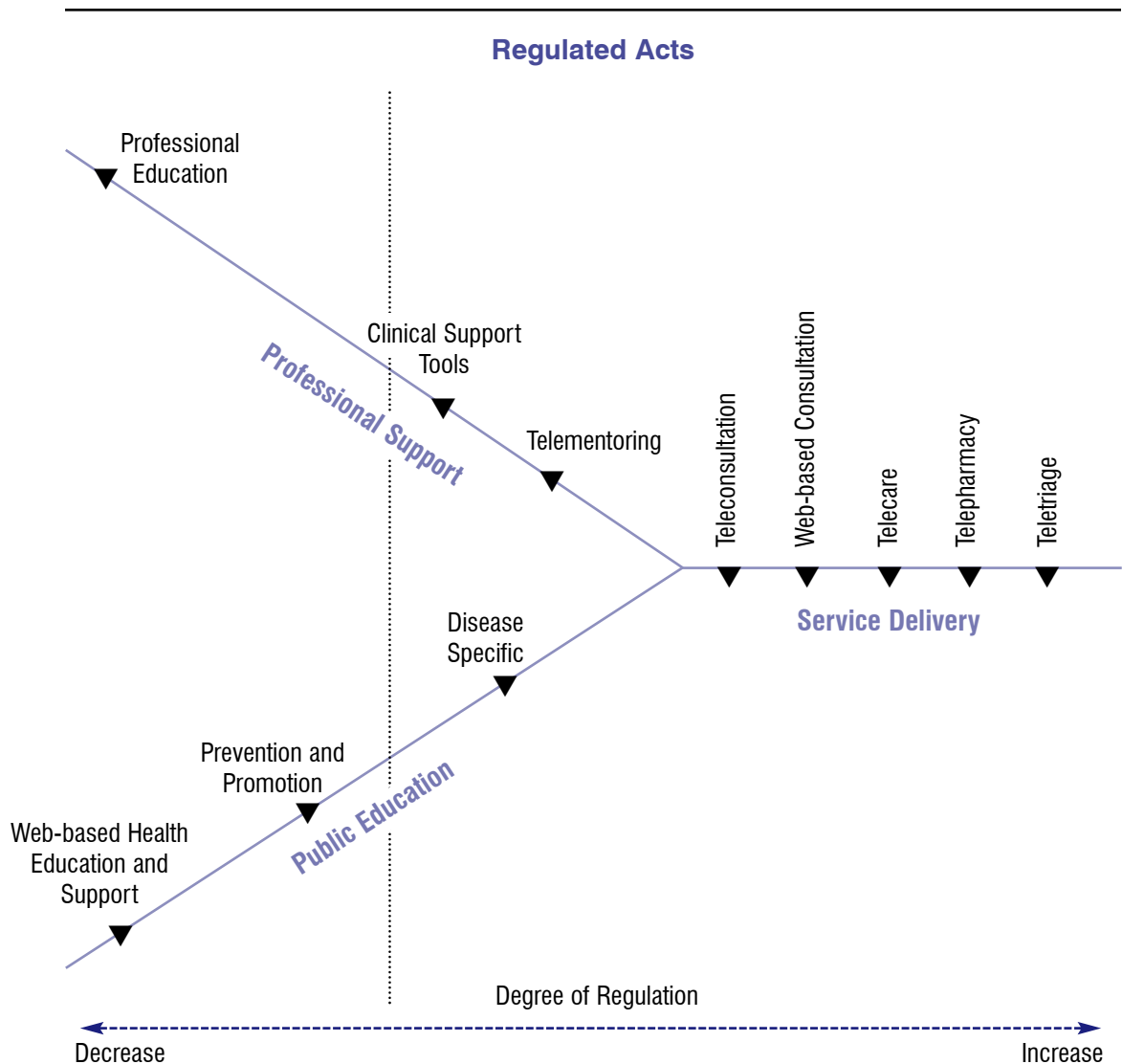


Figure 1: Scope of National Initiative for Telehealth Guidelines

2.6 Development Process

The development of the NIFTE Framework of Guidelines involved a number of steps and activities. These are briefly described below under two main headings: The Environmental Scan and The Framework Development.

2.6.1 The NIFTE Environmental Scan

The NIFTE Research Consortium, comprised of researchers from the Alberta Research Council, the Centre for Rural and Northern Health Research (CRaNHR) at Laurentian University, Dalhousie University, and the Health Telematics Unit (HTU) at the University of Calgary, was responsible for conducting the Environmental Scan. The purpose of the Environmental Scan was to collect data on the current status of telehealth services and activities in Canada with respect to issues pertaining to clinical standards, human resources, organizational context, and technology. Findings from the Environmental Scan were used as the basis for the development of the NIFTE Framework of Guidelines.

The Environmental Scan was conducted from March to December 2002, and entailed gathering data and information using a variety of approaches such as: literature review and synthesis; a mail survey of key stakeholders including individuals and agencies engaging in telehealth services; and in-depth key informant interviews of a sample of knowledgeable individuals. Each team of researchers was responsible for one issue: Alberta Research Council – technology and equipment; Laurentian University’s Centre for Rural and Northern Health Research (CRaNHR) – human resources; Dalhousie University – clinical standards and outcomes; the University of Calgary’s Health Telematics Unit (HTU) – organizational leadership. The HTU was also responsible for conducting the mail survey on behalf of the four research teams. CRaNHR was responsible for overall research coordination and for developing the key informant interview methodology. The Research Consortium worked closely with the NIFTE Secretariat on such matters as the Stakeholders Database, mailing out the Stakeholder Survey, and the NIFTE website.

Literature Review:

An extensive literature review was conducted by the research teams for each of the four topic areas. Generally the literature searches involved the following steps:

- development of keywords and search strategies;
- on-line searches of databases for potentially relevant articles;
- screening of abstracts to identify studies for further review;
- review of reference sections of selected articles, books, and reports for additional, potentially useful studies; and
- internet search for telehealth information as it pertains to standards, guidelines and/or accreditation

Information was extracted from the most informative references. Details concerning the literature review methodology and outcomes are described in the NIFTE Environmental Scan report (NIFTE Research Consortium, 2003).

Stakeholder Survey:

The purpose of the stakeholder survey was to build upon the key issues and gaps identified by the research teams during the literature review phase of the environmental scan and to gain an overall understanding of the current status of policy, standards, and guidelines as they relate to telehealth practice in Canada. The mail survey, conducted on behalf of the Research Consortium by the HTU, was completed in the summer of 2002. A total of 230 surveys were mailed out to stakeholders listed in the NIFTE Stakeholder Database. A response rate of 68% was achieved with a total of 156 of the surveys returned. Initial data analysis was done by the HTU. Each research team conducted more in-depth analysis of the data, as required. Details concerning the stakeholder survey methodology and outcomes are described in the NIFTE Environmental Scan report (NIFTE Research Consortium, 2003).

Key Informant Interviews:

The purpose of the key informant interviews was to build upon the key issues and gaps identified during the literature search and survey phases with the goal of gaining an understanding of the current status of policies, standards and guidelines as they relate to telehealth practice in Canada, to determine what directions they should take, and how they should evolve in order to meet the health care needs of Canadians. The key informant interviews were conducted by telephone or face-to-face. Each team interviewed between 11 and 13 knowledgeable individuals involved in the practice of telehealth. Details concerning the key informant interview methodology and outcomes are described in the NIFTE Environmental Scan report (NIFTE Research Consortium, 2003).

Preparation of Final Report:

The four research teams and the Secretariat conducted extensive discussions on the format of the final report and how the results would be presented. Each research team prepared its own report and, although the contents of each report were issue-specific, the format of these reports was as consistent as possible. Individual draft reports were completed in February 2003, and circulated to all research teams, as well as the NIFTE Secretariat. CRaNHR then prepared the final report of the Environmental Scan, which contained an introduction and a synthesis, along with the four stand-alone reports (NIFTE Research Consortium, 2003).

2.6.2 NIFTE Framework of Guidelines Development

The NIFTE Framework of Guidelines was developed during the period of January to September 2003, and involved five major steps:

Framework of Guidelines Preliminary Draft Development:

A preliminary draft of the Framework was developed in sections by the project Secretariat based on the project plan, results of the NIFTE Environmental Scan, discussions with the Advisory Committee members, and CCHSA Standards. After the preliminary draft of the Framework was completed, sections were circulated for content review to the CCHSA, the Research Consortium and selected key experts identified by the researchers. A total of 27 reviews of the various sections of the preliminary draft were returned. The preliminary draft was revised based on the feedback received and Draft 1 was developed. The Steering Committee then reviewed Draft 1 of the Framework with supporting material and approved it for preliminary consultation.

Preliminary Consultation:

During this step, the Advisory Committee members and selected key experts/stakeholders received Draft 1 and provided feedback to the Secretariat based on their experience/opinion. At this point, these reviewers had not had access to the NIFTE Environmental Scan Report. A total of 13 of a possible 23 responses (57%) from Advisory Committee members were received. The feedback was collated and Draft 2 of the Framework developed based on the comments. The Steering Committee then reviewed the summary of feedback and Draft 2 of the Framework and approved Draft 2 for broad consultation.

Broad Consultation:

Draft 2 of the Framework was posted on the NIFTE Website and the Advisory Committee, government contacts, key experts, stakeholders in the database, and the international community were invited to comment on it by using a Web-designed feedback form. The report of the Environmental Scan was also made available at this time on the NIFTE Website. Draft 2 was discussed at the Advisory Committee meeting held May 13-14, 2003, and presented during a panel discussion at E-Health 2003 in Toronto. A total of 51 responses were received through the broad consultation process and overall the feedback was positive. Once again, the Draft was revised in consultation with key experts.

Sign-off:

The sign-off phase included review and final comment of Draft 3 by the Advisory Committee and Steering Committee. The Steering Committee reviewed the summary of feedback on Draft 3 and approved the Framework for publication.

Publication and Dissemination:

In the final step of this process the Framework was translated, published and disseminated. It was posted on the NIFTE and Canadian Society for Telehealth (CST) Websites for reference by all committee members, stakeholders, the international community, and other interested parties.

2.7 Format of the NIFTE Framework of Guidelines

The NIFTE Framework of Guidelines is a structured set of statements designed to assist individuals and organizations with the development of telehealth policy, procedures, guidelines, and/or standards. Definitions for key terms related to each of the topic areas are included in Appendix A, Glossary of Terms.

The NIFTE Framework has five main content areas: Clinical Standards and Outcomes; Human Resources; Organizational Readiness; Organizational Leadership; and Technology and Equipment. Within each of the main content areas a number of topic areas are discussed and within each topic area the framework uses a structured approach with a common set of headings for each of the topic areas. The following provides a listing of the headings used for each topic area and a brief description of what is included under each.

NIFTE Framework of Guidelines

Description of Headings included for each topic area:

What we learned: Provides a brief summary of the results of the Environmental Scan conducted by the NIFTE Research Consortium that includes a compilation of facts and expert opinion. (NIFTE Research Consortium, 2003).

What needs to be considered: Briefly summarizes how this topic differs from/builds on practice in other service delivery areas, and identifies present gaps in knowledge, evidence or experience that points to a need for further work.

Guiding Principles: Includes statements that describe basic principles or underlying assumptions associated with the topic that may be used to guide the development of policies, procedures, standards, guidelines and actions.

Suggested Guidelines: Describes, wherever possible, what NIFTE is prepared to suggest (i.e., processes, procedures or policies). These statements are written in the present tense to indicate that it is expected they will be followed. The guidelines have been numbered consecutively within each section and are also included in Chapter 1 for easy reference.

Recommendations: Provides suggestions for future action to address identified gaps in knowledge, experience or evidence. All of the recommendations are included in Appendix E for easy reference.

Since telehealth is an evolving field, the present status of development of policies, standards and guidelines varies depending on the topic area. You will note as you review the Framework that each of the topic areas includes all of the above headings, but in some cases there is no content under a particular heading. This approach demonstrates the variation in terms of development of the telehealth field and highlights gaps.

2.8 Considerations and Assumptions Related to the NIFTE Framework of Guidelines

Presented below are a number of considerations and assumptions explicitly acknowledged in developing the NIFTE Framework of Guidelines:

- The use of telehealth is not a health sector in and of itself, but rather a process involving a wide variety of applications intended to assist and augment existing services.
- There is a range in the types of organizations providing telehealth services such as telehealth networks, health care facilities, call-centres providing telephone advice and health professionals working in solo office practices. In addition, there is a range of types of applications of telehealth such as teletriage, remote monitoring, diagnostic imaging and teleconsultation. It is difficult to anticipate a single policy or guideline for telehealth, when the settings and activities are so varied. However, it is believed that the development of a framework of guidelines based on the common elements of telehealth service delivery will facilitate the exchange of knowledge about best practices among the diverse settings and applications.
- There is widespread acknowledgement in the health care system of the need to develop special tools such as evidence-based “best practices” and guidelines for all health services. This is not only a need specific to telehealth applications, but also a response to a broader sense of accountability.
- There are mixed funding mechanisms (i.e., public, private) in place with respect to remuneration for telehealth services. It is felt that the NIFTE Framework of Guidelines promotes a “best practices” approach that would be applicable regardless of the funding mechanism.
- Similarly, there are mixed delivery mechanisms (private, public, not-for-profit, mix of those) in place for telehealth. It is felt that the NIFTE Framework of Guidelines promotes a “best practices” approach that would be applicable regardless of the delivery mechanism.
- Health is under provincial/territorial legislation and while there are common/shared guidelines, standards and codes of ethics, the regulation of health professionals is through provincial/territorial legislation and rests with the respective provincial/territorial regulatory/licensing body.
- The legal requirements of organizations and health professionals providing telehealth services vary from jurisdiction to jurisdiction. It is important that the legal requirements where the organization/health professional providing telehealth services is located, as well as the laws of the jurisdiction where the services are being provided, are accommodated. Organizations and health professionals providing telehealth services need to be aware of cross-jurisdictional issues when providing services.
- The purpose of the NIFTE Framework of Guidelines is to assist with the development of telehealth policies, procedures, guidelines and standards. The setting of policy and standards for health professionals is the responsibility of the respective professional organizations.
- The return on investment for telehealth activities needs to be viewed from a societal perspective, as well as to from an organizational perspective. This return may be seen as the ability to serve more individuals or seen as savings distributed among patients and a number of the organizations, as well as the primary service. These returns may not necessarily be seen by the organization providing the services as cost avoidance, particularly where the telehealth application required a sizable up-front investment. Evidence of benefits of telehealth should be considered when it exists.

2.9 Limitations of the NIFTE Framework of Guidelines

As in any project of this nature, there are limitations in both process and outcome that need to be considered:

- Telehealth is an evolving health field that has limited scientific, clinical or health service research available for many of the applications. As a result, the approach used to develop the Framework of Guidelines involved a large degree of survey response, expert opinion, and consensus, in addition to the review of the existing literature.
- The project was limited to a 20-month period of time thus limiting the extent of the inquiry and the consultation periods.
- The Framework of Guidelines does not specifically address future telehealth applications/innovations such as robotics, e-surgery, e-colonoscopy and e-endoscopy that are now in the research and development and pilot stages and will need to be addressed in the future.
- The Framework of Guidelines does not specifically address the variety of workers involved in the provision of telehealth services. Rather, the focus is on regulated health professionals.
- While the Framework of Guidelines has attempted to describe the common elements of telehealth service delivery, there may be aspects that do not apply to all telehealth settings and applications.



Chapter 3

Clinical Standards and Outcomes

This chapter focuses on topics related to clinical standards and outcomes and will be of particular interest to health professionals, health administrators, professional regulatory/licensing bodies, standard-setting bodies, and researchers. Discussed from the clinical perspective are the following topics: Duty of Care, Communication with Patient/Clients, Standards/Quality of Care, Clinical Outcomes, Patient/Client Confidentiality, and Informed Consent. The **What we learned** sections of this chapter are based primarily on the work of Finley, Reid, Szpilfogel and Heath (2003).

3.1 Duty of Care

What we learned:

The practice of telehealth challenges the conventional perception of the health care professional-patient/client relationship. The results of the environmental scan consistently indicated that the geographical distance between a telehealth professional and patient/client does not significantly affect the determination of whether there is an established professional-patient/client relationship. This was reflected by the fact that only a minority (20%) of organizations surveyed had specific criteria to determine whether a health care professional owes a “duty of care” to the patient/client in a telehealth encounter. Respondents of the key informant interviews also indicated that no specific criteria was required to determine if a “duty of care” is owed in the telehealth setting and consistently commented that they were unaware of any “explicit standards or criteria” related to the establishment of “duty of care” in a traditional face-to-face encounter.

The environmental scan did indicate that the “nature” of the encounter (e.g., technology limitations, care of patient/client often involving a team of health care professionals, inability to view patient/client in the teletriage situation, etc.) is slightly altered compared to the traditional provision of care, therefore clear direction on who has clinical case responsibility and their obligations should be provided to the patient/client and other health care professionals involved in the telehealth encounter.

What needs to be considered:

- “Duty of care” is slightly altered, due to the “nature” of the encounter in the telehealth setting.

Guiding Principles:

- “Duty of care” should be established in all telehealth encounters to clarify ongoing responsibility for the patient/client, as well as the roles and responsibilities of other health care providers present.

Suggested Guideline:

CSO-1 A “duty of care” is established in all telehealth encounters between the health care professional and the patient/client. The health professional gives clear and explicit direction to the patient/client at the telehealth encounter as to who has ongoing responsibility for any required follow-up and ongoing health care.

Recommendations:

No material available for this section.

3.2 Communication With Patients/Clients

What we learned:

Our findings in this area are discussed in three topic areas: evaluation of communication in the telehealth setting; quality of telehealth communication; and communication training programs.

Evaluation of Communication in the Telehealth Setting

According to the telehealth literature, most of the telehealth research has had a technological focus, with some limited evaluation of user and provider acceptance and satisfaction. Research on the effects, if any, of telehealth on communicative behaviours

Feedback from the survey, key informant interviews, and limited information from the telehealth literature indicated that the quality of communication in a telehealth setting can often be enhanced, compared to the traditional face-to-face encounter, if the health professional is appropriately oriented to the technical environment and the clinical application is conducive to the telehealth setting.

between the telehealth professional and patient/client remains virtually unexplored. In contrast, results from the survey indicated that the organizations involved in the delivery of telehealth services are usually engaged in telehealth communication evaluation. Respondents reported that feedback on communication is routinely collected through written and verbal feedback by both the patient/client and the referring and/or consulting health care provider.

Quality of Telehealth Communication

The environmental scan indicated that the quality of communication in the telehealth setting is largely dependent on the comfort level of the telehealth professional with the technical environment; the general communication ability of the health care professional; and the appropriateness of the clinical application to the telehealth setting. It should be noted that there is a natural variation in communication skills among health professionals regardless of whether the interaction is face-to-face or by telehealth.

Feedback from the survey, key informant interviews, and limited information from the telehealth literature indicated that the quality of communication in a telehealth setting can often be enhanced, compared to the traditional face-to-face encounter, if the health professional is appropriately oriented to the technical environment and the clinical application is conducive to the telehealth setting. The reasons cited include: less distractions in the telehealth setting; greater effort by professional to ensure the quality and thoroughness of communication due to the “nature” of the consultation; and greater exchange of information due to the presence of other health care providers.

The environmental scan highlighted skills and competencies required of the telehealth professional to facilitate effective communication, which included:

- superior listening skills;
- empathy;
- understanding of appropriate video/telephone behaviours including:
 - videoconferencing: allowing for time delay to avoid interrupting the patient/client when they are speaking, and understanding the importance of eye contact, lighting, camera angles and zooming of lens to frame the participants
 - telephone consultations: allowing time to respond, validating understanding, subsequent questioning if information seems inconsistent, and informing the patient/client when consulting guidelines;
- comfort and familiarity with the technology system and technical environment;
- understanding of the “operational” process that occurs in a telehealth encounter, including procedures for informed consent, confidentiality, and documentation; and
- understanding of the clinical limitations of the technology and alternatives to accommodate care, when required.

Communication Training Programs

There was little agreement regarding the need for a communication training program that specifically addressed communicative behaviours in the telehealth setting.

Recommendations ranged from the need for a formal communication training program, to a basic orientation, to not addressing communication issues at all. There was, however, a general consensus that the health care professional-patient/client communication in the telehealth setting is altered, compared to the traditional face-to-face encounter. Opinions regarding the need for a program addressing communication appear to be influenced by the telehealth field in which the health care provider is engaged.

The environmental scan consistently indicated that further research and evaluation of the nature and content of the communication process is needed in order to have a better understanding of the interpersonal dynamics associated with telehealth and its effects on health-care outcomes.

What needs to be considered:

- A telehealth encounter somewhat alters the health professional-patient/client communication, compared to the “gold standard” face-to-face encounter.
- The degree to which “specialized” communication skills are required is influenced by the telehealth clinical application and should be developed and implemented based on the needs of the specific discipline.
- Further research of the nature and content of the communication process is necessary.

Guiding Principles:

- Steps shall be taken to ensure quality of communication during a telehealth encounter is maximized.

Suggested Guidelines:

- CSO-2 Health professionals providing telehealth services are familiar with appropriate video/telephone behaviours as well as the technology and are able to multi-task (i.e., use equipment and stay focused on the patient/client). Issues such as being aware of and accommodating the limitations of video/audio and providing service from a distance are fully appreciated.
- CSO-3 Organizations providing telehealth services provide education/orientation in telehealth communication skills to health professionals prior to their initial telehealth encounter.
- CSO-4 Health professionals determine to the best of their ability each patient/client's appropriateness for, and level of comfort with, telehealth prior to the first encounter.
- CSO-5 Organizations and health professionals providing telehealth services provide patients/clients with education/orientation to the telehealth process and communication issues prior to their initial telehealth encounter.

Recommendations:

It is recommended that:

- The “core” competencies required for effective telehealth communication should be identified.
- Further research and evaluation of the nature and content of the communication process in telehealth be undertaken to have a better understanding of the interpersonal dynamics associated with telehealth and its effects on health-care outcomes.
- Organizations providing telehealth services include evaluation of the effectiveness of telehealth communications in their quality improvement activities.

3.3 Standards of Practice/Quality of Clinical Care

What we learned:

Our findings in this area are discussed in four topic areas: Standard of Care, Clinical Practice Guidelines, General Telehealth Guidelines and Telehealth Skills and Competencies.

Standard of Care

The “appropriate” or “reasonable” standard of care (considering context, location and timing) delivered via telehealth should be at least equivalent to the standard expected in traditional health care delivery, where such a comparator exists. If the “reasonable” standard of care cannot be met, the telehealth professional needs to address what is the alternative for care and decide if it is acceptable to proceed.

The lack of face-to-face contact raises the important question of whether the use of telehealth technology allows health care providers to meet the standard of care that exists for the traditional mode of health care delivery. Currently, there is little reference in the telehealth literature specifically addressing “appropriate” standard of care in the telehealth setting. Reference is made to the “reasonable practitioner standard,” which implies that the standard of care should not differ with the use of telehealth as compared to the traditional provision of health care services. This issue was further explored in the key informant interviews, revealing that the “appropriate” or “reasonable” standard of care (considering context, location and timing) delivered via telehealth should be at least equivalent to the standard expected in traditional health care delivery, where such a comparator exists. If the “reasonable” standard of care cannot be met, the telehealth professional needs to address what is the alternative for care and decide if it is acceptable to proceed.

Clinical Practice Guidelines

The purpose of clinical practice guidelines is to promote “best practice” and improve the consistency and efficiency of health care delivery, resulting in improved patient/client health outcomes. The telehealth literature and the results of the stakeholder survey both reveal a diversity of opinion regarding whether there should be establishment of clinical practice guidelines specific to telehealth. This was further reflected by the fact that there was an almost equal division of surveyed organizations who had guidelines specific to telehealth and those who did not.

The issue of telehealth practice guidelines was further explored in the key informant interviews, where it became evident that the degree of modification required to existing clinical practice guidelines was largely related to the telehealth specialty and clinical application. Applying existing clinical practice guidelines to the telehealth application would highlight the gaps in the guidelines and could provide direction regarding necessary changes to suit the telehealth setting.

Regarding nursing teletriage, the environmental scan consistently indicated a need for specific telehealth clinical practice guidelines in this area. Because the medium in which teletriage nurses work provides obvious limitations compared to the traditional delivery of health care, guidelines aid in standardization of practice. It is noteworthy that the majority of surveyed organizations involved in nursing teletriage indicated they have protocols to guide the process of care.

General Telehealth Guidelines

The environmental scan consistently indicated that although there is diversity of opinion regarding the need for telehealth-specific clinical practice guidelines (with the exception of nursing teletriage, poison control, and ambulance dispatch), there is consensus that general telehealth guidelines are needed addressing protocols and procedures related to: informed consent; privacy and confidentiality; documentation; ownership of patient/client record; and appropriate video/telephone behaviours. It was also noted that general telehealth guidelines should be developed and implemented in a “systematic approach” enabling national coordination and local ownership.

Telehealth Skills and Competencies

The environmental scan indicated that the basic skills and competencies needed to practice in the clinical telehealth environment include: the required skills expected in the health professional's field of practice; an understanding of the scope of service being provided; orientation to the technology system and environment; and an understanding of the operational protocols and procedures. The degree of training required is partly dependent on the telehealth clinical application. For example, to work in the field of nursing teletriage, a formal training program is generally required that would include a thorough

orientation on the system and technology, usage of standardized protocols and clinical guidelines, methods of effective communication, etc. In other instances, a basic orientation by the person responsible for coordinating telehealth services may be all that is needed, while other telehealth applications may require a “team approach” with a minimum period of clinical practice in the appropriate telehealth specialty.

What needs to be considered:

- The “reasonable” standard of care, considering context, location and timing (including relative availability of traditional care), delivered via telehealth shall be at least equivalent to the standard expected in traditional health care delivery (i.e., provide opportunities for similar outcomes where a comparator exists).
- The degree of modification required to existing clinical practice guidelines appears to be largely related to the telehealth specialty and clinical application.
- General telehealth guidelines are needed for several specific issues.

Guiding Principles:

- The “reasonable” standard of care, considering context, location and timing (including relative availability of traditional care), delivered via telehealth shall be at least equivalent to the standard expected in traditional health care delivery (i.e., provide opportunities for similar outcomes where a comparator exists). If a “reasonable” standard of care cannot be met, the telehealth professional needs to address what is the alternative for care and decide if it is acceptable to proceed.
- Health professionals providing telehealth services shall possess the basic skills and competencies required in clinical care delivery (adapted to suit the telehealth environment).
- Whenever possible, health professionals use existing clinical practice guidelines to guide the delivery of care in the telehealth setting, recognizing that certain modifications may need to be made to accommodate for such issues as the lack of ability to touch or directly examine a patient/client.

Suggested Guidelines:

- CSO-6 Prior to commencing telehealth services for a specific patient/client, the health professional must be satisfied that the standard of care delivered via telehealth is “reasonable” and at least equivalent to any other type of care that can be delivered to the patient/client, considering the specific context, location and timing, and relative availability of traditional care. If the “reasonable” standard cannot be satisfied via telehealth, the health professional should so inform the patient/client and suggest an alternative type of health care delivery/service (e.g., face-to-face encounter, emergency room visit, etc.).
- CSO-7 Health professionals use existing clinical practice guidelines, whenever possible, to guide the delivery of care in the telehealth setting, recognizing that certain modifications may need to be made to accommodate specific circumstances (e.g., the lack of ability to touch or directly examine a patient/client).
- CSO-8 As clinical practice guidelines are health discipline specific, any modifications for the telehealth setting are approved by the discipline's clinical governing body or association.
- CSO-9 Health professionals providing telehealth services follow protocols and procedures related to: informed consent (verbal, written, recorded); privacy and confidentiality; documentation; ownership of patient/client record; and appropriate video/telephone behaviours.
- CSO-10 Health professionals providing telehealth services possess the following: required skills expected in the professional's field of practice; competent communication skills; an understanding of the scope of service being provided via telehealth; orientation to and ability to navigate the technology system and environment; an understanding of the telehealth operational protocols and procedures; and an understanding of any limitations of the technology being used.

Recommendations:

It is recommended that:

- Each health profession examine how telehealth impacts and/or changes its nature, scope and pattern of service delivery and how this may require modifications of existing practice guidelines.
- National bodies disseminate prototype national general telehealth guidelines addressing protocols and procedures related to: informed consent; privacy and confidentiality; documentation; ownership of patient/client record; and appropriate video/telephone behaviours. These general telehealth guidelines be developed and implemented in a “systematic approach” enabling national coordination and local ownership.

3.4 Clinical Outcomes

What we learned:

Our findings in this area are discussed in two topic areas: Telehealth Clinical Outcome Evaluation and Telehealth Clinical Outcome Indicators.

Telehealth Clinical Outcome Evaluation

In this era of evidence-based medicine, interest in comprehensive evaluation of clinical practice and health care outcomes is increasing. The telehealth literature indicates that there is little comprehensive evaluation being applied to telehealth applications, particularly in the area of clinical outcomes and cost-effectiveness. This was reflected in the stakeholder survey results, where less than a quarter of the organizations collected clinical and cost-analysis data. Reasons cited for the lack of evaluation included: lack of financial and human resources; difficulty in defining the evaluation question; and the challenges of identifying and collecting meaningful data.

Telehealth Clinical Outcome Indicators

It is well recognized that telehealth systems require assessment and ongoing collection and analysis of relevant data to promote and support the sustainability of telehealth programs. The environmental scan revealed that the identification and measurement of meaningful indicators will be partially dependent on the telehealth service being evaluated. General categories would include evaluation of clinical effectiveness and efficiency of telehealth service. Examples of indicators measuring clinical effectiveness include: diagnostic accuracy; validation of diagnostics; appropriate health care intervention; patient/client safety and risks; and patient/client acceptability. Indicators measuring “efficiency” of telehealth services may include: timeliness of health care intervention; elimination of patient/client transfer/travel; increased access to care; reduction of outpatient visits; and cost-effectiveness. Scott McCarthy, et al. (2003) recently published a comprehensive document summarizing the telehealth outcomes literature.

The environmental scan revealed that the identification and measurement of meaningful indicators will be partially dependent on the telehealth service being evaluated. General categories would include evaluation of clinical effectiveness and efficiency of telehealth service.

The environmental scan also consistently indicated a need for additional financial and human resources to facilitate the comprehensive evaluation of clinical practice and health care outcomes in the telehealth setting.

What needs to be considered:

- As with any other health service, organizations providing telehealth services require ongoing collection and analysis of relevant outcome data.
- Identification of meaningful indicators should be based on the specific evaluation question and the telehealth service being assessed.
- There is a need for additional financial and human resources to facilitate the comprehensive evaluation of clinical practice and health care outcomes in the telehealth setting.

Guiding Principles:

- Organizations providing telehealth programs shall monitor and improve the quality of services to achieve the best possible outcomes.

Suggested Guidelines:

CSO-11 Organizations providing telehealth programs have in place a systematic method of collecting, evaluating and reporting meaningful health care outcome data which would include indicators of efficiency of service (e.g., cost per case, timeliness, accessibility, elimination of patient/client transfer/travel, and waiting time) and clinical effectiveness (e.g., diagnostic accuracy, validation of diagnostics, appropriateness of service delivered, information provided, referrals made, patient/client safety, patient/client satisfaction, acceptability, and reviews of complications, morbidity and poor outcomes). Organizations receiving telehealth services should be consulted on appropriate outcome indicators.

Recommendations:

It is recommended that:

- Funding be made available to facilitate the comprehensive evaluation of clinical practice and health care outcomes in the telehealth setting.
- Research organizations, researchers and professional organizations assist solo or small groups of practitioners in the collection, evaluation and reporting of health care outcome data for telehealth.

3.5 Patient/Client Confidentiality

What we learned:

In telehealth, as in traditional delivery of health care, a duty of confidentiality is owed to the patient/client. However, according to the environmental scan, maintenance of confidentiality in the telehealth setting poses more challenges than in the usual health care environment. There are aspects of telehealth that pose risks not normally present in the delivery of health services. Because of the unique combination of patient/client data, video imaging, recording, and electronic clinical information generated between two or more sites during a telehealth encounter, coupled with an increased number of individuals involved in patient/client care, privacy concerns may be magnified within the telehealth arena.

According to the environmental scan, maintenance of confidentiality in the telehealth setting poses more challenges than in the usual health care environment.

The environmental scan indicated that telehealth programs must develop and implement policies and procedures that ensure the privacy and confidentiality of the health professional-patient/client interaction. This would include telehealth specific confidentiality guidelines addressing technology security issues (see Section 7.3), and “site” operational concerns such as:

- room set-up and security;
- telehealth session protocol;
- access to room and patient/client medical records;
- procedure for recording sessions; and
- employee confidentiality agreements.

Potential risks for a breach in confidentiality may vary depending on the specific telehealth application.

The need for the establishment of a more formal process to examine and identify the privacy and confidentiality issues that uniquely arise out of telehealth practice was also noted in the environmental scan. Note: Organizational responsibilities in terms of confidentiality are discussed in Section 6.2.2.

What needs to be considered:

- In organizations providing telehealth programs, as with any other health service program, a duty of confidentiality and respect is owed to the patient/client.
- Maintenance of confidentiality in the telehealth setting poses more challenges than in the usual health care environment.
- Confidentiality guidelines may need to be modified to suit the potential risks for breach of confidentiality unique to the telehealth application.

Guiding Principles:

- The confidentiality of patient/client information shall be protected.

Suggested Guidelines:

CSO-12 Organizations and health professionals providing telehealth services are aware of, and ensure compliance with, relevant legislation and regulations designed to protect the confidentiality of patient/client information. Organizations and health professionals are encouraged to consult with legal counsel and relevant professional licensing/regulatory bodies when determining confidentiality policy.

CSO-13 Organizations providing telehealth services have confidentiality guidelines that may include:

- site security;
- maintenance of store and forward records, including photographs and videotapes;
- employee confidentiality agreements for support/teaching staff associated with the telehealth encounter;
- technical security of the technology being used (see TE-5);
- sound-proofing of rooms/headsets;
- establishment of security and ownership of patient/client record;
- informing the patient/client of the name, organization/location and type of health professional they are speaking to, as well as all other individuals party to the encounter; and
- securing patient/client's consent to obtain, use, disclose and transmit information (e.g., permission to fax/send information to hospital or family physician).

Recommendations:

No material available for this section.

3.6 Informed Consent

What we learned:

No one would argue that informed consent is one of the foundations of ethical health care today. However, the issue of consent and how it applies to telehealth is a highly controversial area, as reflected in the results of the environmental scan. Opinions on whether expressed consent is required in the telehealth setting are influenced by whether telehealth is considered simply a “tool” for the provision of health care or a “distinct method” for the delivery of health care.

Specific to the telehealth video-consultation, there was no consensus regarding whether consent is implied, similar to an office visit, or if expressed consent should be obtained. Respondents who indicated that consent should be implied held to the model that a telehealth video-consultation is the same as a face-to-face encounter. From this perspective, telehealth is considered “a tool” for health care delivery and since legal and regulatory/licensing references indicate that consent is specific to treatment, expressed consent is not required. Those who specified that expressed consent should be required, commented that until telehealth is viewed as “routine service,” informed expressed consent should be obtained for all telehealth encounters, an opinion that is shared by the legal community.

The survey results clearly illustrate the diversity of opinions regarding the need for expressed consent. Approximately half of the respondents indicated the need for consent in all circumstances, while approximately 25% indicated that consent was either required under “certain conditions,” or implied. Of those who felt expressed consent was required, written format, as opposed to verbal, was considered most appropriate.

The issue of consent was further explored in the key informant interviews. The results indicated that the debate regarding the need for expressed consent was centred on the “routine” telehealth video-consultation. There was general consensus that expressed consent should be obtained for specific circumstances including: videotaping or recording session, patient/client photography, use of data for research or evaluation purposes, sharing of information to outside sources, etc. (circumstances that would normally require consent in the traditional health care setting). Written consent, obtained by the person responsible for coordinating telehealth services, was considered most appropriate for these circumstances.

Specific to nursing teletriage, or other agencies providing advice over the telephone, consent is considered implied; however, it should be based on informed choice that includes:

- providing the patient/client with information such as: the name, profession and organization/location of the consulting health professional;
- how information will be recorded and stored;
- who has access to information;
- who is present during the interaction; and
- alternative methods of care available, where applicable.

Although the issues of consent and when it is required in the telehealth setting remains controversial, there was general consensus that there is a need to provide information to the patient/client regarding the telehealth process in order for the patient/client to feel more comfortable in the telehealth setting (see CSO-15). (Organizational responsibilities in terms of consent are discussed in Section 6.2.2).

What needs to be considered:

- When providing telehealth services, as with any other health service program, current provincial/territorial legislation or regulations that relate to client decision-making and consent should be applied.
- There is a need for national consensus on the consent process in telehealth that would lay the foundation and provide consistency, especially for cross-jurisdictional telehealth.

Guiding Principles:

- Relevant legislation and regulations that relate to client decision-making and consent shall be applied.
- Whenever possible, informed consent shall be obtained by the health professional before starting any service or intervention. Exceptions to this may include the provision of emergency care and the need to satisfy mandatory reporting requirements in specific situations (i.e., suspected child abuse, etc.).
- Consent for telehealth should follow similar principles and processes as those used for other health services.

Suggested Guidelines:

- CSO-14 Organizations and health professionals providing telehealth services are aware of, and ensure compliance with, relevant legislation or regulations that relate to patient/client decision-making and consent. Organizations and health professionals are encouraged to consult with legal counsel and relevant professional licensing/regulatory bodies when determining consent policy.
- CSO-15 Telehealth encounters are preceded by a communication to the patient/client that includes information regarding:
- the name, profession and organization/location of the health professional;
 - who is participating in the encounter;
 - the process of such an encounter;
 - how the technologies work and what is involved in any specific application (where applicable);
 - potential risks and benefits;
 - the choice to decline participation and alternatives available;
 - contingency plans should technology fail or be insufficient for clinical diagnosis/management (where applicable);
 - how care will be documented;
 - security, privacy, and confidentiality of information;
 - who is responsible for ongoing care; and
 - the right to withdraw consent at any time.
- CSO-16 Written informed consent is obtained prior to specific telehealth encounters, as required by applicable legislation and regulations, such as: robotic or invasive treatment, videotaping and/or recording of the encounter, use of information for promotional/media events, patient/client photography, and other medical acts that would normally require written consent in the traditional health care setting.
- CSO-17 The consent process is integrated with existing consent processes/documentation.

Recommendations:

It is recommended that:

- Organizations providing telehealth services continue to engage risk management teams and legal counsel in the process of determining appropriate consent policy.
- A process be put in place to develop national consensus on the consent process in telehealth that would lay the foundation and provide consistency, especially for cross-jurisdictional telehealth.



Chapter 4

Human Resources

This chapter focuses on topics related to human resources: Human Resource Plans and Policies; Roles and Responsibilities; Licensure and Related Issues; Competency and Qualifications; Education, Orientation and Training; and Reimbursement. It will be of particular interest to health administrators, health professionals, professional regulatory/licensing bodies, governments, academic institutions, researchers, and standard-setting bodies. The **What we learned** sections of this chapter are based primarily on the work of Hogenbirk, Byrne, Pong and Liboiron-Grenier (2003).

4.1 Human Resource Plans and Policies

What we learned:

The majority of key informants thought that the human resource plans and policies needed to be modified to more fully reflect the unique aspects of telehealth.³ This was also borne out by results from the questionnaire in which the majority of survey respondents (60%) reported that their organizations did not have telehealth-specific components in a human resources plan (less than half of the 60% did not even have a human resource plan). The full integration of telehealth into the human resource plan would be time-consuming and potentially expensive.

What needs to be considered:

- As with other health service programs, consideration of human resource requirements and development of a human resource plan and policies should be part of the initial development and ongoing management of telehealth programs.
- An annual review/revision of human resource plans and policies related to telehealth should be considered due to the evolving nature of the telehealth field.

Guiding Principles:

- Consideration of human resource requirements and development of a human resource plan and policies shall be part of the initial development and ongoing management of telehealth programs.

Suggested Guidelines:

- HR-1 Organizations providing telehealth services have a human resource plan to ensure the right supply and mix of appropriately-trained staff, based on the needs of the program.
- HR-2 Telehealth-specific policies are integrated into existing human resource policies and new policies for telehealth should be created only when absolutely necessary.

Recommendations:

It is recommended that:

- Organizations providing telehealth in addition to other services:
 - identify and update existing human resource policies requiring revision to accommodate telehealth concerns related to patient/client safety and quality of health care delivery;
 - create new human resource policies that are needed for the safe provision of quality telehealth services; and
 - consider telehealth services during the next scheduled revision/update of the human resource plan or policy for all remaining (less urgent) telehealth human resource concerns.
- The ramifications of telehealth on the overall health work force be monitored.

4.2 Roles and Responsibilities

What we learned:

Our findings indicated that, when telehealth is first introduced in health care organizations such as hospitals, personnel are re-assigned from other departments. Typically, the telehealth duties and workload are added on to existing duties. This finding was common to the literature, the questionnaire and interviews. As the number of telehealth events

³ Most of these telehealth-specific HR components or HR components requiring some modification to properly address the concerns of telehealth are described in the following sections.

increase, so does the need for a full-time position to coordinate activities. It is often at the level of the coordinator that telehealth-specific position descriptions are needed. This is reflected in the consensus of survey respondents and key informants that the need for telehealth-specific position descriptions increased with the amount of time spent by an individual on telehealth activities, modified only by the historic independence of the health care professional. For instance, position descriptions were considered to be essential for telehealth coordinators and less essential for physicians. As a minimum, key informants thought that descriptions should exist for telehealth-specific duties.

A view espoused in the literature and by survey respondents and key informants was that telehealth-specific position descriptions were needed to define roles and responsibilities to prevent unnecessary duplication of services without losing the safeguards needed to ensure quality of service.

Some of the requests for role or position descriptions were due to the need to identify and allocate scarce human resources. This suggested that the real needs of telehealth programs would not be fully appreciated by human resource managers and other senior administrators without formal recognition. Anderson (2001) reported similar findings in her review of continuing education via telehealth. The other need for role or position descriptions was grounded in the desire to provide a safe and high quality level of care. A view espoused in the literature and by survey respondents and key informants was that telehealth-specific position descriptions were also needed to define roles and responsibilities to prevent unnecessary duplication of services without losing the safeguards needed to ensure quality of service. For example, the literature suggests that telehealth personnel may spend a lot of time checking and rechecking scheduling details because they are unsure of what has been completed by other staff members. This may be exacerbated when dealing with different sites and other organizations.

What needs to be considered:

- Telehealth programs, like any other health service delivery program, need to have position descriptions that clearly define roles and responsibilities.
- The diversity of telehealth programs and their unique role in each organization require comprehensive, yet flexible, position descriptions.
- At present a common description of telehealth duties that can be shared among telehealth organizations as a baseline description of telehealth-specific roles and responsibilities does not exist.

Guiding Principles:

- Roles and responsibilities of personnel working in telehealth shall be clearly defined.

Suggested Guidelines:

- HR-3 Organizations providing telehealth services have position descriptions that clearly articulate the roles and responsibilities of personnel engaged in telehealth activities.
- HR-4 Organizations providing telehealth services have a position description that acknowledges the diverse and central role of the person responsible for coordinating the telehealth service.
- HR-5 Position descriptions for personnel engaged in telehealth activities are reviewed regularly because of change in this area.
- HR-6 Organizations providing telehealth services evaluate staff performance in carrying out telehealth duties and must reflect these observations in the formal performance evaluations. Organizations expecting employees to provide telehealth services in addition to other services must include telehealth-specific components in the formal performance evaluations.

Recommendations:

It is recommended that:

- A national body develop a common description of telehealth duties that can be shared among telehealth organizations as a baseline description of telehealth-specific roles and responsibilities.

4.3 Licensure and Related Issues

What we learned:

Licensure is one of the unresolved issues of great importance to the future of telehealth. There are two main licensure issues: cross-jurisdictional licensure and telehealth-specific licensure. Cross-jurisdictional licensure is an issue when licensed and regulated health care professionals seek to practice in other jurisdictions. The telehealth-specific licensure issue occurs when a fully-licensed health care professional requires a special license or permit to practice telehealth in his/her own jurisdiction.

Theoretically, there are three basic cross-jurisdictional licensure options: full licensure only in the health care professional's jurisdiction, full licensure only in the patient/client's jurisdiction, or full licensure in one jurisdiction (typically in the professional's jurisdiction) with full/partial licensure in the second jurisdiction. Full licensure in the patient/client's jurisdiction only would mean that the professional is unlicensed in their own jurisdiction. This seems fraught with legal, ethical and safety issues and thus unlikely. At a minimum, it seems that the professional should be licensed in his/her own jurisdiction and legal/liability concerns may require some arrangement with the patient/client's jurisdiction. There are a number of variations on this theme such as a national license, special license, mutual recognition and endorsement. The pros and cons of these approaches to licensure are discussed in Pong and Hogenbirk (1999).

Several key informants expressed a preference for a "national system" to deal with the issues of certification, credentialing and privileging in a similar manner. These key informants noted that several health care professions already have nation-wide exams, and that standards of practice do not differ greatly across Canada. A review of the available literature supports this view, albeit with some caveats. A pan-Canadian mechanism or approach based on mutual recognition or special license that was accepted and administered by the individual professional regulatory/licensing bodies in each jurisdiction would go a long way toward ensuring quality of care, consistency of service and integration of telehealth into the mainstream health care delivery system.

A common concern found in the literature and voiced by key informants was that international telehealth should be approached much more carefully, with formal agreements among nations, regulatory/licensing bodies and organizations, consent forms and legal waivers. It was emphasized that patients/clients, health care professionals and administrators need to be aware of fundamental differences in standard and quality of care among nations. Some key informants said that the health care professional bore the majority of the responsibility for ensuring that his or her advice to the patient/client was appropriate to the situation and circumstances in the patient/client's country.

A special telehealth permit might help resolve the cross-jurisdictional licensure issue, though the counter-argument is that it is unnecessary for clinical purposes and potentially restrictive for telehealth practice. It seems likely that if a special telehealth permit is required for cross-jurisdictional telehealth, it would need to be required for telehealth activities within the jurisdiction.

A pan-Canadian mechanism or approach based on mutual recognition or special license that was accepted and administered by the individual professional regulatory/licensing bodies in each jurisdiction would go a long way toward ensuring quality of care, consistency of service and integration of telehealth into the mainstream health care delivery system.

Findings from the literature, questionnaire and interviews all suggested the issue of liability was an ongoing concern. The general consensus was that firming up policy and specifying licensure requirements would go a long way towards ensuring quality of service to patients/clients and would have the additional effect of resolving or avoiding many of the liability issues.

One issue related to licensure, specific to telemedicine, is “credentialing” or “privileging” by a health organization. Credentialing/privileging in this context refers to the institutional policies and procedures that determine whether a health care professional has the qualifications to be employed or granted privilege to practice in a particular institution (Pong and Hogenbirk, 1999). According to Pong and Hogenbirk (1999), a yet-to-be resolved issue is whether a telehealth provider is required to be credentialed/granted privileges at both the telehealth provider organization and the remote institution that has requested the consultation service.

What needs to be considered:

- In telehealth programs, as in any health service delivery program, health professionals must be fully licensed and registered with the respective regulatory/licensing body. It should be noted that at the present time the locus of responsibility for health professionals providing telehealth services may be in the patient/client’s jurisdiction or the health professional’s jurisdiction. Individual health professionals need to be aware of any/all requirements that apply. The respective professional licensing/regulatory body should be contacted for details.
- The issue of cross- jurisdictional licensure is one that requires further study and discussion. Success in resolving this issue requires the cooperation and support of regulatory/licensing bodies, professional organizations and federal/provincial/territorial governments. Some changes to existing legislation and/or government policy may be required.
- Presently, health professionals providing telehealth services may obtain licenses in multiple jurisdictions, but this approach is considered burdensome and other strategies need to be considered.
- Legislation that provides clear jurisdiction to regulate the provision of health services across international borders is required to ensure accountability.

Guiding Principles:

- Patient/client safety and quality of service shall be the guiding principles for any cross-jurisdictional licensure.

Suggested Guidelines:

- HR-7 Health professionals providing telehealth services shall be fully licensed and registered with the respective regulatory/licensing body. It should be noted that at the present time the locus of responsibility for health professionals providing telehealth may be in the patient/client’s jurisdiction or the health professional’s jurisdiction. The respective professional licensing /regulatory body should be contacted for details.
- HR-8 Health professionals shall be aware of their locus of accountability and any/all requirements (including those for liability insurance) that apply when practicing telehealth in another jurisdiction. It should be noted that for some professions scope of practice may vary between jurisdictions. The respective professional licensing /regulatory body should be contacted for details.

Recommendations:

It is recommended that:

- Until the issue of cross-jurisdictional licensure is resolved the following strategies are suggested:
 - regulatory/licensing bodies in individual jurisdictions in Canada enter into bi-jurisdictional or multi-jurisdictional agreements to permit the provision and/or receipt of telehealth services; and
 - professional regulatory/licensing bodies consider utilizing temporary licensure mechanisms for health professionals providing telehealth services, where available and applicable.
- A process be established to explore the feasibility of a pan-Canadian accommodation mechanism or approach to facilitate cross-jurisdictional licensure that is acceptable to, and administered by, the individual health professional regulatory/licensing bodies in each jurisdiction.
- Any new licensure requirements relating to telehealth should not be considered in isolation of current standards or practice and should be implemented after consultation with health professionals practicing in both traditional and telehealth environments.
- Privileging should be guided by the same principles and resolved in a similar manner to licensure.
- When services become international in scope, federal and provincial governments/Ministries of Health must work with complimentary international authorities to negotiate necessary international agreements to support regulatory processes important for public protection and accountability (see Section 6.2.6).

4.4 Competency and Qualifications

What we learned:

Entry-level education for many health professionals typically has little or no telehealth-specific component. Thus most telehealth services do not require any telehealth-specific qualifications before personnel are hired or reassigned to telehealth duties. All telehealth services contacted provided orientation and on-the-job training. Currently, all telehealth services require that health care professionals be fully licensed and registered with their respective regulatory/licensing body and that technical staff have the appropriate education or training from a credible university/college/technical school. It is clear that none of these requirements are specific to telehealth.

In addition to professional licensure, telehealth services look for individuals with personal characteristics that will facilitate the individual's involvement and advance the telehealth program. These personal characteristics include a positive attitude and open-mindedness towards technology and good people skills. Some of these required characteristics are common to many new programs, particularly those involving new technology. The combination and emphasis of these personal attributes, however, may be unique to telehealth. A list of knowledge, skills and attitudes for telehealth personnel compiled during the environmental scan are found in Table 4.1.

Clinical competence is the responsibility of the individual health professional (see also Section 3.3). Telehealth personnel are expected to work within their normal scope of practice. Standards for clinical competency are typically set by regulatory bodies as part of their mandate to protect the public. The organization providing telehealth services has a supervisory/accountability responsibility to ensure staff are competent.

What needs to be considered:

- In telehealth services, as in any health service, health professionals must be fully licensed and registered with their respective regulatory/licensing body (see Section 4.3).
- Technical staff should have the appropriate education or training from a credible university/college/technical school (see Section 4.3).
- A minimum set of qualifications and competencies specific to telehealth for health professionals does not presently exist.

Table 4.1 Knowledge, Skills and Attitudes for Telehealth Personnel**Knowledge**

- Demonstrated professional competency
 - Clinical or technical, as appropriate
- Demonstrated understanding of policies, procedures and protocols relevant to assigned telehealth duties, including:
 - Ethical and legal issues
 - Consent, privacy, confidentiality, security
 - Licensure
 - Limitations of technology
 - Documentation
 - Registration, admission, scheduling, follow-up
 - Accountability/responsibility
- Demonstrated knowledge (as applicable)
 - Technology (hardware and software)
 - Health care /medical devices
 - Telecommunications technology
 - Health information technology
 - Electronic health records
 - Image technology and transmission

Skills

- Clinical skills (as per professional standards)
- Technical skills (basic)
 - Basic computer skills
 - Equipment set-up and operation
 - Trouble-shooting
 - Recognizing how technical quality impacts quality of care
 - Recognizing how the type of equipment can affect ethical and legal concerns
 - What to do if technology fails
 - Environment (lighting, sounds, distractions)
- Sessional skills
 - Dealing with clinicians, patients, support staff and administrators
 - How to communicate over an A-V link
 - Communication skills
- Management
 - Time management
 - Change management
 - People management
 - Risk management
 - Quality management
 - Project management
- Technical skills (advanced), if applicable
 - Maintenance and repair (correction) of equipment
 - Demonstrated innovative solutions/improvements to operating system and equipment

Attitudes

- Demonstrated comfort and competence during telehealth sessions
- Actively seeks opportunities to use telehealth
- Demonstrates the integration of telehealth into the health care system
- Actively promotes telehealth to clinicians, administrators, staff, patients and the public
- Recognizes and acts upon the changes to the health care system brought about by telehealth and by the broader impact of e-health (e.g., patient health records, health information on the internet)
- Demonstrates cultural awareness and sensitivity

(Adapted, Hogenbirk, Byrne, Pong and Liboiron-Grenier, 2003)

Guiding Principles:

- Health professionals providing telehealth services shall be fully licensed and registered with their respective regulatory/licensing body (see Section 4.3).
- Technical staff shall have appropriate education or training from a credible university/college/technical school necessary to practice in their field.

Suggested Guidelines:

- HR-9 Organizations providing telehealth services have policies and procedures to ensure that staff have the necessary qualifications and competencies.
- HR-10 Organizations providing telehealth services provide orientation and on-the-job training to ensure staff have the necessary competencies (see HR-12).
- HR-11 Health professionals providing telehealth services ensure they have the necessary competencies to perform their work, including understanding any limitations of the technology they are using, and the ability to multitask.

Recommendations:

It is recommended that:

- Each health profession individually explore the need for and feasibility of a pan-Canadian set of qualifications and competencies specific to telehealth for their profession.
- A national body explore the development of a minimum set of qualifications and competencies for persons responsible for coordinating telehealth programs (i.e. telehealth coordinators).

4.5 Education, Orientation and Training

What we learned:

There is little, if any, formal telehealth education except for a few degrees/diplomas offered by Canadian universities and colleges in telehealth-related areas such as health informatics. Certificate programs are perhaps becoming more common at Canadian universities and colleges and some examples include the certificate in nursing telepractice from Centennial College in Toronto, Ontario, the telehealth technician program offered by the Royal Ottawa Hospital and Novatech Computer Careers, and the telehealth/e-health research and training program at the University of Calgary. Much of the onus on education and training falls upon the telehealth service provider.

In-house training is initiated typically with an orientation session that provides an overview of the telehealth program and how it fits into the existing health care delivery service, followed by training tailored to the individual, their profession, and to their anticipated role. The training method is primarily hands-on and often includes case studies, mock and/or mentored sessions. These orientation and training sessions are becoming standardized within the telehealth network, but flexible enough to consider site-specific characteristics such as available personnel and equipment. NORTH Network's ABC Manual and Clinidata's Guidelines and Procedure Manual for teletriage nurses are two examples of a standardized approach to orientation and training. It is likely that examples can be found in most provinces/territories and telehealth networks.

Some of the orientation and training manuals are proprietary and all represent an investment in time and money. It is encouraging that there are initiatives to share the acquired wisdom, though not necessarily the materials and instruments used in the orientation/training process. The October 2002 Telehealth Coordinators Workshop, sponsored by the Education Committee, Canadian Society of Telehealth, is an excellent example of individuals immersed in telehealth activities who met to discuss common issues and share solutions. The telehealth coordinators discussed a number of items that would

be candidates for a list of common orientation/training issues. These include: 1) consent/privacy/confidentiality and other ethical issues; 2) registration, documentation and patient/client records; 3) roles and responsibilities; 4) telehealth awareness and evaluation; 5) licensure, credentialing and reimbursement; and 6) training methods (Canadian Society for Telehealth Education Committee, 2002).

What needs to be considered:

- In telehealth programs, as in any health service delivery program, staff should have the appropriate education and training from a credible university/college/technical school.
- In telehealth programs, as in any health service delivery program, staff should have orientation and on-the-job training, as required, to ensure they possess the necessary competencies.
- It seems reasonable that the required amount and type of formal education would vary with the health care profession and that the required amount and type of on-the-job training would vary with the nature of the telehealth service.
- Due to the evolving nature of the telehealth field, there is a need for continuing education/professional development for telehealth staff.
- There are varying views on whether or not telehealth coordinators should be established as a new health care profession defined by core competencies and skills.

Guiding Principles:

- Health professionals providing telehealth services shall possess the necessary education, training and competencies (as defined by their respective regulatory/licensing body) for the safe provision of quality health services.

Suggested Guidelines:

- HR-12 Health professionals providing telehealth services have the necessary education, training/orientation and ongoing continuing education/professional development to ensure they possess the necessary competencies for the safe provision of quality health services.
- HR-13 Organizations providing telehealth services link training and job performance evaluation and encourage feedback from personnel on telehealth training sessions (e.g., comfort level during the session and in the use of equipment).

Recommendations:

It is recommended that:

- Organizations offering telehealth services be encouraged to exchange materials related to telehealth orientation and training.
- A national body summarize the key elements of a telehealth orientation and training process as a resource. An initial listing of orientation and training elements could build on those elements compiled during the NIFTE environmental scan and listed in Table 4.1. The report on the National Telehealth Coordinators Workshop 2002 (Canadian Society for Telehealth Education Committee, 2002) would also be helpful in this activity.
- Consideration be given to evolving in-house orientation and on-the-job training elements into national, standardized, certificate-level training opportunities.
- Professional organizations explore the need for development of telehealth-related orientation and training specific to their professions.

- Professional organizations explore the need to move some orientation and training elements into the core curriculum of health care professionals; elements such as increased exposure to computers, telecommunications technology, electronic health records and virtual patients/clients. Individual professional organizations consider working collaboratively with other professional groups on overlapping issues related to telehealth training and orientation.

4.6 Reimbursement

What we learned:

The environmental scan findings indicate that there are mixed funding mechanisms in place with respect to remuneration of health professions for telehealth services.

A review of the literature and survey responses revealed that all provinces and territories in Canada, except Ontario, have some form of plan for reimbursement of physicians providing telehealth services. Coverage, however, is not complete or consistent across the country. The restrictions placed on fee-for-service reimbursement of physicians for telehealth services in some jurisdictions are believed to inhibit the uptake and integration of telehealth into the health care system. From a human resources perspective, restrictions on fee-for-service reimbursement affect the recruitment and retention of physicians into telehealth practice.

Generally, reimbursement is not a problem for those health professionals who are paid as salaried employees in organizations providing telehealth services. However, the recruitment and retention of the salaried health care professionals may be hindered by the transitory nature of funding for a telehealth program that is not fully integrated into the existing health care delivery system. Adding telehealth duties on top of existing duties of salaried/waged employees, without a concomitant increase in pay, may hinder retention.

It should be noted there are a number of health professionals providing telehealth services that are not publicly funded (e.g., psychologists, pharmacists) and are paid on a fee-for-service bases. While this situation is not unique to telehealth, it may prevent certain professional groups from participating in telehealth services and networks. The key informants felt that the development of policies to address reimbursement for health professionals paid on a fee-for-service basis is not an organizational level issue and needs to be addressed at the provincial/territorial level.

What needs to be considered:

- The transitory nature of funding for a telehealth program that is not fully integrated into the existing health care delivery system, and adding telehealth duties on top of existing duties of salaried/waged employees without a concomitant increase in pay, may hinder the retention of health professionals in telehealth programs.
- The development of policies to address reimbursement for those health professionals paid on a fee-for-service basis is not an organizational level issue. These policies, guidelines, and procedures should be handled at the provincial/territorial level, but should be reflected in the organization's policy.

Guiding Principles:

- Personnel providing telehealth services shall be fairly compensated considering telehealth duties, roles and responsibilities, and whether these are in addition to existing duties, roles and responsibilities.

Suggested Guidelines:

- HR-14 Organizations providing telehealth services have policies and procedures that reflect provincial, territorial, and federal policy regarding reimbursement of health professionals.
- HR-15 Organizations offering telehealth services have strategies for retaining personnel that include reviewing compensation to ensure it is fair and equitable.

Recommendations:

It is recommended that:

- Federal/provincial/territorial jurisdictions be encouraged to resolve any outstanding reimbursement issues within their own jurisdictions.
- Compensation be considered for health professionals, whether they are publicly or privately funded, to participate in telehealth services and networks.



Chapter 5

Organizational Readiness

This chapter focuses on topics related to organizational readiness and will be of particular interest to organizations that are considering or have recently implemented a telehealth service. The **What we learned** sections of this chapter are based primarily on the work of Jennett and Yeo (2003). Overall, the survey findings and key informants responses supported the literature that stressed the importance of organizational readiness in ensuring the long-term success of telehealth services. Four components of organizational readiness discussed include: Planning Readiness; Workplace Environment Readiness; Technical Readiness; and Health System Readiness.

5.1 Planning Readiness

What we learned:

An important component of an organization's telehealth readiness is planning readiness.

Planning readiness includes:

- telehealth strategic plan;
- needs assessment and analysis;
- business plan;
- leadership readiness; and
- evaluation plan.

Telehealth Strategic Plan

Organizations should have a strategic plan under development or already in place. The telehealth strategic plan should include: a needs assessment and analysis; a business plan with a marketing plan addressing the appropriate audience (internal and external); a communication plan; implementation plan; and evaluation plan. A phased-in approach to implementing the telehealth strategic plan, with specific milestones and evaluation, was identified as important by key informants.

Needs Assessment and Analysis

A needs analysis was identified as an important factor in the successful implementation of telehealth and the majority (73.4%) of survey respondents reported that their health care organization or facility had conducted a needs assessment for its telehealth services. The survey respondents and key informants noted that a needs analysis is a critical component of a health care organization's telehealth readiness, and should include:

- an assessment of community readiness considering: what are the needs from the community perspective; what is the community's basic geographic location; what is the epidemiological data for the area; what resources are there; who are the health service providers in the community; and what is realistic and feasible; and
- an assessment of health service provider readiness that considers their needs as end users.

The rapidly changing status of telehealth services suggests that an ongoing approach to needs assessment should be in place. Organizational policies and/or guidelines need to be developed to reflect this unique aspect of telehealth.

Business Plan

A business plan is an important component of organizational telehealth readiness and the majority (82.7%) of survey respondents reported that their telehealth services were part of their organization's business plan, or were under development. These findings indicate that telehealth services are becoming recognized as a part of routine health care services. As such, the development of a business case would be a requirement. A telehealth business plan needs to take into account research and evaluation of telehealth as an innovation. Given the rapidly changing nature of telehealth, there is a need for the business plan to remain open to change and revision on a regular basis.

A marketing plan is usually a component of the business plan. The survey findings indicated that the marketing of telehealth services is in an evolving phase. Health care organizations are currently engaged primarily in internal marketing among health care providers within their institution or region, or to their partners, rather than to external audiences. However, there are some examples where telehealth services have been marketed to the general public (e.g., Telehealth Ontario).

Leadership Readiness

Leadership readiness refers to the need to have champions and informed, collaborative partnerships in place prior to beginning a telehealth service. The need for champions is an early observation based on telehealth projects and pilot activities. The survey findings indicated there appears to be a move away from single champions towards multiple advocates in senior positions within organizations or telehealth committees.

Different types and levels of champions and/or primary advocates are needed based on their “ability to influence.” Within the organization two types are needed; a clinical or provider champion, and a senior-level administrative champion. At the community level someone from within the community is needed to promote the benefits of telehealth. In organizations offering a variety of health services, senior management support is critical for the success and sustainability of telehealth services.

Collaborative partnerships are an important component of leadership readiness. They need to be in place before initiating telehealth services and should include a variety of partnerships with different groups. Collaborative partnerships demonstrate that an organization has the ability to partner. The type of partnerships developed depends on the scope and application of the telehealth services and these may need to be revisited over time.

Evaluation Plan

Organizations should have an evaluation plan in place. Key findings related to the evaluation plan are included in Section 6.3.

In summary, it was noted that the dynamics of the planning process or the order in which the steps in the planning process are conducted is very important. One key informant recommended the following order: 1) recruiting champions; 2) deciding on collaborative partnerships strategy; and 3) building a strategic business plan, starting with a needs analysis.

What needs to be considered:

- As in other health service programs, initial development of telehealth services should include careful up-front planning.

Guiding Principles:

- Planning readiness is an essential component of telehealth organizational readiness that is important for the implementation and ongoing sustainability of the service.

Suggested Guidelines:

- OR-1 Organizations providing telehealth services have a telehealth strategic plan that:
- involves all relevant stakeholders, both internal and external, in the development;
 - supports the corporate direction and reflects the priorities of the organization; and
 - is used to monitor progress in moving forward on the plan.
- OR-2 Organizations providing telehealth services have the following in place:
- needs assessment and analysis (including clinical, educational and administrative needs);
 - business plan;
 - marketing plan (internal and external);
 - communication plan (to ensure stakeholders are informed during development and implementation phases);

- training plan;
 - implementation plan; and
 - evaluation plan.
- OR-3 Organizations providing telehealth services have organizational telehealth policies and procedures that are based on the telehealth strategic plan.
- OR-4 Organizations providing telehealth services establish collaborative partnerships, with appropriate written agreements, based on the scope and application of the telehealth services offered.

Recommendations:

No material available for this section.

5.2 Workplace Environment Readiness

What we learned:

Another common theme arising from the literature review, survey questionnaire findings, and key informant interviews was the need for organizations to take into account the impact that implementation of telehealth services has on the workplace environment and work routines. The workplace environment should be ready to implement telehealth services.

The environmental scan indicated that the components of workplace environment readiness for telehealth included:

- awareness of legislation, professional and regulatory requirements;
- structural readiness;
- administrative support for telehealth;
- internal communication plan;
- change management readiness; and
- human resources readiness.

Awareness of Legislation, Professional and Regulatory/Licensing Requirements

A health care organization that is ready to use telehealth technology is aware of: 1) any legislation and professional regulations that may impact the delivery of telehealth services; 2) health information protection laws that mandate policies and procedures to protect the privacy and confidentiality of sensitive health information; and 3) professional regulatory/licensing organizations that require review of specific policies to determine telehealth coverage.

Structural Readiness

The workplace environment has to be ready for the telehealth technology and equipment. An organization with a structure, capacity, means and resources to implement telehealth is needed to accommodate all the coordination required to receive and respond to the requests for services. The workplace setting has to have telehealth equipment in locations where it is convenient for providers and where it can facilitate the use of the technology as a tool to deliver patient/client care.

Administrative Support for Telehealth

Support needs to be established for clinical decision-making, functioning and the process of using the telehealth system. These administrative support policies and procedures include: 1) mechanisms for the transfer of patients; 2) a standardized, well-defined, easy-to-use referral system; 3) a standard and consistent method of record keeping; and 4) a policy defining who has access to use telehealth.

Internal Communication Plan

There was a need recognized for open communication and keeping all stakeholders informed during the planning and implementation stages. This is critical in getting buy-in and support for the planned services, as well as in facilitating the change process. Since telehealth frequently involves communication among several organizations, there needs to be good working relationships. Communication facilitates team building.

Change Management Readiness

The introduction of telehealth services into an existing health service organization that offers a variety of health services is often disruptive and intrusive to the work environment. Organizational readiness also means that the organization's leadership understands the impact of providing telehealth services and that a change management plan should be in place.

Human Resources Readiness

Human resources readiness involves having adequate, qualified and dedicated staff to implement the strategic plan. Clarification of roles and responsibilities provides the required policies and procedures related to user characteristics, such as their specific training and specialty area. This clarification of roles and responsibilities needs to be done in relationship to the specific telehealth applications involved. Survey respondents and key informants stressed the importance of having a continuing professional development or training plan in place related to telehealth. An organization that is ready to use telehealth technology would have an education or learning plan in place for those individuals providing care via telehealth. The need for planning adequate training is particularly relevant among nurses in remote communities that lack technical support. Past telehealth experience gained from working with projects or pilot programs and their evaluation is an important component of organizational readiness.

What needs to be considered:

- As with other health service programs, consideration of the impact of telehealth services on the workplace environment and work routines should be part of the initial planning.

Guiding Principles:

- Workplace environment readiness is an essential component of telehealth organizational readiness and an important consideration for the implementation and ongoing sustainability of the service.

Suggested Guidelines:

- OR-5 Organizations providing telehealth services ensure that the workplace is “ready” for telehealth prior to implementation and that strategies are in place to address and support the components of workplace environment readiness including:
- being aware of legislation and professional and regulatory/licensing requirements that may impact on the delivery of telehealth services;
 - being structurally ready (i.e., physical environment facilitates the use of telehealth equipment and considers ergonomics);
 - having administrative support policies and procedures in place;
 - having effective communication processes in place that include raising awareness of telehealth and keeping all stakeholders informed during the planning and implementation stages;
 - having a change management plan in place to deal with the impact of implementing telehealth services.; and.
 - ensuring readiness of human resources (e.g., qualified staff, past experience with telehealth, adequate training and professional development programs [see HR-9, HR-10, HR-11, HR-12, HR-13]).

Recommendations:

No material available for this section.

5.3 Technical Readiness

What we learned:

Technical readiness was considered by survey respondents and key informants to be an essential component of organizational readiness, with respect to such things as network and local site technical readiness and interoperability, technical feasibility, bandwidth, verification of fidelity (accuracy) of data transmission, and procedures to ensure that technology/equipment are checked regularly.

The technology support aspect of telehealth equipment should also be taken into consideration. There is a need for simple, reliable, basic equipment rather than high performance, high maintenance equipment. There are special considerations related to maintaining equipment in remote communities that do not have easy access to technology support services.

What needs to be considered:

- As with other health service programs, consideration of the technical requirements and technical feasibility of providing telehealth services should be part of the initial planning.
- The technology support aspect of telehealth equipment should be taken into consideration.

Guiding Principles:

- Technical readiness is an essential component of telehealth organizational readiness and is an important consideration for the implementation and ongoing sustainability of the service.

Suggested Guidelines:

- OR-6 Organizations providing telehealth services ensure that the environment is “ready” for telehealth prior to implementation, and put strategies in place to address and support the components of technical readiness including:
- network and local site technical readiness and interoperability;
 - technical feasibility;
 - bandwidth;
 - verification of fidelity of data transmission;
 - procedures to ensure that technology/equipment are checked regularly;
 - and
 - availability of technical support.

Recommendation:

No material available for this section.

5.4 Health System Readiness

What we learned:

Health system readiness refers to the availability of policies, procedures, standards and guidelines in place at the federal/provincial/territorial levels regarding the required infrastructures, funding, remuneration, support for innovation and the diffusion process. This support is needed to manage change in the organizations. Health system readiness was explored in both the literature review and the key informant interviews. The findings indicated there appears to be a gap in terms of readiness of the health system to provide strategic support for telehealth as evidenced by the need for policies, procedures, standards and guidelines and at the federal/provincial/territorial levels.

What needs to be considered:

No material available for this section.

Guiding Principles:

- Health system readiness is important for the implementation and ongoing sustainability of telehealth services.
- The provision of telehealth services must be consistent with the values and standards of the health care system and contribute to the sustainability of the system.

Suggested Guidelines:

No material available for this section.

Recommendation:

It is recommended that:

- Telehealth policies, guidelines and procedures related to the required infrastructures, funding, remuneration, support for innovation and the diffusion process be developed at the federal/provincial/territorial levels.



Chapter 6

Organizational Leadership

This chapter focuses on topics related to organizational leadership and will be of particular interest to health administrators, governments, professional regulatory/licensing bodies, health professionals, standard-setting bodies, and researchers. Topics covered are: Organizational Leadership Overarching Issues, Organizational Accountability, Ensuring Quality Telehealth Services, and Continuity. The **What we learned** sections of this chapter are based primarily on the work of Jennett and Yeo (2003).

6.1 Organizational Leadership Overarching Issues

What we learned:

The Organizational Leadership environmental scan results indicated five “overarching” issues or themes that emerged across all three methodologies (literature review, stakeholder survey, key informant interviews) and all organizational leadership topics. The five issues are:

- virtual organization;
- integration of telehealth policies;
- telehealth-specific policy issues;
- flexibility and sensitivity to innovation; and
- multiple types of telehealth clinical applications and technologies.

Virtual Organization

The existing health care delivery system is primarily based on a one-to-one patient encounter model with services delivered within one site. In the case of telehealth there is always more than one site involved. Thus, an organization providing telehealth services may be viewed as a “virtual organization” extending beyond the walls of one institution to other settings that may include institutions, homes, schools, and workplaces. “Virtual organizations” can exist within jurisdictions and across jurisdictional boundaries; regional, provincial/territorial, and national. Organizational policies need to reflect the awareness of this concept of a “virtual organization” in areas such as the standardization of system utilization measures, scheduling, referrals, technical and network interoperability throughout the health care system. When providing cross-jurisdictional telehealth services, there is also a need for organizations to have policies and procedures in place to address quality, accountability and continuity.

Integration of Telehealth Policies

Organizations offering telehealth services must have documented organizational policies, procedures, standards, and guidelines. In organizations offering a variety of health services a common issue was the need to integrate telehealth services into existing organizational level policies, procedures, standards, and guidelines, whenever possible. These organizations need to review their existing policies to determine if telehealth is covered and revise policies as necessary.

Telehealth-specific Policy Issues

In organizations offering a variety of health services, there are new policy issues that are telehealth-specific and require the development of new policies, procedures, standards, and guidelines. These telehealth-specific documents need to be developed in areas such as: remuneration/reimbursement for cross-jurisdictional services; cross-jurisdictional licensure and liability issues; documentation and storage of patient/client telehealth records; and the roles and responsibilities of non-clinical staff during confidential telehealth activities.

Flexibility and Sensitivity to Innovation

Another overarching issue was the need for flexibility and sensitivity to innovation when dealing with telehealth services. The literature review indicated that, due to the rapid changes in telehealth technology and the evolving nature of policies, standards and guidelines, there is a need to review and revise telehealth policies, standards and guidelines more frequently than in other service areas. In addition, traditional evaluation frameworks and quality assurance models may need to be modified when applied to telehealth services.

Stakeholders, who participated in the organizational leadership interviews, recognized the need and importance of long-range planning for the sustainability of telehealth services. However, they also believed that, due to the rapidly changing technologies and e-health environment, flexibility and sensitivity to innovation were essential in the timing of policy and procedural reviews and evaluations.

Multiple Types of Telehealth Clinical Applications and Technologies

There are many different applications of telehealth (e.g., radiology, cardiology, homecare, teletriage, poison control, and mental health crisis management) that a health organization can provide. In addition, there are different types of telehealth programs (e.g., those related to the development of new applications and innovation [research and development, pilot projects]; and those related to delivery of “regular” telehealth services). An organization may need different types of policies and procedures for the different applications and types of programs.

What needs to be considered:

No material available for this section.

Guiding Principles:

- Organizations providing telehealth services shall ensure that there is compatibility of policy and work processes with the various organizations/settings they service.
- Organizations providing telehealth services shall have documented administrative policies, procedures, standards, and guidelines.
- Due to the ongoing development of the telehealth field, telehealth policies, procedures, standards, guidelines and agreements shall be reviewed more frequently than in other service areas.
- In some instances, organizations offering a variety of services may need different types of policies and procedures based on the telehealth clinical applications and programs provided.
- Patient/client needs such as privacy/confidentiality must be safeguarded when introducing innovation into the health care setting.

Suggested Guidelines:

- OL-1 Organizations providing telehealth services have documented organizational policies, procedures, standards, and guidelines. In organizations providing a variety of health services these are integrated with existing documents, whenever possible, and new policies etc., for telehealth are developed only as needed.
- OL-2 Organizations providing telehealth services consider the specific telehealth applications and program type (e.g., pilot, research, ongoing service) when developing organizational policies, procedures, standards, and guidelines.
- OL-3 Organizations providing telehealth services review policies, procedures, standards, guidelines and agreements more frequently than in other health service areas due to the ongoing development and change in the field.
- OL-4 Organizations providing telehealth services are aware of required policies, procedures, standards, and guidelines specific to “networked” services, which go beyond site requirements, such as shared central services (e.g., scheduling) or infrastructures (e.g., bridges).

Recommendations:

It is recommended that:

- Organizations providing telehealth, in addition to other services, review relevant policies, procedures, standards, and guidelines to determine if telehealth is covered and revise as necessary. New policies, procedures, standards and guidelines are developed in areas that are unique to telehealth, not covered in existing documents.

6.2 Organizational Accountability

Organizational accountability may be defined as responsibility and/or requirement to answer for conduct, tasks or activities. This responsibility may not be delegated (Canadian Council on Health Services Accreditation, 2001).

Accountability related to the delivery of telehealth services is considered for a number of key areas described in this section including:

- governance framework;
- privacy, confidentiality, security and ethics;
- documentation and storage of patient/client records;
- liability and risk management; and
- cross-jurisdictional services.

6.2.1 Governance Framework

What we learned:

There is a need for organizations providing telehealth services to have appropriate accountability and governance frameworks/mechanisms in place to enable and support telehealth services. The governance framework needs to focus on the roles, responsibilities and accountabilities of all individuals involved in telehealth activities.

Two key considerations related to governance were identified: the position of the telehealth service within the organizational chart; and the structures and processes in place to assist with accountability for telehealth.

Position in the Organization:

In organizations providing telehealth in addition to other services, there is a matter of where telehealth is positioned in the organizational structure and the lines of accountability. The individual to whom the telehealth program is accountable should be positioned in the organization so as to have a strategic impact.

Organizational Structures and Processes:

There should be administrative processes in place to support the governance structures and the person responsible for telehealth. Telehealth services should ultimately be accountable to a board or some other governing body and have the appropriate administrative levels in the organization to support that structure (e.g., technical, personnel, supervisory, managerial). Accountability should be clearly defined and documented.

What needs to be considered:

No material available for this section.

Guiding Principles:

- Organizations shall have the appropriate accountability and governance frameworks and mechanisms in place to enable and support telehealth services.

Suggested Guidelines:

- OL-5 Organizations providing telehealth services have clearly documented accountabilities in relation to the telehealth services.
- OL-6 In organizations providing telehealth services in addition to other services, the person responsible for coordinating telehealth services is accountable to someone positioned in the organization to make a strategic impact.

Recommendations:

No material available for this section.

6.2.2 Privacy, Confidentiality, Security, Ethics, and Informed Consent

What we learned:

Privacy:

Privacy is the right of an individual to control the collection, use and disclosure of personal information about him or herself (Canadian Institute for Health Information, 2002). Privacy requires organizational level policies to ensure the rights of the patient/client in this area. All organizations providing telehealth services must ensure they respect privacy obligations. Organizations with privacy policies in place will need to reassess these policies in light of electronic health record and telehealth developments. An appropriate privacy regime for telehealth services should be consistent with the privacy standards governments develop for the health sector, including an electronic health record as it evolves. Telehealth privacy considerations will likely be subject to federal legislation (i.e., the Personal Information Protection and Electronic Document Act (PIPEDA)) and/or privacy requirements set out in provincial privacy legislation pertaining to information handling practices. Privacy policy will have to accommodate the crossing of organizational and facility boundaries and sharing of highly personal information. As a result, managing privacy will require a collaborative governance approach including cooperation within and between organizations, individuals and monitoring bodies. At the organizational level there are various privacy tools that can be employed to adequately protect the privacy of personal health information including privacy policies that address data protection and sharing practices, information materials to raise awareness, privacy codes to govern employee conduct, privacy audits to ensure compliance, and privacy impact assessments to make improvements where necessary. Specific to telehealth, policies are required to govern who can be present during a telehealth session and indicate that all persons must declare themselves.

In 2001 Canada's Health Informatics Association (COACH), published *Guidelines for the Protection of Health Information* as a resource to assist health organizations to protect the information with which they are entrusted. It provides a framework to guide health organizations in the development and implementation of comprehensive privacy and security programs. These guidelines reflect the "new realities of health informatics" and the growing reliance of Canadian health organizations on information technology.

Confidentiality:

Confidentiality is the obligation of an organization, custodian, and individual to protect the information entrusted to it, to maintain the secrecy of the information and not misuse or wrongfully disclose it. As a result, confidentiality is an important issue that requires organizational level policies around the protection of health information and the consent process. Traditional confidentiality policies should be applied in the telehealth context with consideration for the specific technical issues involved in applying these policies for telehealth applications. It should be noted that confidentiality is protected under the PIPEDA or similar provincial/territorial legislation and the principles must be reflected in organizational policies. The policies must consider the impact of the human, organizational and technical aspects of telehealth. Measures to ensure that confidentiality is achieved should be described in writing. Specific measures to protect confidentiality at the clinical level are discussed in Section 3.5 There should be an educational component to deal with confidentiality issues. This was felt to be of particular importance where lay health care providers and volunteers are involved in providing telehealth services to ensure they are subject to the same confidentiality conditions.

Security:

Security is the protection of personal health information from unauthorized or unintentional loss, theft, access, use, modification or disclosure (Canadian Institute for Health Information, 2002). Key informants identified security as an important organizational policy issue and an area in which additional policies and standards related to telehealth were needed.

Telehealth has unique aspects that require special mention in the organization's security policies, guidelines and procedures. Specific measures to protect security are discussed in Section 7.3. These security policy and procedure issues are similar to those for electronic health records and it is expected these will be integrated in the near future. Once again, it was felt there should be an educational component to deal with security issues related to human behaviour.

Ethics:

The majority of survey respondents (64.6%) stated that their organizations did not have a telehealth-specific code of ethics for telehealth personnel. These respondents appear to be relying on their organizations' existing codes of ethics and/or legal guidelines. The key informants believed that the same ethical principles used in any face-to-face encounter should be applied to clinical telehealth encounters. However, there are several ethical aspects related to telehealth concerning informed consent, protection of confidentiality, privacy and security, handling of confidential electronic information, and so on, that are unique to this method of delivering health services. Although the majority of respondents reported their organizations did not have a telehealth-specific code of ethics, respondents had numerous suggestions regarding what should be included in such a document. Many of these suggestions reflect the special nature of telehealth and support the need to review existing codes of ethics to determine if they include these and other telehealth-specific ethical considerations. Special ethical needs should be taken into consideration when developing policies, standards, guidelines and procedures for telehealth services to First Nations and Inuit communities in the more isolated and remote areas of Canada.

Informed Consent:

In the delivery of telehealth services, as for any other health service, provincial/territorial legislation/regulations related to consent and client decision-making in the jurisdiction where the service is being rendered must be applied. From the organizational perspective there should be policies and procedures in place to ensure patients/clients give informed consent for the telehealth encounter. In addition, policies need to be in place describing information to be provided to the patient/client for informed consent (see CSO-15). Specific to nursing teletriage, consent is considered implied. However, it should be based on informed choice that includes providing the patient/client with information such as the name, profession and organization/location of the consulting health professional, how information will be recorded and stored, who has access to information, who is present during the interaction and, where applicable, alternative methods of care available. Informed consent from the clinical standards and outcomes perspective is discussed in Section 3.6.

What needs to be considered:

- Organizations providing telehealth services must have documented privacy policies and procedures to ensure the rights of the patients/clients in this area. Privacy policies must consider the unique aspects of telehealth such as the crossing of organizational and facility boundaries and sharing of highly personal information.
- Traditional confidentiality policies should be applied in this new context with consideration for the specific technical issues involved in applying these policies for various telehealth applications.
- Security is an important organizational issue that requires additional policies and procedures. These policy issues are similar to those of electronic health records and should be integrated in the future .
- The same ethical principles used in any face-to-face interaction should be applied to telehealth encounters. A need to review existing codes of ethics was identified to determine if there were telehealth-specific ethical considerations.

- When providing telehealth services, as with any other health service program, current provincial/territorial legislation or regulations related to client decision-making and consent in the jurisdiction where the service is rendered should be applied.

Guiding Principles:

- Organizations providing telehealth services shall have documented policies and procedures in place to ensure the privacy, confidentiality, and security of information that reflect the unique aspects of telehealth.
- Current legislation/regulations related to privacy should be applied. All relevant privacy legislation needs to be considered (i.e., federal, provincial, international).
- The organization shall deliver telehealth services and make decisions in accordance with its values and with its own code of ethics or other recognized codes of ethics.
- Consent for telehealth should follow similar principles and processes as those used for other health services. Current provincial/territorial legislation or regulations that relate to client decision-making and consent should be applied.

Suggested Guidelines:

- OL-7 Organizations providing telehealth services have privacy policies in place that consider:
- the crossing of organizational and facility boundaries and sharing of highly personal information; and
 - who is present during a telehealth session and that the client is informed.
- OL-8 Organizations providing telehealth services have policies and procedures in place that protect the confidentiality of information (see CSO-12, CSO-13) and consider:
- technical security (passwords and encryption);
 - site security;
 - maintenance of store and forward records, including photographs and videotapes;
 - employee confidentiality agreements for all staff and volunteers associated with the telehealth encounter; and
 - establishment of security and ownership of patient/client record.
- OL-9 Telehealth security policy and procedures be integrated with those for electronic health records, whenever possible.
- OL-10 Organizations providing telehealth services have policies and procedures in place that protect the physical security of telehealth equipment and electronic security of data (see TE-5).
- OL-11 Organizations providing telehealth services ensure that all individuals involved in the provision of telehealth services are aware of, and follow, policies and procedures related to confidentiality and security.
- OL-12 The same ethical principles that apply in any face-to-face patient/client interaction apply to telehealth encounters.
- OL-13 Organizations providing telehealth services have policies and procedures to ensure that informed consent is obtained and that are compliant with relevant provincial/territorial legislation and regulations related to patient/client decision-making and consent. Organizations are encouraged to consult with legal counsel and relevant professional bodies when determining consent policy (see CSO-14, CSO-15, CSO-16, CSO-17).

Recommendations:

It is recommended that:

- Health professionals' bodies and organizations providing telehealth services should review existing codes of ethics to determine if they include telehealth-specific ethical considerations.

6.2.3. Documentation and Storage of Patient/Client Telehealth Records**What we learned:**

The wide range of survey responses to the location of patient/client telehealth records indicated there are no uniform standards. Record keeping and documentation for telehealth was identified as an accountability issue requiring organizational level policies. Questions raised during the environmental scan included: Who is responsible for documenting the encounter? Where should the record be kept? and Who should keep the record? The need to develop standards for documentation and storage of patient/client telehealth records that are in keeping with the total electronic communication environment was identified. The implementation of an electronic health record will assist with the standardization of record keeping and will need to consider the unique requirements of telehealth.

What needs to be considered:

- The availability of timely and appropriate information for health professionals providing services across the continuum is an issue in traditional care. Telehealth introduces an additional complexity.
- Record keeping and documentation for telehealth was identified as an accountability issue that requires policies at an organizational level.
- At present there are no uniform standards for custody of the patient/client telehealth records.
- The need to develop standards for documentation and storage of patient/client telehealth records that are in keeping with the total electronic communication environment and electronic health record was identified.

Guiding Principles:

- Organizations providing telehealth services shall protect the confidentiality of patient/client information.
- All telehealth encounters shall be duly noted in the patient/client record and be made accessible to all authorized health professionals and the patient/client, if requested.

Suggested Guidelines:

OL-14 Organizations providing telehealth programs have policies and procedures for documentation and storage of patient/client telehealth records that respect the confidentiality of the information.

Recommendations:

It is recommended that:

- Standards be developed for documentation and storage of patient/client telehealth records that are in keeping with the total electronic communication environment. These standards should define: who has custody of the record; who has responsibility for ensuring the patient/client is aware of who has taken on this role; who has access to the information; retention schedules for each type of information collected; how information is destroyed; and how temporary or transitory records should be treated.
- Until such standards are put in place, a record of the telehealth encounter be kept at each site when more than one organization is involved.

6.2.4 Liability and Risk Management

What we learned:

There are several types of liability relating to telehealth that must be considered including: the health professionals involved; the technology/application; the organization or institution; and the human resources and training. The literature suggests that uncertainty exists about liability related to telehealth due to the lack of legal precedents. Some health professional protective associations have developed guidelines to address issues of liability specific to telehealth practice. For example, the Canadian Medical Protective Association (CMPA) recommends that “a prudent process is in place” with respect to ensuring that telehealth is covered under the organization’s risk management plan. From a technology/application perspective, organizations have to be sure that equipment acquisition, maintenance, and quality assurance is set in both policy and practice. From a human resource perspective, organizations need specific guidelines for recruitment, evaluation, training, and credentialing/privileging of staff.

To deal with these different types of liability an organization should have clearly defined accountabilities for various aspects of the telehealth service delivery. It is recommended that risk management policies and a plan be in place. Special professional practice issues around risk management and liability should be addressed for those health professionals working in remote areas.

What needs to be considered:

- As with other health service programs, organizations providing telehealth services should have a documented risk management plan.

Guiding Principles:

- Organizations providing telehealth services shall take steps to prevent and manage any risks to the organization.

Suggested Guidelines:

- OL-15 Organizations providing telehealth services manage risks within the telehealth program by:
- ensuring that they have a documented risk management plan;
 - ensuring that equipment acquisition, maintenance, and quality assurance is set in both policy and practice (see TE-1, TE-16);
 - having specific guidelines for recruitment, evaluation and training of staff (see HR-6, HR-9, HR-10, HR-12, HR-13);
 - having a written policy statement regarding health professional licensing, credentialing and granting of privileges (see HR-7, HR-8);
 - clearly defining the roles, responsibilities and accountability of the different individuals or groups within the organization involved in providing telehealth services (see HR-3, HR-4, HR-5).

Recommendations:

No material available for this section.

6.2.5 Cross-Jurisdictional Services within Canada

What we learned:

A number of policy issues need to be resolved with respect to the provision of cross-jurisdictional telehealth services. A common, pan-Canadian level of agreement should be in place with respect to cross-jurisdictional services that considers such things as licensure,

reimbursement, and liability. Cross-jurisdictional services is an area where key informants felt a pan-Canadian telehealth policy framework should be in place because organizational policies may not apply across jurisdictional boundaries.

The survey and key informant interview findings indicated that policies regarding cross-jurisdictional licensure and other accountability issues need to be dealt with at a pan-Canadian level, by provincial/territorial regulatory/licensing bodies. After these issues are resolved at that level, health care organizations can set in place their own organizational policies and procedures in accordance with those established regulatory/licensing policies. Until a pan-Canadian policy framework is developed some health care organizations have interim policies and guidelines in place to deal with cross-jurisdictional telehealth services.

Specific cross-jurisdictional issues related to licensure are covered in Sections 4.3 and to reimbursement in Section 4.6.

What needs to be considered:

- Policies regarding cross-jurisdictional licensure and other accountability issues need to be dealt with at a pan-Canadian level by professional regulatory/licensing bodies.

Guiding Principles:

- Policies and procedures shall be in place to guide cross-jurisdictional services.

Suggested Guidelines:

No material available for this section.

Recommendations:

It is recommended that:

- Until policies are harmonized to facilitate a pan-Canadian approach, health care organizations should have interim policies and guidelines in place to deal with cross-jurisdictional telehealth services and that these should be based on agreements reached between individual jurisdictions.
- Policies regarding cross-jurisdictional licensure and other accountability issues are dealt with at a pan-Canadian level by professional regulatory/licensing bodies (see Section 4.3).

6.2.6 Global and International Telehealth

What we learned:

Many of the principles involved would be the same whether the telehealth service is regional, national or global. The same accountability applies. However, the complexity of these issues increases exponentially in every area ranging from liability, to language and time. Accountability issues, e.g., liability, licensure and reimbursement areas, must be examined carefully. Ensuring quality of services would also be an issue with respect to assessing patient outcomes and continuity of services. If an organization is exporting its telehealth services, then its own quality and accountability standards should be maintained. Specific policy issues related to providing global and international telehealth services also include: 1) cultural awareness training/continuing professional development; 2) liability insurance issues; 3) needs analysis for international telehealth services; 4) consideration of geographic differences with respect to time; and 5) interoperability agreements.

What needs to be considered:

- For global and international telehealth, many of the principles involved and accountability would be the same whether the service is being offered regionally, nationally or globally. However, the complexity of these issues increases exponentially.
- Once services become international in scope, simple agreements between organizations may not be enough because the fundamental systems (i.e., legal, regulatory) are different.
- Legislation that provides clear jurisdiction to regulate telehealth across international borders is required to ensure accountability.

Suggested Guidelines:

OL-16 Organizations providing telehealth services globally and internationally have specific policies in place that address such issues as liability, licensure and reimbursement.

Recommendations:

It is recommended that:

- A national organization monitor federal/provincial/territorial and international policy-related activities on an ongoing basis and make this information available to the field.
- Extreme caution should be exercised before engaging in international telehealth activities until legal/regulatory issues are resolved.
- Federal and provincial governments/Ministries of Health work with complimentary international authorities to negotiate necessary international agreements to support the regulatory processes important for public protection and accountability.

6.3 Ensuring Quality Telehealth Services

What we learned:

Ensuring quality telehealth services involves a number of activities at various levels of the health system. Two important activities that contribute to ensuring quality telehealth activities include evaluation and quality assurance/improvement. Evaluation may be defined as determining significance or worth, usually by careful appraisal or study (Merriam-Webster, 2003). Quality assurance/improvement may be defined as the systematic monitoring and evaluation of various aspects of a project, service, or facility to ensure that standards of quality are being met (Merriam-Webster, 2003). Our findings related to each of these two activities aimed at ensuring quality telehealth services are discussed below.

Two important activities that contribute to ensuring quality telehealth activities include evaluation and quality assurance/improvement.

Evaluation:

The literature review indicated a need to determine whether or not telehealth does improve the quality and accessibility of care and that all aspects of the telehealth encounter should be evaluated, including: 1) the patients' physical and psychological comfort; 2) the technical quality of the service; 3) the quality of communication between caregivers and patients; 4) the duration of the encounter; 5) the timeliness of care delivery; 6) the degree of confidentiality; and 7) the costs.

While evaluation of telehealth services is evolving, there is still a lack of sophistication in data collection. Evaluation of telehealth services currently focuses on the collection of system utilization and technical performance data, and patient/client satisfaction and provider satisfaction data. The more challenging areas related to the provision of telehealth services, such as access to care/services, patient/client outcomes, cost-benefit/cost-effectiveness, and the impact on workflow, team relationships, provider roles and

responsibilities need to be evaluated more frequently. Informed, evidence-based evaluation of quality of care and cost effectiveness is still mainly at an early stage. However, the need to have baseline data to show that quality of care and patient safety are at least equal to face-to-face encounters is becoming recognized. The collection of both qualitative and quantitative data to evaluate telehealth services is needed.

The survey questionnaire findings indicated there are a wide range of indicators and measures being used to evaluate telehealth services. These tend to be organization or program specific. Standardization of data collection tools and common measures and key indicators for telehealth applications are needed. Key performance indicators for telehealth need to be defined to ensure consistency when they are monitored, reported back on, and continuously evaluated. A recent report by Scott, McCarthy, et al. (2003) provides a comprehensive information document that summarizes the telehealth outcomes literature and proposes a “Telehealth Outcomes Development (TOD) model”.

Quality Assurance/Improvement:

The survey respondents and key informants responded that telehealth quality assurance is considered important, and nearly all organizations surveyed were collecting some data, with other areas under development.

A condition of accountability at the organizational level is the monitoring of performance through the development of an ongoing quality assurance/improvement plan. Telehealth services should be evaluated in a continuous and ongoing process through the organizational quality assurance/improvement activities. Part of the organization’s accountability for quality assurance involves having mechanisms in place to make the necessary adjustments to services, based on the results of the monitoring. It was suggested by the key informants that the quality assurance/improvement monitoring be done more frequently than annually (i.e., quarterly for the first year of a telehealth program’s implementation and semi-annually after that).

Key informants also indicated that standardized quality indicators, related to system utilization, patient and provider satisfaction, and technical performance, are needed. Quality indicators need to be defined at both the program level and the organizational level. The topic of outcomes and indicators is further addressed at the clinical level in Section 3.4.

What needs to be considered:

- As with other health service programs, telehealth services should be regularly monitored through the organizational quality improvement/assurance activities.
- There is a need to evaluate the impact of telehealth on cost, quality, and accessibility of care.
- Standardization of data collection tools and common measures and key indicators for telehealth applications are needed.

Guiding Principles:

- Organizations providing telehealth programs shall seek to meet clients’ needs by using a structured process that selectively monitors and improves service.

Suggested Guidelines:

OL-17 Organizations providing telehealth services maintain a quality practice environment to promote recruitment and retention of health professionals and quality client outcomes. Activities such as sharing and taking up best practices and regularly reviewing research literature should be promoted within organizations providing telehealth services.

- OL-18 Organizations providing telehealth programs have clearly defined and coordinated activities to continually monitor and improve quality of telehealth services.
- OL-19 Organizations providing telehealth services conduct more frequent reviews and evaluation of the service, particularly upon initial implementation.

Recommendations:

It is recommended that:

- Research be undertaken to evaluate and provide a greater understanding of the implications of telehealth services in terms of quality, accessibility, safety and cost. The involvement of the Canadian Institute of Health Research (CIHR) and the Canadian Institute for Health Information (CIHI), as well as the development of a common research agenda, would facilitate this work.
- Work be undertaken to standardize data collection tools and common measures and identify key indicators for telehealth applications.

6.4 Continuity

What we learned:

In the past, many telehealth services have been primarily project and pilot-program oriented. Overall, the findings indicate that telehealth is beginning to be seen as a valued service and becoming more integrated with the health system and health care organizations.

Our findings related to continuity are discussed under the following five headings:

- integrated telehealth delivery model;
- administrative interoperability;
- coordination of multiple telehealth services within an organization;
- strategies and policies to ensure sustainability; and
- global and international telehealth.

Integrated Telehealth Delivery Model

Telehealth services should be integrated, as much as possible, with existing health care services. The process for telehealth should be comparable to the process used for a face-to-face visit. An integrated telehealth delivery model should be developed so that telehealth is positioned as a strategic resource that will make it possible to continuously improve an organization's and the health system's capacity to deliver services and information across distances.

Administrative Interoperability

In organizations providing a variety of health services, telehealth services should be integrated into existing administrative policies, guidelines and procedures, whenever possible. These organizations should also ensure that all providers have information about accessing telehealth services.

An integrated system of information and communication technologies should be in place to enable continuity of care. As telehealth applications become more complex (e.g., homecare, pre-operative care at a distance, and regionalization of health facilities) some central coordination of telehealth communications is required. Standards for coordination and linkages should be developed, along with administrative structures to facilitate these standards.

Coordination of Multiple Telehealth Services within an Organization

Health care organizations offering multiple telehealth services should coordinate the service delivery and integrate telehealth into existing routines, whenever possible. The organization of outpatient services was proposed as a useful model for coordinating multiple telehealth services. The coordination of more than one telehealth service should be done centrally, with the site or network coordinators being responsible for the day-to-day operations. Some macro level policies relevant to all telehealth applications should be in place within the organization to ensure consistency. Examples of these policies include: 1) actions in the event of a failure; 2) equipment maintenance standards; 3) booking; and 4) considerations of privacy, ethics, and informed consent. Setting the priority criteria and guidelines for use of the services, would also be an administrative responsibility.

Strategies and Policies to Ensure Sustainability

Business plans, regular reviews and reliable, long-term funding strategies were identified as mechanisms around which policies and guidelines should be developed to ensure accountability and sustainability of telehealth services.

Business plans were recognized by survey and interview respondents as being important for the sustainability of telehealth services. However, they tended to believe that five years was too long a period for a telehealth business plan to be in place. The technology is changing and it is difficult to do a long-range business plan with such a vibrant, growing technology. Program-related infrastructure supports the need for sustainable development, e.g., bridging, scheduling, information repositories, telehealth information repositories and directories.

Regular reviews of telehealth services should be part of an organization's overall evaluation process. These reviews should be more frequent than annually and it was suggested that they be done quarterly for the first year and semi-annually after that.

Long-term funding is critical to the sustainability of telehealth services. There needs to be predictable long-term funding to sustain telehealth services.

What needs to be considered:

- An integrated system of information and communication technologies should be in place to enable continuity of care.
- As telehealth applications become more complex (e.g., homecare, pre-operative care at a distance, and regionalization of health facilities) some central coordination of telehealth communications is required.

Guiding Principles:

- Telehealth services shall be integrated, as much as possible, within existing health care service delivery.

Suggested Guidelines:

- OL-20 Organizations offering multiple telehealth services have mechanisms in place to facilitate coordination of the telehealth services including:
- management of the equipment and physical space;
 - developing policies, procedures and guidelines for use of the services; and
 - setting priorities.
- OL-21 When two or more health care organizations/agencies are involved in the telehealth service delivery, a written agreement or contract between the health care organizations/agencies is in place. This agreement includes written statements appropriate to all relevant policy issues, such as:
- reimbursement;
 - liabilities (referring and consulting providers, organizations/agencies);
 - legislation regarding security and protection of health information;

- informed consent;
 - documentation and storage of patient/client records;
 - protection of patient/client “rights to privacy, confidentiality, and quality care”; and
 - detailed protocols for data preparation, transmission, receipt, mutual responsibilities, and liabilities (Nerlich, Balas, et al., 2002).
- OL-22 Organizations providing telehealth services have policies and procedures to ensure accountability and sustainability of the telehealth services.

Recommendation:

It is recommended that:

- An integrated telehealth delivery model be developed that positions telehealth as a strategic resource that enables organizations to continuously improve their capacity to deliver services and information across distances.



Chapter 7

Technology and Equipment

This chapter focuses on topics related to technology and equipment and will be of particular interest to those responsible for purchasing, maintaining and using telehealth equipment, standard-setting bodies, and researchers, as well as technology vendors and developers. Topics covered are: Procurement Practices; Safety; Security; Diagnostic Quality; Reliability; Acceptability; Interoperability; Scalability; Maintenance; and Current Technology Standards and Guidelines. The **What we learned** sections of this chapter are based on the work of Brockway (2003).

7.1 Procurement Practices

What we learned:

Procurement practices were explored in both the survey and interview portions of the environmental scan. The top three criteria for purchasing telehealth equipment are: ease of use, price, and conformance to standards. Other criteria include: performance of equipment during demonstration; ability to interface with peripherals; service/support; speed; means of communication (e.g., IP, ISDN, POTS); conformance to requirements; acceptability to patients/clients; and financial stability of vendor.

The Request for Proposals (RFP) is the preferred method for procuring equipment and a team approach should be taken when preparing the RFP. Input from users is of the utmost importance to be sure that user needs are incorporated. The major advantages of using an RFP are: it obtains best value for the money; it is a well-established process used by most of the provincial/territorial governments; it allows an objective decision; and it obtains a broad perspective of user needs. The two main disadvantages are the time it takes to develop, and that its development requires specific skills. It was suggested these disadvantages could be overcome by having a centralized (federal/provincial/territorial) RFP process to assist with determining the requirements. A few jurisdictions have created a checklist and weighting system to evaluate RFP responses during demonstration of the equipment.

What needs to be considered:

- As with other health service programs, telehealth programs require sound procurement practices.

Guiding Principles:

As with other health service programs, organizations providing telehealth services shall have procurement practices that consider:

- input from staff;
- type of services being provided;
- knowledge and skills needed for use; and
- potential risks and impacts.

Suggested Guidelines:

- TE-1 When procuring equipment, user input is sought to ensure that technology selection is based on functional capacities required to address user needs.
- TE-2 Suggested criteria when purchasing telehealth equipment include:
- ease of use;
 - price;
 - conformance to standards and requirements;
 - performance of equipment during demonstration;
 - ability to interface with peripherals;
 - service/support;
 - speed;
 - means of communication (e.g., IP, ISDN, POTS);
 - acceptability to patients/clients;
 - financial stability of vendor;
 - CSA certification;
 - interoperability;
 - review of upgrade path for equipment;
 - portability;
 - scalability;
 - requirements of Medical Devices, Health Canada; and
 - clinical guidelines.

Recommendations:

It is recommended that:

- Development of a standardized process (federal/provincial/territorial) is explored to assist with determining the requirements for an RFP.

7.2 Safety

What we learned:

Safety is the condition of being safe from undergoing or causing hurt, injury, or loss. (Merriam-Webster, 2003).

All three environmental scan methods were utilized to explore safety. The lack of proof of telehealth safety is cited as a concern in the literature (Rigby, Forsstrom, et al., 2001).

Telehealth technology safety is regulated through CSA approval for electrical safety (C22), Industry Canada's Electromagnetic Interference Standard (ICES 003) and Health Canada Medical Devices policy. The majority of survey respondents' telehealth systems are compliant with C22, just over half are aware of compliance to ICES 003, and less than 40% are aware of compliance to Medical Devices. Almost 40% of respondents are unaware of compliance to ICES 003 and Medical Devices policy.

Grey areas exist in safety standards and these were explored in key informant interviews, with a focus on Medical Devices policy. A gap with telehealth system safety occurs because not all parts of the telehealth system need to be evaluated objectively for their ability to safely provide diagnostic information (Gregerman, 1996). An example of this is in videoconferencing where the equipment is used to make a diagnosis but, since it does not touch the patient, is not considered to be a medical device. Videoconferencing equipment is developed for the business world and there is no guarantee that the live images sent are the ones received. It is suggested that a clinical grade of videoconferencing equipment be developed and approved (i.e. equipment that is used for clinical diagnosis, has a higher bandwidth and allows the user to choose between high resolution or smoothness of motion depending on the application). Other grey areas are the exclusion of some telehealth equipment by CSA because it is identified as a computer system, and whether a whole system is certified or just the individual components. The grey areas need to be resolved.

Equipment standards are suggested as well as clarification of grey areas by Medical Devices.

What needs to be considered:

- In terms of safety and standards, telehealth equipment should be treated the same as any other equipment used in the delivery of health care services.
- A number of grey areas in terms of equipment safety and standards were identified.

Guiding Principles:

- In terms of safety and standards, telehealth equipment shall be treated the same as any other equipment used in the delivery of health care services.

Suggested Guidelines:

- TE-3 Organizations providing telehealth services comply with all relevant safety laws, regulations and codes including:
- CSA Canadian Electrical Safety Code (CSA 22.1);
 - CSA safety standard for electromedical equipment (CSA 60601.1.1)
 - Industry Canada's Electromagnetic Interference Standard (ICES 003); and
 - Health Canada Medical Devices policy.
- TE-4 Organizations providing telehealth services ensure that infection control policies and procedures are followed in the delivery of telehealth services.

Recommendations:

It is recommended that:

- Health Canada Medical Devices Branch and Canadian Standards Association consider developing and implementing national safety standards for telehealth equipment.

7.3 Security

What we learned:

Security refers to the protection of personal health information from unauthorized or unintentional loss, theft, access, use, modification, or disclosure (Canadian Institute for Health Information, 2002). Security involves the protection of computer hardware and software from accidental or malicious access, use, modification, destruction, or disclosure. Security also pertains to personnel, data, communications, and the physical protection of computer installations (IEEE Standard Dictionary of Electrical and Electronics Terms, 1990.)

Security of telehealth technology and equipment was explored in all environmental scan methodologies. Both physical and electronic security measures are described.

Physical security is best accomplished by putting telehealth equipment behind locked doors, locking up any peripherals or portable equipment, and controlling access to the telehealth equipment.

Electronic security of data was not a concern for the majority of survey respondents and interview informants as patient/client data are not stored within the telehealth system. However, the electronic security of telehealth during a session is of concern. User authentication should be necessary to turn on the equipment regardless of the type of telecommunication network (ISDN or Internet Protocol (IP)). Additional security measures for IP networks include using a secure network behind a firewall with encryption. The literature and key informants point to Public Key Infrastructure (PKI) as the future for IP network security.

Telehealth security should be no different than what occurs for other health care equipment and services.

What needs to be considered:

- Measures to ensure telehealth security should be no different than those for other health care equipment and services and data. Both physical and electronic security measures must be considered.

Guiding Principles:

- Organizations and individuals providing telehealth services shall ensure the physical security of equipment used in the delivery of telehealth services and the electronic security of data.

Suggested Guidelines:

- TE-5 Organizations providing telehealth services have policies and procedures in place to ensure the physical security of telehealth equipment and the electronic security of data that recommend:
- telehealth equipment be kept behind locked doors, whenever possible;
 - peripherals and other movable equipment be physically secured;
 - access to telehealth equipment be limited through the use of keys and passwords;
 - ISDN and IP networks require user authentication protection;
 - IP networks require a secure network behind a firewall with encryption; and
 - use of screensavers.

Recommendations:

It is recommended that:

- Organizations providing telehealth services review their existing policies and procedures to ensure physical and electronic security for telehealth services. New policies/procedures should be developed as required.

7.4 Diagnostic Quality

What we learned:

Diagnostic quality encompasses both of the terms “efficacy” and “effectiveness”, which are related.

Diagnostic quality was discussed in all three environmental scan methods. The literature contains research on the efficacy or effectiveness of the following telehealth applications:

- rural medicine peripherals (Crump, Levy, et al., 1996);
- telesurgery (Demartines, Otto, et al., 2000);
- teleorthopaedics (Haukipuro, Ohinmaa, et al., 2000);
- teleophthalmology (Cuzzani, Bromwich, et al., 2000; Dyer and Kirk, 2000);
- telepsychiatry (Menon, Kondapavalru, et al., 2001);
- teletrauma management (Tachakra, Jaye, et al., 2000; Tachakra, Lynch, et al., 2001);
- videoconferencing (consultation) (Lamminen, Ruohen et al., 2001; Grimsgaard, 1999);
- teledermatology (Jolliffe, Harris, et al., 2001; Loane, Bloomer, et al., 2000; Wootton, Bloomer, et al., 2000);
- teleradiology (Canadian Association of Radiologists, 1999); and
- telepathology (Foran, Meer, et al., 1997; Kayser, Beyer, et al., 2000; Papierz, Szymas, et al., 2000; Stauch, Schewepe, et al., 2000; Weinberg, Allaert et al., 1996).

Information on diagnostic quality is found in both the medical literature, and as standards and guidelines produced by provider organizations. The majority of survey respondents do not consult the literature for diagnostic quality; they prefer to do subjective provider evaluation of the telehealth application. Although the literature may not be consulted, where standards and guidelines do exist such as DICOM and Canadian Association of Radiologists Standards and Guidelines for Teleradiology (1999), the majority of

respondents follow them. Legal liability concern is expressed over using subjective provider evaluation and a few interview informants perform a more objective provider evaluation using a gold standard in the field measuring both the efficacy and effectiveness of the telehealth application.

Diagnostic quality is best determined through objective provider evaluation and it is suggested there be a centralized coordinating body formed to facilitate development and implementation of diagnostic quality standards and guidelines obtained through research. A committee in Quebec has been organized to begin determining diagnostic quality standards and guidelines. It was suggested that a national body should facilitate the development of diagnostic quality standards and guidelines.

What needs to be considered:

- A need for application-specific diagnostic quality standards and guidelines was identified. Teleradiology is the only application with formalized standards and guidelines.
- The majority of survey respondents do not consult the literature for diagnostic quality; they prefer to do subjective provider evaluation of the telehealth application.

Guiding Principles:

- The delivery of diagnostic quality images and audio is essential for safe, effective and efficient telehealth service delivery.

Suggested Guidelines:

- TE-6 Organizations providing telehealth services follow application-specific diagnostic quality guidelines and standards, whenever possible.
- TE-7 In the absence of application-specific diagnostic quality guidelines and standards, the literature on efficacy/effectiveness is consulted.

Recommendations:

It is recommended that:

- National specialty bodies develop and implement application-specific guidelines and standards for diagnostic quality using telehealth technology and equipment.

7.5 Reliability

What we learned:

Reliability is the ability of a system or component to perform its required functions under stated conditions for a specified period of time (Institute of Electrical and Electronics Engineers, 1990). Reliability of telemedicine equipment can be measured by process indicators such as hours booked versus hours actually used (Perednia, 1996).

Reliability was explored in all environmental scan methods. Reliability was not specifically searched for in the literature, but evolved as an issue while searching other issues. One method is described in the literature to technically test reliability of data exchange in a telemedicine session, the Telemedicine Benchmark (Klutke, Mattioli, et al., (1999)). The survey investigated the reliability of the telehealth system itself and the reliability of the communication network.

Logbooks are kept by the majority of respondents to track equipment reliability and the main data elements collected are session start and end times, technical problems, user problems and how the problems are resolved. To ensure equipment reliability, key

Logbooks are kept by the majority of respondents to track equipment reliability and the main data elements collected are session start and end times, technical problems, user problems and how the problems are resolved.

informants suggest: initially purchasing the appropriate equipment; post-installation testing; preventive maintenance (includes pre-session calibration and checklists); proper training of users; and adherence to reliability standards and guidelines.

To determine problems with the reliability of the telecommunication network, most respondents rely on the vendor for assistance. To ensure reliability of the telecommunication network, key informants suggest the development and use of more stable telecommunication networks (i.e. networks that do not drop connections).

What needs to be considered:

- In terms of reliability of telehealth services both equipment reliability and reliability of the telecommunication network must be considered.
- To ensure reliability of the telecommunication network, key informants suggest the development and use of more stable telecommunication networks.

Guiding Principles:

- Reliability of technology and equipment is essential for safe, effective and efficient delivery of telehealth services.

Suggested Guidelines:

- TE-8 Organizations providing telehealth services adhere to reliability standards and guidelines where they exist.
- TE-9 Organizations providing telehealth services take steps to ensure equipment reliability that may include the following:
- efforts be made to initially purchase the appropriate equipment (see TE-2);
 - a check list is instituted for post-installation testing of equipment;
 - preventive maintenance occurs (including pre-session calibration and checklists);
 - pre-session calibration of equipment occurs using checklists;
 - users be trained in proper use of equipment;
 - reliability standards and guidelines are adhered to, where they exist; and
 - contingency plans are in place.
- TE-10 Organizations providing telehealth services track equipment reliability using logbooks that record:
- start time;
 - end time;
 - technical problems;
 - user problems; and
 - how problems were resolved.
- TE-11 Organizations providing telehealth services take steps to ensure reliability of the telecommunications network by having:
- quality of service agreements in place with telecommunication providers; and
 - access to additional lines when required for mission critical services.

Recommendations:

It is recommended that:

- National reliability standards and guidelines for telehealth technology and equipment be developed and implemented.

7.6 Acceptability

Acceptability is a state or condition of meeting minimum standards for use, as applied to methods, equipment, or consumable products (McGraw-Hill, 1989).

What we learned:

Acceptability was specifically discussed in the literature review and survey. Technical equipment acceptability was discussed in the literature for:

- teleconsultations (Taylor, Goldsmith, et al., 2001);
- tele-echocardiography (Mehta, Wakefield, et al., 2001);
- rural family practice (Crump, Levy, et al., 1996);
- videoconferencing (Pammer, Haney, et al., 2001; Klutke, Mattioli, et al., 1999);
- telepsychiatry (Mielonen, Ohinmaa, et al., 2000; Zarate, Weinstock, et al., 1997); and
- telehomecare (Bratton and Cody, 2000; Kinsella and Warner, 1998; Dansky, Bowles, et al., 1999).

Equipment acceptability is influenced by: ease of use, time and the quality of audio, video and data communications, and reliability. To maintain telehealth equipment acceptability, the majority of survey respondents initially purchase user-friendly technology and more than half provide user and client training and perform user and client evaluation.

Equipment acceptability is influenced by: ease of use, time and the quality of audio, video and data communications, and reliability.

What needs to be considered:

- As with other health service programs, users in telehealth programs expressed the need for acceptable equipment.

Guiding Principles:

- Acceptability of technology and equipment is essential for safe, effective and efficient delivery of telehealth services.

Suggested Guidelines:

- TE-12 Organizations providing telehealth services take steps to maximize equipment acceptability that include:
- purchase of user-friendly equipment (see TE-2);
 - appropriate training of users and patients/clients;
 - ongoing provider and patient/client evaluation of equipment acceptability; and
 - existing standards/guidelines.

Recommendations:

No material available for this section.

7.7 Interoperability

What we learned:

There are three types of interoperability: human/operational, clinical, and technical. (Canadian Society for Telehealth, 2001). This section deals with technical interoperability, which refers to the ability of two or more systems (computers, communication devices, networks, software, and other information technology components) to interact with one another and exchange data according to a prescribed method in order to achieve predictable results (ISO/TC-215).

The need for interoperability and open standards is emphasized in numerous articles (Homecare and Telerehabilitation Technology Center, 2000; British Columbia Ministry of Health Services, 2001; G-8 Global Healthcare Applications Project-4, 2002, Kopsacheilis, Kamilatos, et al., 1997; Tran, Krainak et al., 1999; Ricord, 1995). The Alberta Research Council partnered with Alberta Health and Wellness and CIHI to address interoperability on a provincial/territorial, national and international level, including the development of documents for ISO (ISO/TC 215 Health Informatics, 2002; Sutherland, Igras, et al., 2000).

Key informants identified many telehealth interoperability issues including: multiple interpretations of standards; network interoperability; multiple equipment interoperability; ownership of problem; data exchange; remote management; and audio and video streaming.

Among survey respondents, there was no consensus on the best way to ensure interoperability, but a few methods are mentioned. Survey respondents most commonly ensure interoperability within their region by testing the equipment prior to purchasing, buying equipment from one or two suppliers, purchasing standards-based equipment or through conformance and interoperability testing. To ensure interoperability outside of their region, test calls between systems are performed, standards-based equipment is purchased, or Alberta Research Council Guidelines are followed.

Key informants identified many telehealth interoperability issues including: multiple interpretations of standards; network interoperability; multiple equipment interoperability; ownership of problem; data exchange; remote management; and audio and video streaming.

The development of, and adherence to, standards was noted as the way to deal with interoperability issues. These standards should be coordinated nationally and engage the vendors. Telehealth standards must be compatible with other health systems, especially for information exchange. To hasten standards development, telehealth could be divided into two different tools, a communication tool and a clinical tool, each with its own separate standards.

To increase awareness of interoperable equipment, an equipment information repository should be developed.

What needs to be considered:

- Among survey respondents, there was no consensus on the best way to ensure interoperability, but a few methods are suggested.
- The development and adherence to open standards was noted as the way to deal with interoperability issues.

Guiding Principles:

- Interoperability of systems (computers, communication devices, networks, software, and other information technology components) within and outside of health regions, as well as with other components of the health system is necessary for effective and efficient delivery of telehealth services.

Suggested Guidelines:

- TE-13 Suggested measures to ensure interoperability between service providers within a region include:
- test the equipment prior to purchasing (see TE-2);
 - buy equipment from one or two suppliers;
 - purchase standards-based equipment; and
 - conduct conformance and interoperability testing prior to full-scale deployment.
- TE-14 Suggested measures to ensure interoperability outside of a region include:
- perform test calls between systems;
 - purchase standards-based equipment; and
 - follow ISO, Alberta Research Council or other guidelines, where applicable.

**Recommendations:**

It is recommended that:

- The Canadian Institute for Health Information and Canada Health Infoway consider working collaboratively in the development and maintenance of national standards to support telehealth interoperability (i.e. standards for data architecture, exchange and repositories).
- The process to develop the standards to support telehealth interoperability involve telehealth providers (including solo practitioners and those in the private sector such as pharmacies) and vendors/telecommunications companies.
- Telehealth information exchange standards be compatible with health information systems (i.e., HL7 compliant, where applicable).
- An information repository providing information on the technical interoperability of specific equipment be developed to increase awareness and assist with equipment selection.

7.8 Scalability

What we learned:

Scalability is the ability of a computer application or product (hardware or software) to continue to function well as it (or its context) is changed in size or volume in order to meet a user need (Search 390.com, 2002). An example of scalability would be the implementation of a home telehealth program with one nursing station and 10 patient/client stations which expands one year later to 50 patient/client stations and a second nursing station all working with the original system.

Scalability was explored in all the environmental scan methods. Scalability was not specifically searched for in the literature review, but was identified as an issue. There was poor understanding and answering of the question related to scalability in the survey.

Most survey respondents plan on expanding their telehealth system by increasing the number of applications, but many respondents did not state the necessary upgrades for expansion. The majority of key informants agree that scalability is an important consideration when developing telehealth technology. To make scalability easier, standards need to be developed and adhered to, appropriate planning needs to occur before technologies are purchased, and a refresh strategy is necessary after purchase. A number of standards were suggested to facilitate scalability including file formats for “store and forward,” number and type of inputs, interfaces, software and multi-point bridging.

What needs to be considered:

- Scalability is important for the sustainability of a telehealth program.
- Since patient care diagnostic equipment is not used exclusively for telehealth, consideration of telehealth suitability when purchasing equipment would facilitate scalability.

Guiding Principles:

- Scalability is an important consideration when planning telehealth programs and purchasing necessary equipment and technology.

Suggested Guidelines:

- TE15 Organizations providing telehealth services take steps to facilitate scalability when purchasing equipment and technology that may recommend:
- developing an overall plan that includes a needs assessment with user input and considers future growth and change;
 - using scalability as a requirement in the procurement process (see TE-2); and
 - using lifecycle planning (a “refresh strategy”) once equipment is purchased that acknowledges new requirements and upgrades that emerge, as well as the need to replace equipment, and plan accordingly.

Recommendations:

It is recommended that:

- National Standards be developed to facilitate scalability of telehealth technology and equipment.

7.9 Maintenance

What we learned:

Maintenance practices were discussed in the survey and key informant interviews. There are two types of maintenance, pro-active (preventive) and reactive (fix it when it breaks). The vast majority of survey respondents have reactive telehealth equipment maintenance agreements containing access to technical support, multiple modes of support and warranty. Pro-active preventive maintenance is undertaken by one-third of respondents. The majority of people who perform preventive maintenance have technical training. Key informants prefer preventive maintenance to maintain telehealth equipment and it could include: network checks; equipment checks; software updates; a supply of spare parts on hand; interoperability checks; logbook analysis; pre-session testing; and remote access to equipment. Also suggested as part of maintenance are life cycle planning (refresh strategy), quality assurance, and accountability for the equipment.

What needs to be considered:

- As with other health service programs, telehealth programs require processes in place to ensure proper maintenance of technology and equipment.

Guiding Principles:

- Maintenance of technology and equipment is essential for safe, effective and efficient delivery of telehealth services.

Suggested Guidelines:

- TE-16 Organizations providing telehealth services have processes in place to ensure the safety and effectiveness of equipment including:
- preventive maintenance that may include:
 - network checks
 - equipment checks
 - software updates
 - keeping a supply of spare parts
 - interoperability checks
 - logbook analysis
 - pre-session testing (including calibration)
 - remote access to equipment;
 - equipment maintenance agreements in place;
 - maintenance services available locally;

- individuals performing maintenance have appropriate technical training;
- lifecycle planning (a “refresh strategy”) for required updates and replacement of equipment;
- quality assurance measures in place (i.e., pre-session testing);
- clear accountability for all equipment; and
- education of staff about maintenance requirements.

Recommendations:

No material available for this section.

7.10 Current Technology Standards and Guidelines

What we learned:

Current standards and guidelines were identified in the literature. There is considerable research on technology standards, but more is necessary. There is a need to develop a process model for each health care/medical discipline with technical needs defined in terms of quality of service, security and application of interoperability; they should remain understandable to the clinical user (G8 Global Healthcare Applications Project, 2002).

There are numerous application-specific and non-specific standards and guidelines written for telehealth equipment, notably for application-specific: teleradiology, phone triage, telerehabilitation, teledermatology, telelearning, teleophthalmology, tele-emergency medicine, and telecardiology; for application non-specific: diagnostic imaging (DICOM), health messaging (HL7), videoconferencing (H.320, H.323, H.324, T.120) and point of care connectivity (POCT1-A). Although there appears to be many guidelines and standards already developed for telehealth technology, teleradiology is the only one that is fully developed. Application-specific standards specifying security, diagnostic quality, safety, acceptability, interoperability, reliability and scalability requirements are needed for all telehealth applications.

Standards and guidelines are being developed in both Canada and the U.S. and the following organizations are active in standard and guideline development: American Accreditation Healthcare Commission (URAC); Telehealth Task Force; Canadian Association of Radiologists; College of Physicians and Surgeons of Alberta; American College of Radiology; Society of American Gastrointestinal Endoscopic Surgeons; American Telemedicine Association; Institute of Electrical and Electronic Engineers (IEEE); NCCLS; Federal Communications Commission; International Telecommunications Union; Health Level 7; American College of Radiology-National Electrical Manufacturer's Association; Alberta Research Council; the U.S. Office for the Advancement of Telehealth; and the International Standards Organization (ISO).

What needs to be considered:

- Although there appears to be many guidelines and standards already developed for telehealth technology, teleradiology is the only one that is fully developed. Application-specific standards specifying security, diagnostic quality, safety, acceptability, interoperability, reliability and scalability requirements are needed for all telehealth applications.

The environmental scan indicated that although there appears to be many guidelines and standards already developed for telehealth technology, teleradiology is the only one that is fully developed. Application-specific standards specifying security, diagnostic quality, safety, acceptability, interoperability, reliability and scalability requirements are needed for all telehealth applications.

Guiding Principles:

- Standards and guidelines for telehealth equipment and technology contribute to the overall quality of telehealth service delivery.

Suggested Guidelines:

TE-17 Organizations providing telehealth services follow existing applicable guidelines and standards, whenever possible.

Recommendations:

It is recommended that:

- National comprehensive application-specific standards and guidelines for telehealth equipment be developed with input from industry and health providers/users.
- A national “clearing house” be set up for standards and guidelines applicable to telehealth technology and equipment.



Appendix A

Appendix A

Glossary of Terms

Acceptability: A state or condition of meeting minimum standards for use, as applied to methods, equipment, or consumable products (McGraw-Hill, 1989).

Accreditation: A process that organizations use to evaluate their services and to better the quality of their services. Accreditation also provides recognition that an organization's services are meeting national standards of quality (Canadian Council on Health Services Accreditation, 2001).

Clinical Practice Guidelines: Systematically developed statements to help practitioners and patients make decisions about appropriate health care for specific clinical circumstances (Woolf, Grol, et al., 1999).

Competency: The specific knowledge, skills, judgement and personal attributes required to practice safely and ethically in a designated role and setting (Canadian Nurses Association, 1997).

Confidentiality: Information to be kept private is safeguarded, with guaranteed limits on the use and distribution of information collected from individuals (Canadian Council on Health Services Accreditation, 2001). The duty to ensure that information is accessible only to authorized persons (Canadian Institute for Health Information, 2002).

Conformance: Conformance to standards refers to the ability of a system to perform a set of functions according to well-defined specifications that are defined within a standard (Canadian Society for Telehealth, 2001).

Consent: See Informed Consent.

Continuity: The provision of unbroken services that are coordinated within and across programs and organizations, as well as during the transition between levels of services, across the continuum and over time (Canadian Council on Health Services Accreditation, 2001).

Continuum: An integrated seamless system of settings, services, service providers, and service levels to meet the needs of clients or defined populations. Elements of the continuum are: self-care and service, continuing care and service, rehabilitation and support (Canadian Council on Health Services Accreditation, 2001).

Diagnostic quality: Encompasses both of the terms efficacy and effectiveness, which are related.

Duty of Care: In the legal context, duty of care is defined as duty (in law) an obligation owed by one party to another (Anderson, 1998). In the health care context, duty of care refers to when a health care professional owes a duty of care to the patient/client, which essentially reduces itself to the question of whether there was a health care professional-patient relationship (adapted from Neima and Flood, 1999).

Effectiveness: The accuracy or the therapeutic effectiveness of the modality in question under actual field conditions (Perednia, 1996).

Efficacy: The inherent ability of the technology to transmit medically important data so that a correct diagnosis can be made and appropriate treatments instituted and is proven in the "lab" with a gold standard (Perednia, 1996).

E-health: A consumer-centred model of health care where stakeholders collaborate, utilizing information/communication technologies, including Internet technologies to manage health, arrange, deliver and account for care and manage the health care system.

Electronic Health Record: An Electronic Health Record (EHR) provides each individual in Canada with a secure and private lifetime record of their key health history and care within the health system. The record is available electronically to authorized health care providers and the individual anywhere, anytime in support of high quality care (Canada Health Infoway, 2002).

Ethics: Standards of conduct that are morally correct (Canadian Council on Health Services Accreditation, 2001).

Evaluation: Determining significance or worth, usually by careful appraisal or study (Merriam-Webster, 2003).

Expected outcomes: Describes in concrete, specific, measurable and realistic terms what the desired results of the project are.

Fee-for-service: Charging a fee for each service performed.

Governance: The function of determining the organization's direction, setting objectives and developing policy to guide the organization in achieving its mission (Canadian Council on Health Services Accreditation, 2001).

Guideline: A statement of policy or procedures by which to determine a course of action, or give guidance for setting standards (adapted from Loane & Wootton, 2002)).

Human Resources: The personnel requirements of an organization. May include staff, volunteers, and independent practitioners (Canadian Council on Health Services Accreditation, 2001).

Human Resource plans: A plan that is designed to anticipate and respond to current and future human resource needs of an organization (Canadian Council on Health Services Accreditation, p.HR1).

Indicator: A tool to measure quality of service in order to make continuous improvement. An indicator is rate-based or defined as an event (Canadian Council on Health Services Accreditation, 2002).

Informed consent: Voluntary permission given by a subject or guardian for participation in a study or investigation, or for health care, after having been informed of the purpose, methods, procedures, benefits and risks (Dorland, 2000) and is the primary means of protecting a patient's right to control his or her medical treatment (Dykeman, 2000). In non-emergency situations, five conditions must be present in order for consent to be valid: the patient/client providing the consent must be capable, the consent must be related to the treatment, it must be informed, it must be given voluntarily, and it must not be obtained through misrepresentation or fraud (College of Physicians and Surgeons of Ontario, 2001). Types of consent include:

- Expressed consent: where the individual provides explicit signification that they have granted it (may be in writing or verbal); and
- Implied consent: Circumstances in which an individual's action reasonably causes another party to interpret consent as having been granted.

Interoperability: Interoperability refers to the ability of two or more systems* to interact with one another and exchange information in order to achieve predictable results (*refers to more than technical systems) (Bergman, Ulmer and Sargious, 2001). There are three types of interoperability: human/operational; clinical; and technical (Canadian Society for Telehealth, 2001). Interoperability refers to the ability of two or more systems (computers, communication devices, networks, software, and other information technology components) to interact with one another and exchange data according to a prescribed method in order to achieve predictable results (ISO ITC-215).

Liability: The state of being legally obligated, responsible (American Heritage Dictionary, 2002)

Licensure: The formal process by which an official agency grants an individual the legal right to practise an occupation (Pong and Hogenbirk, 1999).

National Initiative for Telehealth (NIFTE) Framework of Guidelines: A structured set of statements designed to assist individuals and organizations in the development of policy, procedures, guidelines and/or standards.

Outcomes: Changes in health status, or the consequence of a service (results) (Canadian Council on Health Services Accreditation, 2001).

Organizations providing telehealth services: Refers to the various types of organizations involved in the delivery of telehealth services such as telehealth networks, health care facilities, call-centres, and health professionals working in solo office practices.

Performance indicators: Measurements that are used to monitor progress, make necessary adjustments, and measure the success of the project against the expected outcomes.

Personal Health Information: Any information in any form - electronic, written, verbal, etc. - about an identifiable person. This includes information that is specifically health related as well as information that is not always considered directly related to a person's health, such as his or her name address, telephone number, or health insurance number. It also includes genetic information and blood and tissue samples (Canada's Health Infomatics Association (COACH), 2001).

Planning readiness: Involves organizations being able to demonstrate that the organizational leadership has done their up-front work in terms of planning for the implementation and sustainability of telehealth.

Position Descriptions: A description for each post of employment that: reflects current practice; clearly defines roles and responsibilities; includes a position summary; states the nature and scope of the work; and specifies qualifications and reporting relationships (adapted Canadian Council on Health Services Accreditation, 2001).

Privacy: The right of an individual to control the collection, use and disclosure of personal health information about himself or herself (Canadian Institute for Health Information, 2002).

Privileging: Institutional policies and procedures that determine whether a health practitioner has the qualifications to be employed or be granted privilege to practise. May also be known as credentialing (Pong and Hogenbirk, 1999).

Qualified Staff: Those staff having the credentials and competence to perform specific acts by being professionally and legally prepared, and by being legally authorized. This may include registration, certification, licensure, or other formal approval; and training or experience in proportion with the assigned responsibilities (adapted Canadian Council on Health Services Accreditation, 2001).

Quality Assurance: The systematic monitoring and evaluation of various aspects of a project, service, or facility to ensure that standards of quality are being met (Merriam-Webster, 2003).

Quality Improvement: Organizational philosophy that seeks to meet clients' needs and exceed their expectations using a structured process that selectively identifies and improves all aspects of service (Canadian Council on Health Services Accreditation, 2001).

Record: A collection of information about a client's life and health history, needs, interventions, by providers, and results. Information may be in audio, video, digital or photograph form. Also known as health record, client file, or file (adapted Canadian Council on Health Services Accreditation, 2001).

Reliability: The ability of a system or component to perform its required functions under stated conditions for a specified period of time (Institute of Electrical and Electronics Engineers, 1990). Reliability of telemedicine equipment can be measured by process indicators such as hours booked versus hours actually used (Perednia, 1996).

Requirements: Interoperability requirements are developed to define the level of interoperability to which different vendors or suppliers of Telehealth equipment must communicate and exchange health related information (Canadian Society for Telehealth, 2001).

Risk Management: A management system or process designed to minimize chance or possibility of danger, loss or injury (Adapted Canadian Council on Health Services Accreditation, 2001).

Safety: The condition of being safe from undergoing or causing hurt, injury, or loss (Merriam-Websters, 2003).

Scalability: The ability of a computer application or product (hardware or software) to continue to function well as it (or its context) is changed in size or volume in order to meet a user need (Search 390.techtarget.com, 2002).

Security: The protection of personal health information from unauthorized or unintentional loss, theft, access, use, modification, or disclosure (Canadian Institute for Health Information, 2002). Security involves the protection of computer hardware and software from accidental or malicious access, use, modification, destruction, or disclosure. Security also pertains to personnel, data, communications, and the physical protection of computer installations (Institute of Electrical and Electronic Engineers Standard Dictionary of Electrical and Electronics Terms, 1984.)

Standard: A statement established by consensus or authority, that provides a benchmark for measuring quality and that is aimed at achieving optimal results (NIFTE Research Consortium, 2003). Documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions of characteristics to ensure that materials, products, processes and services are fit for the purpose (International Standards Organization).

Technical Readiness: Refers to the technical requirements and technical feasibility of providing telehealth services.

Telehealth: The use of information and communications technology to deliver health and healthcare services and information over large and small distances (Picot, 1998). The use of advanced telecommunications technologies to exchange health information and provide health care services across the geographic, time, social and cultural barriers (Canadian Society for Telehealth, 2001).

Teletriage: A means of providing health information and advice on preferred courses of treatment, usually over the telephone, using computerized protocols or algorithms developed by clinical experts.

Workplace Environment Readiness: Refers to an organization's readiness or ability to implement new telehealth services.



Appendix B

Appendix B

List of Acronyms

ACAHO	Association of Canadian Academic Healthcare Organizations
ACHI	Advisory Committee on Health Infostructure
ACHS	Advisory Committee on Health Services
ACHHR	Advisory Committee on Health Human Resources
ACMC	Association of Canadian Medical Colleges
ACOTRO	Association of Canadian Occupational Therapy Regulatory Organizations
ARC	Alberta Research Council
CANARIE	Canadian Network for the Advancement of Research/Industry and Education
CAPR	Canadian Alliance of Physiotherapy Regulators
CCHSA	Canadian Council on Health Services Accreditation
CAOT	Canadian Association of Occupational Therapists
CCHSE	Canadian College of Health Service Executives
CFPC	College of Family Physicians of Canada
CHA	Canadian Healthcare Association
CHIPP	Canada Health Infostructure Partnerships Program
CCHOTA	Canadian Coordinating Office for Health Technology Assessment
CIHI	Canadian Institute for Health Information
CIHR	Canadian Institute of Health Research
CLSC	Centre Local de Service Communautaires
CMA	Canadian Medical Association
CMPA	Canadian Medical Protective Association
CNA	Canadian Nurses Association
CNPS	Canadian Nurses Protective Society
COACH	Canada's Health Informatics Association
CPA	Canadian Psychological Association
CPNA	Canadian Practical Nurses Association
CRTC	Canadian Radio-television and Telecommunications Commission
CSA	Canadian Standards Association
CSIAC	CHIPP Standards and Interoperability Advisory Committee
CST	Canadian Society of Telehealth
DC	Dietitians of Canada
DICOM	Diagnostic Imaging and Communications in Medicine (NEMA/RSNA)
EHR	Electronic Health Record
EHRTWG	Electronic Health Record Telehealth Working Group
FMRAC	Federation of Medical Regulatory Authorities of Canada (formerly FMLAC)
FOIP	Freedom of Information and Protection of Privacy
FPT-TWG	Federal/Provincial/Territorial Telehealth Working Group
HEAL	Health Action Lobby
HIA	Health Information Atlantic
HRDC	Human Resources and Development Canada
ICEIS	Industry Canada's Electromagnetic Interference Standard
ICN	International Council of Nurses
IEEE	Institute of Electrical and Electronic Engineers
IHAB	Industry Canada Highway Application Branch
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISO	International Standards Organization
ITU	International Telecommunications Union
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
NAPRA	National Association of Pharmacists Regulating Authorities
NEMA	National Electrical Manufacturers Association

NIFTE	National Initiative for Telehealth Guidelines
NORA	Network of Regulatory Agencies
NRC	National Research Council
OHIH	Office of Health and the Information Highway (Health Canada)
POTS	plain old telephone system
PIPEDA	Personal Information Protection and Electronic Documents Act
PKI	Public Key Infrastructure
R&D	research and development
RCPSC	Royal College of Physicians and Surgeons of Canada
RFP	Request for Proposal
RISQ	Le Réseau d'informations scientifiques du Québec
RSNA	Radiological Society of North America
SRPC	Society of Rural Physicians of Canada
TOD	Telehealth Outcomes Development
WHIC	Western Health Information Collaborative
WHO	World Health Organization
WMA	World Medical Association



Appendix C

Appendix C

Members of Steering and Advisory Committees and the Research Consortium

Members of the Steering Committee

Organization	Name/Position
Co-Chair Canadian Council of Health Service Executives (CCHSE)	Sandra MacDonald-Rencz Vice President Canadian Council of Health Service Executives
Co-Chair The Keston Group Consulting Inc	Dr. Trevor Craddock President The Keston Group Consulting Inc
Canadian Council on Health Services Accreditation (CCHSA)	Cindy Milito Director Corporate Planning & Representation Canadian Council on Health Services Accreditation
Canadian Institute for Health Information (CIHI)	Caroline Heick Director, Standards Canadian Institute for Health Information
Clinidata Corporation	Lois Scott Executive Vice-President & General Manager Clinidata Corporation
Health Canada Office of Health and the Information Highway	Michel Léger Executive Director Policy Division Office of Health and the Information Highway
The Richard Ivey Foundation (RIF)	Maureen Quigley Health Strategies Facilitator and Advisor Maureen Quigley and Associates Inc. Bruce Lourie Executive Director The Richard Ivey Foundation
Laurentian University Centre for Rural and Northern Health Research; NIFTE Research Consortium Coordinator	Dr. Raymond Pong Research Director Centre for Rural and Northern Health Research Laurentian University

Members of the Advisory Committee

Professional/Regulatory Association or Provider Organization Represented	Name/Position
Association of Canadian Academic Healthcare Organizations (ACAHO)	Glenn Brimacombe Chief Executive Officer Association of Canadian Academic Healthcare Organizations
Association of Canadian Occupational Therapy Regulatory Organizations (ACOTRO)	Kathy Corbett Registrar College of Occupational Therapists of British Columbia (COTBC)
Canadian Alliance of Physiotherapy Regulators (CAPR)	Jan Robinson Registrar College of Physiotherapy of Ontario
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Canadian Psychological Association (CPA)	John Service Executive Director Canadian Psychological Association
Canadian Practical Nurses Association (CPNA)	Verna Holgate Executive Director College of Licensed Practical Nurses of Manitoba
Canadian Society of Telehealth (CST)	Mr. Wayne Bell Chief Executive Officer The Digital Group of Telehealth Companies Digital Image FX Inc. – ARTIC Lab – Digital Telehealth Inc.

Professional/Regulatory Association or Provider Organization Represented	Name/Position
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University of Calgary	Dr. Penny Jennett Professor, Faculty of Medicine Head-Health Telematics Program

Professional/Regulatory Association or Provider Organization Represented	Name/Position
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Alberta Research Council	Pam Brockway Health Researcher/Project Manager Alberta Research Council

Members of the Research Consortium

Site and Research Focus	Name/Address	Area of Interest
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	John C. Hogenbirk Senior Researcher	
	Kerry Byrne Researcher	
	Linda Liboiron-Grenier Research Assistant	
University of Calgary	Dr. Penny Jennett Professor, Faculty of Medicine Head-Health Telematics Program	Organizational Readiness and Leadership
	Dr. Maryann Yeo Research Associate Health Telematics Unit Faculty of Medicine	
Dalhousie University	Dr. John Finley Professor, Pediatrics Dalhousie University Clinical Director Dalhousie Telehealth	Clinical Standards and Outcomes
	Dr. Dan Reid Primary Care Physician Dalhousie Telehealth	



Site and Research Focus	Name/Address	Area of Interest
Dalhousie University	Claudine Szpilfogel Research and Health Consultant Research Power Inc.	Clinical Standards and Outcomes
	Stephanie Heath Research and Health Consultant Research Power Inc.	
Alberta Research Council	Pam Brockway Health Researcher/ Project Manager Alberta Research Council	Technology and Equipment



Appendix D

Appendix D

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Appendix E

Appendix E

Recommendations

This Appendix includes a listing of all "recommendations" included in the National Initiative for Telehealth Framework of Guidelines and is intended as a quick reference for the reader. Each of the Recommendations listed is also included in the relevant section by topic, along with the other sections of the Framework such as **What We Learned**, **What Needs to be Considered**, **Guiding Principles**, and **Suggested Guidelines**.

Clinical Standards and Outcomes

Communication with Patients/Clients

It is recommended that:

- The “core” competencies required for effective telehealth communication should be identified.
- Further research and evaluation of the nature and content of the communication process in telehealth be undertaken to have a better understanding of the interpersonal dynamics associated with telehealth and its effects on health care outcomes.
- Organizations providing telehealth services include evaluation of the effectiveness of telehealth communications in their quality improvement activities.

Standards of Practice/Quality of Clinical Care

It is recommended that:

- Each health profession examine how telehealth impacts and/or changes its nature, scope and pattern of service delivery and how this may require modifications of existing practice guidelines.
- National bodies disseminate prototype national general telehealth guidelines addressing protocols and procedures related to: informed consent; privacy and confidentiality; documentation; ownership of patient/client record; and appropriate video/telephone behaviours. These general telehealth guidelines be developed and implemented in a “systematic approach” enabling national coordination and local ownership.

Clinical Outcomes

It is recommended that:

- Funding be made available to facilitate the comprehensive evaluation of clinical practice and health care outcomes in the telehealth setting.
- Research organizations, researchers and professional organizations assist solo or small groups of practitioners in the collection, evaluation and reporting of health outcome data for telehealth.

Informed Consent

It is recommended that:

- Organizations providing telehealth services continue to engage risk management teams and legal counsel in the process of determining appropriate consent policy.
- A process be put in place to develop national consensus on the consent process in telehealth that would lay the foundation and provide consistency, especially for cross-jurisdictional telehealth.

Human Resources

Human Resource Plans and Policies

It is recommended that:

- Organizations providing telehealth in addition to other services:
 - identify and update existing human resource policies requiring revision to accommodate telehealth concerns related to patient/client safety and quality of health care delivery;
 - create new human resource policies needed for the safe provision of quality telehealth services; and
 - consider telehealth services during the next scheduled revision/update of the human resource plan or policy for all remaining (less urgent) telehealth human resource concerns.
- The ramifications of telehealth on the overall health work force be monitored.

Roles and Responsibilities

It is recommended that:

- A national body develop a common description of telehealth duties that can be shared among telehealth organizations as a baseline description of telehealth-specific roles and responsibilities.

Licensure and Related Issues

It is recommended that:

- Until the issue of cross- jurisdictional licensure is resolved, the following strategies are suggested:
 - regulatory/licensing bodies in individual jurisdictions in Canada enter into bi-jurisdictional or multi-jurisdictional agreements to permit the provision and/or receipt of telehealth services; and
 - professional regulatory/licensing bodies consider utilizing temporary licensure mechanisms for health professionals providing telehealth services, where available and applicable.
- A process be established to explore the feasibility of a pan-Canadian accommodation mechanism or approach to facilitate cross-jurisdictional licensure that is acceptable to and administered by the individual health professional regulatory/licensing bodies in each jurisdiction.
- Any new licensure requirements relating to telehealth should not be considered in isolation of current standards or practice and should be implemented after consultation with health professionals practicing in both traditional and telehealth environments.
- Privileging should be guided by the same principles and resolved in a similar manner to licensure.
- When services become international in scope, federal and provincial governments/Ministries of Health must work with complimentary international authorities to negotiate necessary international agreements to support regulatory processes important for public protection and accountability (see Section 6.2.6).

Competency and Qualifications

It is recommended that:

- Each health profession individually explore the need for and feasibility of a pan-Canadian set of qualifications and competencies specific to telehealth for their profession.
- A national body explore the development of a minimum set of qualifications and competencies for persons responsible for coordinating telehealth programs (i.e. telehealth coordinators).

Education, Orientation and Training

It is recommended that:

- Organizations offering telehealth services should be encouraged to exchange materials related to telehealth orientation and training.
- A national body summarize the key elements of a telehealth orientation and training process as a resource. An initial listing of orientation and training elements could build on those elements compiled during the NIFTE environmental scan and found in Table 4.1 of this document. The report on the National Telehealth Coordinators Workshop 2002 (CST Education Committee, 2002) would also be helpful in this activity.
- Consideration be given to evolving in-house orientation and on-the-job training elements into national, standardized, certificate-level training opportunities.
- Professional organizations explore the need for development of telehealth-related orientation and training specific to their professions.
- Professional organizations explore the need to move some orientation and training elements into the core curriculum of health care professionals - elements such as increased exposure to computers, telecommunications technology, electronic health records, and virtual patients/clients. Individual professional organizations consider working collaboratively with other professional groups on overlapping issues related to telehealth training and orientation.

Reimbursement

It is recommended that:

- Federal/provincial/territorial jurisdictions be encouraged to resolve any outstanding reimbursement issues within their own jurisdictions.
- Compensation be considered for health professionals, whether they are publicly or privately funded, to participate in telehealth services and networks.

Organizational Readiness

Health System Readiness

It is recommended that:

- Telehealth policies, guidelines and procedures related to the required infrastructures, funding, remuneration, support for innovation and the diffusion process be developed at the federal/provincial/territorial levels.

Organizational Leadership

Organizational Leadership Overarching Issues

It is recommended that:

- Organizations providing telehealth, in addition to other services, review relevant policies, procedures, standards, and guidelines to determine if telehealth is covered and revise as necessary. New policies, procedures, standards and guidelines are developed in areas that are unique to telehealth and are not covered in existing documents.

Organizational Accountability

It is recommended that:

- Health professionals' bodies and organizations providing telehealth services should review existing codes of ethics to determine if they include telehealth-specific ethical considerations.

It is recommended that:

- Standards be developed for documentation and storage of patient/client telehealth records that are in keeping with the total electronic communication environment. These standards should include: who has custody of the record; who has responsibility for ensuring the patient/client is aware of who has taken on this role; who has access to the information; retention schedules for each type of information collected; how information is destroyed; and how temporary or transitory records should be treated.
- Until such standards are put in place, a record of the telehealth encounter be kept at each site when more than one organization is involved.

It is recommended that:

- Until policies are harmonized to facilitate a pan-Canadian approach, health care organizations should have interim policies and guidelines in place to deal with cross-jurisdictional telehealth services that are based on agreements reached between individual jurisdictions.
- Policies regarding cross-jurisdictional licensure and other accountability issues are dealt with at a pan-Canadian level by professional regulatory/licensing bodies (see Section 4.3).

It is recommended that:

- A national organization monitor federal/provincial/territorial and international policy-related activities on an ongoing basis and make this information available to the field.
- Extreme caution should be exercised before engaging in international telehealth activities until legal/regulatory issues are resolved.
- Federal and provincial governments/Ministries of Health work with complimentary international authorities to negotiate necessary international agreements to support the regulatory processes important for public protection and accountability.

Ensuring Quality Telehealth Services

It is recommended that:

- Research be undertaken to evaluate and provide a greater understanding of the implications of telehealth services in terms of quality, accessibility, safety and cost. The involvement of the Canadian Institutes of Health Research (CIHR) and the Canadian Institute for Health Information (CIHI), as well as the development of a common research agenda, would facilitate this work.
- Work be undertaken to standardize data collection tools and common measures and identify key indicators for telehealth applications.

Continuity

It is recommended that:

- An integrated telehealth delivery model be developed that positions telehealth as a strategic resource that enables organizations to continuously improve their capacity to deliver services and information across distances.

Technology and Equipment

Procurement Practices

It is recommended that:

- Development of a standardized process (federal/provincial/territorial) is explored to assist with determining the requirements for an RFP.

Safety

It is recommended that:

- Health Canada Medical Devices Branch and Canadian Standards Association consider developing and implementing national safety standards for telehealth equipment.

Security

It is recommended that:

- Organizations providing telehealth services review their existing policies and procedures to ensure physical and electronic security for telehealth services. New policies/procedures should be developed as required.

Diagnostic Quality

It is recommended that:

- National specialty bodies develop and implement application-specific guidelines and standards for diagnostic quality using telehealth technology and equipment.

Reliability

It is recommended that:

- National reliability standards and guidelines for telehealth technology and equipment be developed and implemented.

Interoperability

It is recommended that:

- The Canadian Institute for Health Information and Canada Health Infoway consider working collaboratively in the development and maintenance of national standards to support telehealth interoperability (i.e. standards for data architecture, exchange and repositories).
- The process to develop the standards to support telehealth interoperability involve telehealth providers (including solo practitioners and those in the private sector such as pharmacies) and vendors/telecommunications companies.
- Telehealth information exchange standards be compatible with health information systems (i.e., HL7-compliant, where applicable).
- An information repository providing information on the technical interoperability of specific equipment be developed to increase awareness and assist with equipment selection.

Scalability

It is recommended that:

- National Standards be developed to facilitate scalability of telehealth technology and equipment.

Current Technology Standards and Guidelines

It is recommended that:

- National comprehensive application-specific standards and guidelines for telehealth equipment be developed with input from industry and health providers/users.
- A national “clearing house” be set up for standards and guidelines applicable to telehealth technology and equipment.