

Telehealth: Summary of Evidence

Telehealth is the delivery of various types of health care when patient and provider are geographically separated — it can involve video conferencing, telephone calls, electronic data transmission, and other ways of communicating over the Internet. With many rural and remote areas in Canada, telehealth promises to bring health care to communities that are otherwise underserved. But how do these technologies and programs compare to standard care? Are the patients being well served? Is there evidence of telehealth's effectiveness? CADTH has produced a number of Rapid Response and other reports that attempt to answer these questions.

Topics covered in this tool:

CHRONIC DISEASES

LONG-TERM CARE SETTINGS

MATERNAL AND PEDIATRIC CARE

MENTAL HEALTH

MISCELLANEOUS

Telehealth for Chronic Diseases

Telehealth for Patients With Cardiovascular Disease: A Review of the Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary With Critical Appraisal (January 2016)

cadth.ca/telehealth-patients-cardiovascular-disease-review-clinical-effectiveness-cost-effectiveness-and-0

Technology: Studies included in this review looked at telehealth support for patients (e.g., telephone support and video conferencing), as well as electronic data transmission (e.g., sending blood pressure readings taken at home to a health care provider). For those patients with implanted cardiac devices, studies examined the use of electronic equipment to observe and record physiological processes while the patients carried out their daily lives.

Issue: Hypertension, coronary artery disease (CAD), and heart diseases managed with implanted devices are conditions that require ongoing monitoring and patient care. Telehealth technologies may help provide this care, but evidence is needed to determine its clinical effectiveness and cost-effectiveness.

Key Findings:

- For hypertension, telehealth monitoring was found to reduce blood pressure. It costs more than usual care, but those costs might be offset by the patient benefits.
- For CAD, telehealth did not appear to be inferior to usual care in centres, and telephone support may reduce hospitalizations and risk factors for heart disease. No cost-effectiveness evidence was identified for CAD.
- For patients with pacemakers, telehealth enabled earlier detection of cardiovascular events, reduced hospitalizations, and was less expensive than hospital monitoring.
- For patients with implanted cardioverter-defibrillators, telehealth led to similar outcomes and was less expensive than in-office follow-up.
- A position paper by the Canadian Cardiovascular Society and the Canadian Heart Rhythm Society recommends that remote monitoring be available as an integral standard of care at clinics where patients with implanted electronic cardiac devices go for follow-up.
- Telehealth is still not widely accepted; patients and clinicians noted concerns about telehealth causing social isolation, reducing staff autonomy, and adding to workload, among other concerns.

Telehealth for Patients With Heart Failure: A Review of the Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary With Critical Appraisal (December 2015)

cadth.ca/telehealth-patients-cardiac-care-review-clinical-effectiveness-cost-effectiveness-and-guidelines-0

Technology: Studies included in this review looked at telemonitoring using various transmission methods (Internet, telephone, mobile phone, video conferencing) to transmit physiological data from the patient to the health care professional. The studies also looked at structured telephone support such as Health Lines (nurses available on the telephone to provide suggestions). One study evaluated the Health Buddy telemonitoring device, which is connected to a telephone line.

Issue: The management of heart failure requires continuous care, and it extends to professional services delivered to the patient's home through some form of telehealth technology. To best implement this technology, current clinical and cost-effectiveness evidence is needed on telehealth interventions for patients with heart failure.

Key Findings:

- The review found that, in general, using telehealth such as structured telephone support or home telemonitoring reduced hospitalizations and mortality, and it improved quality of life and lifestyle behaviour.
- Evidence on cost-effectiveness was limited and inconsistent. In Canada, using a Health Lines intervention may be more cost-effective than usual care.
- No evidence-based guidelines were identified.

Telehealth for the Assessment and Follow-up of Patients Requiring Cardiac Care: A Review of the Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary With Critical Appraisal (June 2015)

cadth.ca/telehealth-assessment-and-follow-patients-requiring-cardiac-care-review-clinical-effectiveness-cost

Technology: The review examined telehealth in the form of a video conference consultation with a cardiologist, internist, general practitioner, or surgeon for patients requiring cardiac care.

Issue: Chronic cardiovascular diseases are a significant burden to patients and the Canadian health care system. Telehealth may help with assessment and follow-up of patients with cardiovascular diseases (stroke, heart failure, hypertension, or angina), but there is uncertainty regarding its clinical effectiveness and cost-effectiveness.

Key Findings:

- No information was identified on the effect of teleconsultation on clinical outcomes or harms for any of the four cardiovascular indications.
- One non-blinded randomized controlled trial reported better time to diagnosis of heart failure with telehealth (median of 27 days versus 114 days with standard care).
- Two small studies compared telehealth to standard care. They did not measure patient outcomes, but they reported similar diagnostic accuracy and similar reductions to cardiac risk scores with telehealth programs.
- An economic study was identified, but it was based in Sweden and may have limited applicability in Canada. It suggested an increased cost to the health care system from teleconsultation, associated with purchase and maintenance of equipment, but cost savings to patients and society.
- No evidence-based guidelines were identified.

Technologies Assisting in Remote Consultations for the Diagnosis of Stroke: A Review of the Clinical Evidence

Summary With Critical Appraisal (November 2013)

cadth.ca/technologies-assisting-remote-consultations-diagnosis-stroke-review-clinical-evidence

Technology: In most of the studies, telemedicine was defined as two-way video conferencing or a combination of telephone and image transfer. Some studies also examined telephone communication without the transfer of images. Experts at stroke centres communicated with physicians at rural and remote areas to guide treatment decisions.

Issue: Rapid stroke diagnosis is essential for administering thrombolytic (“clot-busting”) drugs within three hours of symptom onset. As most stroke experts are located in major centres, patients in rural or remote areas are less likely to receive thrombolytic drugs unless remote physicians can consult the experts in a timely manner.

Key Findings:

- Most studies reported an increase in thrombolysis treatment following the introduction of telemedicine programs (with or without video or image transfer).
- Telemedicine technologies that allow for video conferencing or image transfer may improve diagnostic accuracy.
- Important outcomes such as time to treatment, mortality, and functional outcomes were not significantly different when comparing telemedicine with treatment at an academic stroke centre.
- The authors conclude that telemedicine is likely a legitimate option to guide treatment decisions for ischemic stroke, including the administration of thrombolytic drugs, without compromising safety.
- The majority of the data in the review came from non-randomized or non-blinded studies, so results should be interpreted with caution.

Non-Emergency Telecardiology Consultation Services: Rapid Review of Clinical and Cost Outcomes

Health Technology Assessment (October 2010)

cadth.ca/non-emergency-telecardiology-consultation-services-rapid-review-clinical-and-cost-outcomes-0

Technology: The review focused on non-emergency telecardiology, which is telehealth for cardiovascular disease assessment and treatment. Diagnostic examination data such as echocardiograms, electrocardiograms, or heart and lung sounds can be digitized and forwarded to a specialist or evaluated in real time.

Issue: Patients living in communities without cardiovascular specialists need to travel to obtain care. Telecardiology programs may provide faster access to services and reduce the need for travel, but there is uncertainty about their clinical effectiveness and economic impacts.

Key Findings:

- Low-quality studies showed that abnormal heart and lung sounds may be identified remotely with a similar level of accuracy to in-person examinations.
- One small Canadian study reported that telehealth can result in similar reductions to cardiac risk scores as compared with attending a cardiovascular risk reduction clinic.
- Because of the limitations of the evidence, no firm conclusions can be made about diagnostic accuracy or impact on patient outcomes.
- European studies showed similar or reduced costs with telecardiology programs compared with standard care, but these findings might have limited generalizability to Canada. Higher volumes of patients participating in the programs reduced the per-patient cost of the telemedicine equipment.

Telehealth for Acute Stroke Management (Telestroke): Systematic Review of Analytic Studies and Environmental Scan of Relevant Initiatives Health Technology Assessment (January 2008)

cadth.ca/telehealth-acute-stroke-management-telestroke-systematic-review-analytic-studies-0

Technology: The review looked at any modality of telehealth for the purposes of assessing, treating, or rehabilitating stroke patients. This type of telehealth is often referred to as telestroke.

Issue: There is uncertainty about how telestroke programs can be optimally delivered. There have been several original studies evaluating telestroke services, but no systematic effort to summarize them.

Key Findings:

- The review found that telestroke improved access to therapy; in particular, to thrombolysis treatment. Although most studies had poor methodological quality, they showed improved health outcomes at three and six months post-stroke.
- Two studies assessed patient satisfaction and documented high levels of acceptability.
- Uncertainty remains regarding cost-effectiveness, safety, and using telestroke in the rehabilitation of post-stroke survivors.
- At the time the Environmental Scan was conducted, 15 organizations (two in Canada) were providing telestroke services.
- A lack of standardized reporting makes it difficult to compare programs or determine best practices.

Tele-ophthalmology for Detecting Eye Diseases: Clinical and Cost-Effectiveness

Summary With Critical Appraisal (December 2008)

cadth.ca/tele-ophthalmology-detecting-eye-diseases-clinical-and-cost-effectiveness

Technology: In general, the equipment required in tele-ophthalmology consists of hardware for retinal image acquisition (including computers and cameras); systems for image transmission, storage, and retrieval; and software applications for image analysis and clinical workflow management.

Issue: Detection of eye diseases is important to slow their progression and prevent blindness. Tests are usually performed by an optometrist or ophthalmologist, but access may be limited in rural and remote areas.

Key Findings:

- Most studies focused on diabetic retinopathy.
- Tele-ophthalmology provided acceptable diagnostic accuracy as a screening tool for detecting diabetic retinopathy and age-related macular degeneration.
- There was no evidence for effect on clinically relevant outcomes such as reduction in vision loss.
- Most patients felt it was more convenient for them to take a tele-ophthalmologic exam than meet face to face with an ophthalmologist. Tele-ophthalmology also improved adherence to follow-up exams.
- Several studies found tele-ophthalmology to be cost-effective in specific settings, but these results might not apply in all situations.

Home Telehealth for Chronic Disease Management

Health Technology Assessment (December 2008)

cadth.ca/home-telehealth-chronic-disease-management-0

Technology: In this review, home telehealth included home telemonitoring and telephone support. These technologies involve transmission of data and audio or video monitoring, as well as telephone advice, education, and follow-up by a health care provider.

Issue: Home telehealth could provide health care services to patients with chronic conditions (e.g., diabetes, heart failure, chronic obstructive pulmonary disease) who have limited access to services. The clinical benefit and cost-effectiveness of home telehealth compared with usual care is unknown.

Key Findings:

- Overall, the studies found that home telehealth is effective and can reduce health resource use for patients with chronic conditions.
- The economic review reported that home telehealth is cost-saving from a health system perspective, but the overall quality of the original research was low. Most of the economic studies were conducted outside of Canada.
- Ethical, legal, and psychosocial issues were examined and some barriers to implementation were identified, including concerns about patient privacy, liability, medicalization of the home environment, reliability of the technology, and a lack of unique patient identifiers for electronic records.
- The review concluded that home telehealth is a useful addition to Canadian health care delivery.

Telecare Programs for Chronic Obstructive Pulmonary Disease, Asthma, and Hypertension: Clinical Effectiveness and Guidelines

Summary of Abstracts (May 2011)

cadth.ca/telecare-programs-chronic-obstructive-pulmonary-disease-asthma-and-hypertension-clinical

Technology: Telecare programs were examined for their effectiveness in managing chronic obstructive pulmonary disease (COPD), asthma, and hypertension. The telecare interventions were varied among studies.

Issue: There is uncertainty regarding the clinical effectiveness of telecare programs for these conditions.

Key Findings:

- The results regarding telecare for COPD were mixed.
- For patients with asthma, telecare did not result in significant improvements or changes to health-related quality of life.
- The results regarding telecare for hypertension were also mixed, but overall, telecare programs appear to be effective – most studies reported greater reductions in blood pressure in patients in the telemonitoring groups.
- One guideline was identified that recommends adults and children with asthma be monitored by routine clinical review at least once a year. Routine review by telephone may be considered, and Web-based programs may help with medication compliance.

Telehealth in Long-Term Care Settings

Telemedicine Consultations for Patients in Long-Term Care: A Review of Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary With Critical Appraisal (October 2015)

cadth.ca/telemedicine-consultations-patientslong-term-care

Technology: The studies looked at telehealth administered through video conferencing to residents of long-term care facilities.

Issue: The number of seniors who are unable to care for themselves is growing. As the demand for health care increases in this population, there may be increased demands and pressures on long-term care facilities. Telehealth within long-term care facilities might help meet those demands, but evidence is needed.

Key Findings:

- There is some evidence that video conferencing is reliable and effective in achieving glycemic control in elderly long-term care residents with diabetes.
- Telehealth was also effective in providing health care services in the areas of general medicine, geriatrics, psychiatry, and neurology in long-term care facilities.
- Telehealth in long-term care facilities increased the number of patients reviewed while reducing travel time for patient and provider.
- Telehealth consultations with pharmacists led to reduced medication duplications and improved medication safety.
- Studies reported high acceptance and satisfaction rates among physicians, nursing home residents, and staff.

Emergency Telehealth for Urgent Conditions in Long-Term Care Facilities: Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary of Abstracts (May 2015)

cadth.ca/emergency-telehealth-urgent-conditions-long-term-care-facilities-clinical-effectiveness-cost

Technology: The review searched for evidence on using telehealth in emergency situations at long-term care facilities.

Issue: It has been speculated that telehealth could help with the delivery of emergency services to residents in long-term care facilities.

Key Findings:

- No relevant literature was identified on this topic.

Telehealth for Maternal and Pediatric Care

Telehealth for Speech and Language Pathology: A Review of Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary With Critical Appraisal (April 2015)

cadth.ca/telehealth-speech-and-language-pathology-review-clinical-effectiveness-cost-effectiveness-and

Technology: The studies included in the review used computer-based video conferencing.

Issue: Difficulties in speech and language development are frequently reported among children. This review was conducted to determine the clinical effectiveness and cost-effectiveness of using telehealth for speech-language pathology treatment.

Key Findings:

- Two randomized controlled trials suggest that speech-language pathology treatment, delivered via video conferencing or in person, was effective for children. No significant differences in assessments were found between the two delivery models, and the authors concluded that both models helped improved children's speech sound productions.
- These findings must be interpreted with caution, given that the evidence was of low quality.
- No systematic reviews, economic evaluations, or guidelines were identified related to using telehealth in speech-language pathology.

School-Based Telerehabilitation: Clinical Effectiveness and Guidelines

Summary of Abstracts (September 2015)

cadth.ca/school-based-telerehabilitation

Technology: The study used two-way interactive video conferencing technology to deliver occupational therapy services to children with motor skill problems. Eight children underwent an assessment and six 30-minute therapy sessions.

Issue: It has been speculated that school-based telerehabilitation might help with issues in motor control, motor learning, or motor performance.

Key Findings:

- One non-randomized study found that school-based telerehabilitation resulted in improvements to handwriting in children.
- No guidelines were identified.

Telehealth for Autism Spectrum Disorder Diagnosis in Pediatric Patients: Diagnostic Accuracy, Cost-Effectiveness, and Guidelines

Summary of Abstracts (July 2015)

cadth.ca/telehealth-autism-spectrum-disorder-diagnosis-pediatric-patients-diagnostic-accuracy-cost

Technology: The technology studied in these reports was video conferencing. One study developed and tested an asynchronous system that consisted of a mobile phone-based application (NODA SmartCapture) that enables parents to record videos of their children's behaviour, and a Web portal (NODA Connect) giving the clinician access to the video, as well as developmental history.

Issue: There is uncertainty about whether telehealth can be used to diagnose autism spectrum disorder (ASD) in pediatric patients.

Key Findings:

- One randomized controlled trial (RCT) and three non-RCT studies were identified, and all of the studies indicated the usefulness and clinical utility of their tele-modes to obtain ASD diagnoses for children in remote or underserved regions.
- The telehealth systems were well-received by parents.

Telerehabilitation for Pediatric Patients With Traumatic Brain Injury: Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Summary of Abstracts (July 2015)

cadth.ca/telerehabilitation-pediatric-patients-traumatic-brain-injury-clinical-effectiveness-cost

Technology: The review searched for evidence on using telerehabilitation services (involving assessment and management of the condition).

Issue: It has been speculated that telehealth can help in rehabilitating children who have obtained a traumatic brain injury.

Key Findings:

- No relevant literature was identified regarding telerehabilitation for pediatric patients with traumatic brain injury.

Telehealth for Mental Health

Telehealth Services for the Treatment of Psychiatric Issues: Clinical Effectiveness, Safety, and Guidelines

Summary With Critical Appraisal (January 2015)

cadth.ca/telehealth-services-treatment-psychiatric-issues-clinical-effectiveness-safety-and-guidelines

Technology: In the included studies, telepsychiatry consisted of live, synchronous video conferencing or phone calls using standard telephones, with a few studies using some type of voice-recording technology and one study that used a written form of therapy via the Internet.

Issue: Although many studies and reviews have been published on telepsychiatry and telemental health care, the area of telemedicine is generally relatively new and still evolving, along with advancements in information and communication technology. To facilitate decision-making in health care, a summary of current guidelines and evidence on clinical effectiveness and safety of telepsychiatry services was needed.

Key Findings:

- Video conference–based telepsychiatry was effective and increased access to specialty mental health care in rural or remote areas.
- Factors influencing effectiveness include connectivity between sites, bandwidth, and resolution. Diagnostic assessment requires good bandwidth and resolution to identify non-verbal behaviours such as tics and dysmorphia.
- One systematic review found no safety concerns, while another found insufficient evidence to draw conclusions. The authors suggest that safety can be managed using exclusionary criteria when selecting patients and by using monitoring tools to identify patients with deteriorating symptoms.
- Guidelines recommend developing specific emergency procedures before providing telepsychiatric care.

Cognitive Behavioural Therapy for Patients With Addictions: A Review of the Clinical and Cost-Effectiveness

Summary With Critical Appraisal (February 2010)

cadth.ca/cognitive-behavioural-therapy-patients-with-addictions-review-clinical-and-cost-effectiveness

Technology: Cognitive behavioural therapy (CBT) is a structured, goal-directed form of psychotherapy, usually consisting of 10 to 20 one-hour sessions. Self-directed CBT can be done through a Web-based or stand-alone computer program while tele-therapy can be done through a telephone.

Issue: It is not clear how the clinical effectiveness and cost-effectiveness of self-directed CBT or tele-therapy compares with traditional CBT for the treatment of adults with alcohol, drug, or gambling addictions. A review of the evidence was needed.

Key Findings:

- The literature suggests that for alcohol, drug, and gambling addictions, computer or telephone-based CBT interventions may be a viable alternative or useful adjunct to conventional, face-to-face CBT therapy.
- More research is needed to determine the active components of treatments, such as duration and intensity of therapy, especially among adolescents.
- No cost-effectiveness studies or guidelines were identified.
- None of the studies were Canadian-based trials.

Cognitive Behavioural Therapy for Post-Traumatic Stress Disorder: A Review of the Clinical and Cost-Effectiveness

Summary With Critical Appraisal (January 2010)

cadth.ca/cognitive-behavioural-therapy-post-traumatic-stress-disorder-a-review-clinical-and-cost-effectiveness

Technology: The studies used video conferencing to deliver cognitive behavioural therapy (CBT). CBT is a form of psychotherapy that uses techniques to alter an individual's distressed emotions by changing his or her thoughts, beliefs, and behaviours. The purpose of therapy is to reduce distress or unwanted behaviour by undoing learned responses or by providing new, more adaptive learning experiences.

Issue: CBT for post-traumatic stress disorder may not be available in areas without access to psychotherapists trained in this technique. Self-directed CBT (for example, through a Web-based or stand-alone computer program) and tele-therapy CBT have been introduced to help improve access.

Key Findings:

- Limited evidence (based on two studies) suggests that the clinical effectiveness of CBT delivered via tele-therapy in group and one-on-one sessions is comparable to face-to-face delivery.
- Patient satisfaction was comparable between the two delivery modes.
- No conclusions can be made about the clinical effectiveness of self-directed CBT, the cost-effectiveness of CBT delivered via tele-therapy or in a self-directed manner, or about which patients are best suited to the alternate delivery formats, as no literature was identified.

Miscellaneous

Home Telehealth Programs in Canada

Environmental Scan (May 2008)

cadth.ca/home-telehealth-programs-canada

Technology: This report looked at all types of home telehealth technologies in use in Canada.

Issue: There is interest in identifying the home telehealth programs in existence across Canada. As hospital stays have shortened, demand for home care services has increased. Health care providers may deliver home care services by visiting a patient's home or by telehealth.

Key Findings:

- At the time of the report, six provinces had home telehealth programs: British Columbia, Alberta, Ontario, Quebec, New Brunswick, and Prince Edward Island. Other jurisdictions had pilot projects in progress.
- Most telehealth programs targeted populations with chronic diseases including diabetes, chronic obstructive pulmonary disease, asthma, depression, cardiovascular diseases, and palliative care.
- One regional health authority in Western Canada has a pilot project for wound care using home telehealth.
- Some criteria, tools, and strategies were in place for the programs.

Real-Time (Synchronous) Telehealth in Primary Care: Systematic Review of Systematic Reviews

Rapid Response (January 2008)

cadth.ca/real-time-synchronous-telehealth-primary-care-systematic-review-systematic-reviews-0

Technology: This report looked at real-time telehealth, which is also referred to as synchronous telehealth. It enables users to communicate live (or synchronously) over distances.

Issue: At the time of the report, there seemed to be an increasing number of systematic reviews addressing aspects of real-time telehealth but little attempt to summarize the evidence in these reviews to help decision-makers in health care. The aim of this report was to perform a systematic review of systematic reviews (i.e., a meta-review).

Key Findings:

- Evidence for telehealth is compelling for some conditions (chronic conditions such as congestive heart failure, and psychiatric and neurological conditions).
- There was no consistent message across all high-quality systematic reviews regarding user satisfaction and resource use.
- Much of the evidence is limited and uncertainty remains.

Overview of Assessments of Real-Time (Synchronous) and Asynchronous Telehealth

Technology Overview (January 2008)

cadth.ca/overview-assessments-real-time-synchronous-and-asynchronous-telehealth-0

Technology: This report compared synchronous (real-time or live) telehealth with asynchronous (store-and-forward) telehealth. Asynchronous telehealth involves collecting digital samples (e.g., electrocardiograms, radiological images, or text files of a patient's history) and transmitting them to a health professional at another location for review.

Issue: Synchronous telehealth often involves video conferencing, which might restrict it to facilities that have appropriate equipment and a high-speed Internet connection. Asynchronous telehealth might require less complex technology and could provide clinical and health system benefits, but a review of the evidence was necessary.

Key Findings:

- Asynchronous telehealth led to shorter wait times, fewer unnecessary referrals, and high levels of patient and provider satisfaction.
- Real-time telehealth reduced mortality in patients with congestive heart failure and is as effective as in-person care for psychiatric and neurological problems.
- Uncertainty remains regarding cost-effectiveness, access to services, resource utilization, process of care, and user satisfaction.

Asynchronous Telehealth: Systematic Review of Analytic Studies and Environmental Scan of Relevant Initiatives

Health Technology Assessment (January 2008)

cadth.ca/asynchronous-telehealth-systematic-review-analytic-studies-and-environmental-scan-relevant-0

Technology: The studies selected for this report looked at asynchronous (store-and-forward) telehealth. Asynchronous telehealth involves collecting digital samples and transmitting them to a health professional in another location for review.

Issue: Asynchronous telehealth could improve access to health care (particularly to specialized services), but there is uncertainty about its effectiveness.

Key Findings:

- Compared with face-to-face consultations, asynchronous telehealth had shorter wait times, fewer unnecessary referrals, high levels of patient and provider satisfaction, better diagnostic accuracy, and better access to service in locations lacking health professionals.
- The overall quality of most of the original studies in asynchronous telehealth is poor.
- Uncertainty remains regarding cost-effectiveness and resource use.
- The authors conclude that policy-makers have the opportunity to leverage the experience and resources of existing asynchronous telehealth services.

Health Technology Update, Issue 2: Virtual Pharmacists Provide Long-Distance Care

Health Technology Update (February 2006)

cadth.ca/health-technology-update-issue-2

Technology: This report examined telepharmacy, which is telehealth for pharmacy applications. Telepharmacy enables pharmacy services to be provided at a remote site while a pharmacist supervises the work from a central site using telecommunication and information technologies. If a reliable broadband transmission is available, the pharmacist can verify a pharmacy technician's work with a video-conferencing camera. A high-resolution camera can zoom in to see details of the dispensed medication.

Issue: Telepharmacy is an emerging type of delivery system that might help address pharmacist shortages. The aim of this report was to highlight this emerging technology.

Key Findings:

- In June 2003, the East Kootenay Regional Hospital in Cranbrook, British Columbia (BC) initiated the first Canadian telepharmacy service. Other BC hospitals have since implemented similar services.
- At the time of this report, Ontario had two pharmacists who provided telepharmacy services.
- Assessments and systematic reviews were not yet available.
- At the time of the report, the College of Pharmacists of British Columbia was the only provincial licensing body in Canada with telepharmacy guidelines, but the Manitoba Pharmaceutical Association (now the College of Pharmacists of Manitoba) was in the process of developing them. The Ontario College of Pharmacists did not have jurisdiction over hospital operations, including telepharmacy.

Assessment of Video Conferencing in Telehealth in Canada

Health Technology Assessment (May 2001)

cadth.ca/assessment-videoconferencing-telehealth-canada-0

Technology: In the context of this report, telehealth was discussed in a broad sense to include telemedicine activities, as well as distance learning in health and medicine.

Issue: In spite of reported benefits of telehealth, researchers and practitioners have noted barriers to its widespread adoption, including insufficient infrastructure and lack of standards. Analyzing the experiences of existing programs can provide information to guide future implementation decisions. This report surveyed the use of video conferencing at eight telehealth programs across Canada to provide decision-makers with broad-based information, evidence, and suggestions for future directions.

Key Findings:

- At the time of this report, video conferencing for telehealth applications in Canada was in a state of transition from pilot project to program status, with most programs expanding.
- Seven programs used video conferencing for patient sessions and education sessions. One program used video conferencing only for education sessions.
- Three programs addressed issues regarding physician reimbursement.
- All the programs surveyed reported some positive results (improved communications between colleagues, better access to care, high level of patient satisfaction).
- There were no identified nationally approved standards for training, and each program seems to have chosen its own path to implementation. Challenges were identified in areas of organizational change and medico-legal issues.
- A literature search of telehealth revealed methodological problems in many of the studies and little evidence about the clinical or economic benefits of telehealth.

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Ce document est également disponible en français.

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