



Module 1: Telehealth Fundamentals

Learning Objectives

Upon completion of this module, you will be able to

- Define Telehealth
- Identify benefits of Telehealth
- Recognize barriers to Telehealth, and
- Summarize strategic drivers of Telehealth



What do you think?

1. As our population ages, our healthcare costs rise.

- True
- False

2. In Canada, waiting times to see a doctor when sick or in need of medical attention are similar to those in other developed countries.

- True
- False

3. Often, clients or their providers need to travel to receive or deliver health services.

- True
- False



What do you think? *Answers*

1. As our population ages, our healthcare costs rise.

True. In our province, the average annual healthcare dollars spent per person in the 45-64 age range is just over \$2,300; it increases steadily to over \$20,000 for those 85 years and older.

Currently, 15% of BC's population is 65 years and older; by 2036, 25% will be over 65.

2. In Canada, waiting times to see a doctor when sick or in need of medical attention are similar to those in other developed countries.

False. The 2005 Commonwealth Fund International Health Policy Survey of sicker adults found that Canadians experienced longer waiting times than patients in New Zealand, Germany, Australia, United Kingdom and the United States.

3. Often, clients or their providers need to travel to receive or deliver health services.

True. On Vancouver Island: There were 881 visits by specialists to remote communities in 2011 (Ministry of Health). 8% of Telehealth clients say they would not have received care if Telehealth wasn't available (VIHA, 2011)..

Definition

Telehealth refers to the use of communication and information technology to deliver health care services and information over a distance.

Telehealth transmits voice, data, images and information, avoiding travel for patients, health providers and educators.

Telehealth is used to deliver **client consultations**, case conferencing, remote monitoring and **education**.

Examples:

- New and initial patient referrals
- Follow-up appointments
- Client and family visits
- Therapy or treatment sessions
- Pre-admission and discharge planning
- Triage decisions

Examples:

- Client health teaching and education
- Provider continuing education
- Multidisciplinary group sessions



Telehealth Participants

For example: physicians, nurses, therapists, and specialists.

- Telehealth consultations involve **providers** and clients.
- Telehealth consultations may require clinical support at the client site to collect vital signs and assist with examinations.
- Telehealth enables collaboration among multiple providers to discuss clients or share data and information.



Cardiologist, Nurse and Client participating in TeleCardiology

Examples of Telehealth

At a remote location

- Psychiatrists provide psychiatric assessments.
- Oncologists provide follow-up visits.
- Perinatologists view live ultrasound images.
- Heart specialists use a digital stethoscope to listen to their client's heart and lung sounds.
- Dermatologists view live images of skin lesions.
- Pharmacists review medications.
- Pathologists examine slides and confirm diagnoses.
- Speech Pathologists observe swallowing.
- Ophthalmologists view retinal images.
- Client's vitals are monitored at home.



TeleHome Monitoring



TelePathology

Strategic Drivers

There are

- Limited access to health care providers due to dispersed population and geographical diversity.
- Higher mortality rates in some remote communities.
- Higher emergency department visits per capita in remote communities.
- High proportion of elderly residents.
- Increase in prevalence of chronic conditions
- High cost and safety risks associated with travel for physicians and clients.



History

19th Century

Telehealth can be traced to the mid 19th century when electrocardiograph data was transmitted over telephone wires.



20th Century

In the mid 20th century, television and analogue picture transfer technology was adopted by psychiatrists to facilitate distant consultations.

1956

In 1956, Dr. Feindel, a Saskatoon neurosurgeon used a closed circuit television system to transmit live electrocorticography tracings.



2001

In 2001, Canada Health Infoway, a non profit Federal organization, contributed to the development of Telehealth in Canada.



1958

In 1958 Dr. Jurtras, a Montreal radiologist pioneered TeleRadiology.



Telehealth Today

Telehealth is now available in all British Columbia health regions supporting a variety of programs to many communities.



Created by Multi-Media and Telehealth Services, BC Cancer Agency December 2010



<http://www.northernhealth.ca/>



<http://www.interiorhealth.ca/YourCare/Telehealth/Pages/default.aspx>



<http://www.viha.ca/Telehealth>



<http://www.fnha.ca/>



<http://www.vch.ca/>



<http://www.fraserhealth.ca/>



<http://www.phsa.ca/AgenciesAndServices/Services/Telehealth/default.htm>

Privacy and Security

In order to build effective client-provider relationships and meet British Columbia legislation requirements privacy and security are secure. Telehealth uses secure and encrypted pathways to ensure sessions are secure.

Telehealth

- Meets Freedom of Information and Protection of Privacy Act (FIPPA) standards.
- Meets BC Ministry of Health privacy standards.
- Has an approved Privacy Impact Assessment (PIA) and Security Threat Risk Assessment (STRA).
- Uses encryption and firewalls.
- Allows secure connections provincially or out of province.



Live Interactive vs Store and Forward

Live Interactive is a synchronous modality that allows providers to see and hear their clients in **real time** using Telehealth technologies.

For example:

- A provider and client converse.
- A provider listens to the client's heartbeat with the help of a nurse at the client site.
- Multiple providers connect to discuss a client's case.

Store and Forward is an asynchronous modality where providers can review images, information and data of the client and respond at a **different time** based on the client's need.

For example:

- A provider sends a dermatologist images of a client's skin lesions for later review.
- A psychiatrist reviews a video call of a client's interaction with a case manager.
- A nurse and technologist capture and upload to a central server several images of a client's retina for remote ophthalmologists to review.



TeleOphthalmology

Telehealth Benefits

Increases service capacity and flexibility

Telehealth can enable

- Scheduling flexibility for providers and clients
- Regular follow-up.
- Providers to reach a larger geographical area and client base.
- Better compliance for some clients. For example, at Island Health some clients report that if Telehealth wasn't an option, they would not have traveled for their appointment.

Enables early triage and treatment

In urgent cases where immediate medical intervention is critical, the use of Telehealth can

- Enable emergent triage allowing care to begin immediately.
- Guide stabilization before transfers. Prevent unnecessary transfers.
- Engage off-site specialists.

Examples include: TeleStroke, TeleBurn, and TeleICU.

Reduces environmental impact

- Telehealth reduces the need for travel and therefore prevents greenhouse gas emissions.
- For example, as of May 2013, Island Health has avoided over 3.6 million kilometers of client travel, and has prevented over 977 tones of greenhouse gasses. This is comparable to parking 204 cars for an entire year!

Improves access to health services

- Remote clients and providers can access health services and education without leaving their community.
- Some clients are unable to travel due to health, family, financial or other reasons.
- Weather conditions and ferry schedules can impact a client or physician's ability to travel.
- Family can easily attend appointments and support their loved ones.
- Frequent appointments are more easily attended. Client's health can be monitored in their own home.



Saves time and money

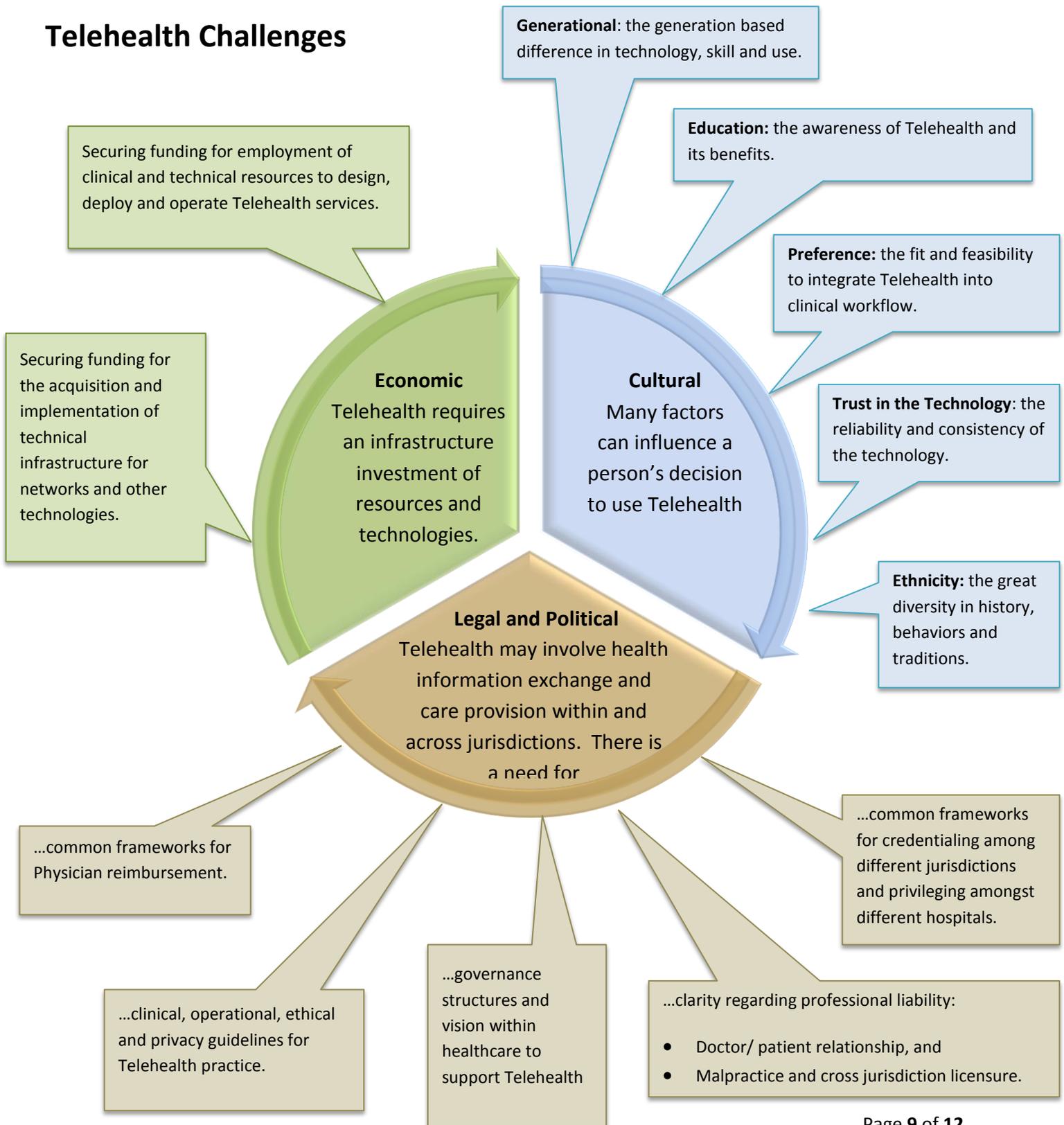
- Clients using Telehealth save expenses associated with travel such as gas, hotel stays, flights, car rentals, child care, time off work, and ambulance transfers.
- Clients and providers don't have to spend time travelling great distances.
- Inclement weather conditions can make it unsafe for clients and providers to travel.

Increases collaboration and learning opportunities

Telehealth

- Facilitates communication and relationship building among providers.
- Enables access to continuing medical education (for example CME and rounds).
- Delivers program specific client education.

Telehealth Challenges



Summary

- Telehealth uses technology to connect health care providers and clients over a distance.
- Telehealth uses live interactive and store and forward modalities to deliver client care.
- For both clients and providers, Telehealth reduces travel, saves time and money, allows for early triage and treatment, and increases collaboration and learning opportunities.
- Sometimes providers and clients are hesitant to adopt Telehealth due to economic, cultural or legal/political reasons.
- All health regions recognize Telehealth as a safe and useful way to deliver quality care to far communities.





Test your knowledge!

3. What is the definition of Telehealth?

- a) The use of communication and information technology to deliver health care services and information over a distance.
- b) Using videoconferencing for business meetings.
- c) A telephone helpline service which helps triage patient transfers.

4. Identify three benefits of Telehealth.

- a) Saves time and money.
- b) Replaces all in-person visits.
- c) Increases collaboration and learning opportunities.
- d) Increases service capacity and flexibility.
- e) Reduces wait times.

2. Telehealth provided from BC Health Regions:

- g) Meets Freedom of Information and Protection of Privacy Act Standards.
- h) Uses encryption and firewalls.
- i) Allows secure connections provincially and out-of-province.

5. Please complete the sentence:

If a provider sends a dermatologist an image of a client's skin lesions for later review, they have used a

Telehealth modality.

1. What are some challenges of Telehealth?

- a) Clients like travelling.
- b) The lack of awareness of Telehealth and its benefits.
- c) There is a need for common frameworks for credentialing.
- d) Telehealth can only be used within each health region.
- e) There is a lack of trust in the technology.
- f) Telehealth doesn't meet privacy standards.

Test your knowledge! *Answers*

Correct answers are highlighted in bold.

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4. Please complete the sentence:

If a provider sends a dermatologist an image of a client's skin lesions for later review, they have used a

Store and Forward OR Asynchronous

Telehealth modality.

5. What are some challenges of Telehealth?

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- c) **There is a need for common frameworks for credentialing.**
- d) Telehealth can only be used within each health region.
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