Commercialization of mHealth & eHealth technology in Canada

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Acknowledgement
A resource for developing new mHealth and eHealth focused interventions:

- Define the gaps within current Canadian Healthcare system
- Define eHealth and mHealth
- Identify go to market commercialization strategy
- Application of Human Factors in order to fill those gaps
- Better understanding of market landscape of mHealth and eHealth all across Canada
A Canadian Health Care System?

Canada has 15 different health care systems

- ‘Medicare’
- Comprised of ten provincial and 3 territorial government health insurance plans
- Provinces are responsible for the planning, financing and managing costs
- Adhere to national healthcare principles set at the federal level
  - Public Administration
  - Comprehensiveness
  - Accessibility
  - Universality
  - Portability
Challenges with the System

- Wide spread of land with about 30 million people
- Increase in aging population
- Structure of funding (From federal → provincial → LHINs)
- Increase in total healthcare spending (11.5% of total GDP= 242 bn)
- Decrease in patient satisfaction

![PERCEPTIONS ABOUT HEALTHCARE IN CANADA](chart)

Thinking specifically about health care. Below are a number of problems some have raised about health care in Canada. For each one, please tell us whether you think it is a major problem, a moderate problem, a minor problem, or not a problem at all.
Information Communication Technologies (ICTs) in Canada

Integration of information and communication technologies (ICTs) to support health infrastructure in Canada
Report on Digital Health: Clinicians embracing digital health

Demands on the health care system continue to be affected by the rise of chronic conditions, more evident with the aging population. As we evolve our system to meet these demands, health care providers and patients require tools to support quality care, self-management and a sustainable, innovative health care system.

- **Up to 25%** of the population will be seniors by 2025.
- **40%** of acute hospital stays are by people aged 65 and older, who make up 14% of the population.
- **39%** of Canadians aged 65-74 report having at least one major chronic disease.
- **13.3 million** visits with health care professionals each year for seniors with three or more chronic conditions.
- **4.5 million** visits for seniors with no chronic conditions.

Technology has permeated every aspect of our world and improved our ability to lead more productive, informed and healthier lives.

- **83%** of Canadian households have access to the internet at home.
- **3,731** is the average number of web pages a Canadian user visits per month (the most in the world).
- **72%** of family physicians refer patients to websites for information about their health care and lifestyle.

Report on Digital Health: The economics of digital health

Digital health investments can improve quality and access to care. They also contribute to economic development in terms of job creation, increased productivity and other economic measures. The value from an economic perspective lies in three main areas: Personal benefits to patients and their caregivers; value to the health care system; and economic return to the country as a whole.

If Canadians could electronically consult with their physicians, access test results and request prescription renewals online, they would...

- Avoid 47 million in-person visits.
- Save 18.8 million hours per year of time off work.

"It means more efficient health care and a much more convenient way of looking after your health." — Anne Furey, patient, Ontario, Canada.
mHealth and eHealth

“e-Health is a consumer-centered model of health care where stakeholders collaborate, utilizing ICTs, including Internet technologies to manage health, arrange, deliver and account for care, and manage the health care system”*

“mHealth (health through the use of mobile devices)”*

mHealth is a rapidly growing area of research that constantly changes to meet new technology and needs of the population. As the scope of mHealth grows, so does the diversity of the challenges in the knowledge needed to support the growth (Canada Health Infoway, 2016).
Problem space

- Tension between the private digital health market and public healthcare system

- Disconnect between demand and provision
  - Healthcare = inherently risk-adverse
  - May lead *those in charge* to seek less innovative solutions (Scarffe, Smith, & Barrett, 2017).
Go to Market Commercialization Strategy
Balancing **people-centric needs** and **commercial interest** is a fine line in **designing** and **developing** innovative, sustainable and successful health care systems (Shorrok, & Williams, 2016).
Individual Perception of mHealth and eHealth Technology

Norman’s 7 Stages of Action

Key Findings

- Based on literature review and interviews
- Lack of **consistent terminology** defining mHealth and eHealth technology
- Lack of definition between **go to market tools vs. wearables vs. EHR’s vs. efficiency** in Canadian and North American Market
- Lack of **multidisciplinary expertise representation** within mHealth and eHealth technology space
Relevance to HFES Community

Navigate the ecosystem

The gap between the private healthcare industry and public healthcare system’s perception of risk

Tools to bring various stakeholders and decision makers to be on the same page

More collaboration and transparency for stakeholders to work together

Increase trust among stakeholders in the healthcare system

Create a culture designed to share, communicate, and collaborate on health innovation focused projects instead of being in silos.
An in-depth examination of human factors research that examines barriers and facilitators of innovation in healthcare.

Decision-making frameworks essential for the success of Intellectual Property (IP) management and commercialization of mHealth.
Alternative funding models have been introduced in Canada to test a new way to innovate and foster various forms of partnership across research institutions, government agencies and innovation incubators.

Social Impact Bonds (SIBs) were introduced back in 2014 at the federal level between Public Health Agency of Canada, the Health and Stroke Foundation and the MaRS Centre for Impact Investing with the desired outcome of lowering blood pressure for about 7,000 seniors who are on the verge of developing hypertension (Ciufò & Jagelewski, 2014).
Innovation Superclusters

- A latest trend forming within the health innovation ecosystem, where innovation super clusters are forming around educational institutions, teaching hospitals and incubators (Toronto Start, 2016).
mHealth and eHealth space is growing rapidly

Roles of healthcare providers, decision makers and innovators are continually evolving

Government and regulations need to keep up with the change

Human centered and patient centered approach need to be taken to form a partnership between public system and private industry

Patients are becoming consumers of their health and have access to options to gather insights/data on their health
Malcolm Gladwell talks about 'Puzzle' vs 'Mystery' (a problem due to lack of information vs too much information). Most professionals are trained to solve puzzles, but in 4th industrial revolution, we need them to solve mystery. Eg. instead of the Doctor be an operational agent (collector of info to diagnose & operate), we need her to be a social agent (analyst of info to manage risks & emotions).
How can we work together to help clinicians become social agents for our patients with the help of mHealth and eHealth technology?
Thank you!

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References