



Advancing Health and Prosperity

A Brief to the Advisory Panel on Healthcare Innovation



November 2014

About ITAC

ITAC is the voice of the Canadian information and communications technologies (ICT) industry which is comprised of about 33,300 companies, generates \$155 billion in revenues, contributes \$67.2 billion to the Canadian GDP, accounts for 3% of total employment (approximately 572,700 jobs) and is the largest performer of private sector R&D (\$4.8 billion).

ITAC is committed to help member companies achieve greater success through advocacy, public policy, education, networking, professional development, events and business development opportunities in domestic and foreign markets.

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A Brief to the Advisory Panel on Healthcare Innovation
by the Information Technology Association of Canada (ITAC)

1 Summary

ITAC is a prominent advocate for the expansion of Canada’s innovative capacity and for stronger productivity across all sectors through the strategic use of technology. Nowhere is this more important than in the health sector where innovation is a critical success factor for enhancing the health and wellbeing of Canadians while ensuring a sustainable health care system.

In this submission, ITAC does not advocate for a single, or small number of specific innovative solutions. Instead we recommend that the Federal government, in partnership with the Provinces and Territories, create an environment that promotes and fosters innovation. This will unleash the creativity and ingenuity of health care providers and private companies to develop digital health solutions that meet the needs of Canadians.

To accomplish this objective, ITAC further recommends that:

- The Advisory Panel on Healthcare Innovation, as one of its priorities, adopt digital health as a critical enabler of healthcare innovation.
- The Federal Government of Canada enhance its respective roles in digital health as a strategic investor, regulator and purchaser of digital health products and services.
- Sustained funding be provided to Canada Health Infoway, CIHR and other federal agencies that support and fund innovative initiatives in digital health.
- The Federal Government of Canada, through its respective Departments and Agencies facilitate a national dialogue to promote health innovation through the establishment of harmonized standards and policies for digital health.

2 Innovation Supported by Digital Health

Digital health is the application of information and communications technologies to the management and delivery of healthcare. Many healthcare innovations, be they products, services or organizational changes, rely on digital health to support improvements in efficiency, effectiveness and efficacy. Digital health is the central nervous system of a complex information-intensive industry where the use and transmission of quality health information is integral to the effective delivery and quality of care. It empowers patients and health care providers to actively participate and collaborate in healthcare. It is a key factor in establishing a patient-centric model of care.

Digital health is a continually evolving ecosystem supported by a baseline of enabling technologies. These technologies are advancing at an increasingly rapid rate. Alone or in combination, they support new and innovative health solutions. These enabling technologies include (examples only):

Cloud Computing – Access to software, platforms and technical infrastructures that enable innovators to leverage secure state of the art technologies and services at low cost;

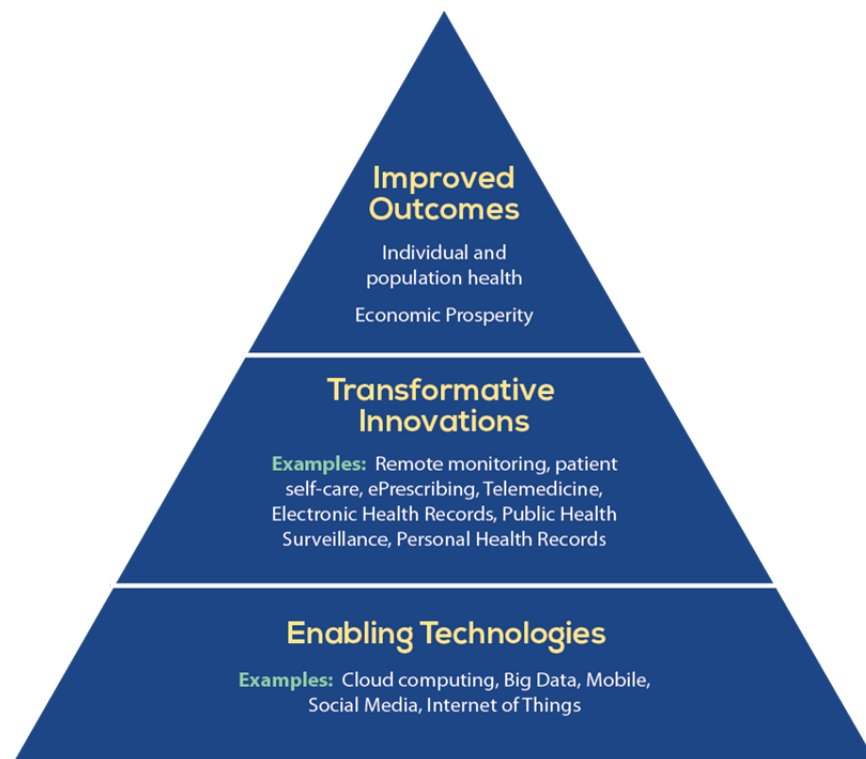
Big Data Analytics – the accumulation and analysis of massive stores of data to support clinical decision-making, health research and public health surveillance.

Mobile technologies – including smartphones, tablets, wearable devices and their associated apps that can collect and deliver health information to patients and healthcare providers anytime and anywhere it's required to support healthcare.

Social Media – that helps to create communities of interest to support patients and healthcare providers in the management of health conditions.

The Internet of Things – the integration of software and medical devices that connect patients to the Internet enabling remote monitoring and treatment of health conditions.

Figure 1 – Digital Health Innovation Ecosystem



Innovators leverage these enabling technologies to develop transformative solutions that support improvements in health outcomes and have the potential to drive economic growth. Over the past 5 years, Canadians have witnessed the deployment of numerous digital health innovations that are transforming the Canadian health care system. These include (examples

only): telemedicine, computerized physician order entry (CPOE) and evidence-based order sets, remote monitoring, personal health records, electronic health records, ePrescribing, and public health surveillance.

3 Evidence for the Benefits of Digital Health

There is a growing body of evidence that Digital Health delivers significant value for money in terms of improved health care outcomes, program efficiencies and economic development. For example:

Improvements in Health Outcomes and Efficiency

- A 2014 Benefits Evaluation Report for the Nova Scotia Personal Health Record Demonstration Project revealed that when a PHR (Personal Health Record) is included as part of a model of care, it can contribute to a quantifiable increase in practice capacity to provide more services to more patients in the same amount of time.¹
- A study conducted at Toronto's North York General Hospital found that mortality rates for pneumonia and COPD patients decreased by 45 percent using CPOE and evidence-based order sets. If order sets matched diagnosis at time of admission, the decrease was 56 percent.²
- The Ontario Shores Centre for Mental Health Sciences, the first hospital in Canada to achieve level 7 on the EMR Adoption Model³, reports that their EMR system has enabled an interdisciplinary model of care enhancing clinical workflows and improving communications among clinicians, accountability and transparency.⁴

Improvements in Economic Performance

- A 2012 study by the Gartner Group estimated that the value of benefits in British Columbia for three eHealth programs (Diagnostic Imaging, Drug Information Systems and Telehealth) exceeded \$300 million in 2012. The study concluded that, based on these numbers, the estimated national benefit for these programs would have exceeded \$1 billion in 2012.⁵
- A Conference Board of Canada analysis of the economic impacts of the Federal Government's \$500 million investment in 2010 through Canada Health Infoway concluded that an estimated 7,400 person-years of employment were created from March 2010 to March 2014, with a cumulative \$766 million impact on GDP. For every \$1 invested by Infoway and the jurisdictions, about \$1.48 is added to the overall GDP.⁶

¹ Stylus Consulting, Nova Scotia Personal Health Record Demonstration Project, Benefits Evaluation Report, 2014, p.7

² North York General Hospital Website at <http://www.nygh.on.ca/Default.aspx?cid=3086&lang=1>

³

<https://www.oha.com/CURRENTISSUES/KEYINITIATIVES/EHEALTH/Pages/GaugeyourHospitalseHealth.aspx>

⁴ Email from Ontario Shores Chief Financial Officer, John Chen, November 14, 2014.

⁵ Gartner Consulting, British Columbia eHealth Benefits Estimation, Executive Overview, April 8, 2013, P. 18

⁶ Canada Health Infoway, Conference Board of Canada analysis/economic impact model

These reports, and others, are establishing a sound business case for digital health in Canada.

4 Challenges for Innovation in the Current System

In order to succeed, innovators need access to national and international markets. Doing so allows innovators to scale their solutions, provide a reasonable return on investment, and generate profits that can be reinvested in new research and development. The Canadian marketplace, with 14 government jurisdictions each setting their own requirements, makes it difficult for innovators to succeed. At best, innovations remain local and small scale.

To create an environment in which innovators and their innovative solutions can thrive, a number of systemic issues need to be addressed. These challenges include the following.

Governance and Privacy– Innovators face a bewildering array of governance issues that includes the important issue of information privacy. In Canada there are 31 separate privacy statutes at the Federal, Provincial and Territorial levels. While ITAC agrees that privacy is an important matter that must be addressed, harmonization of privacy requirements would go a long way to enabling scalable digital health solutions.

Harmonization of Standards – While innovative solutions are unique, they must interoperate seamlessly with other parts of the health information infrastructure. Innovators must demonstrate that their products and services are interoperable, secure, private and safe. Innovative solutions must comply with minimum common standards. Over the past decade, significant progress has been made on digital health standards in Canada. However, there is still considerable variability in the application of standards across the country.

Procurement Practices – Innovative solutions need to find their way from the innovator’s workstation to the end-user through some form of government procurement process. Procurement practices in many jurisdictions are often too prescriptive thus precluding innovative solutions that might best solve the problem, but do not meet the precise specifications.

Gaps in Investment to Date – Direct government investments in digital health innovation have tended to focus on the community and primary care environments, with limited investment in acute care, or the points of transition between care in the acute and community sectors. A broad and integrated view of opportunities in all parts of the health care system is needed to achieve benefits and maximize returns.

5 Role for the Federal Government

Over the past decade, the Federal Government of Canada has demonstrated leadership in the promotion of innovative healthcare solutions. While recognizing that healthcare is governed by provincial and territorial jurisdictions, there remain a number of important roles for the Federal Government in the promotion of digital health innovation. These roles include the following:

Strategic Investor – The Federal Government has exercised its role as a strategic investor in at least two ways. The first is direct investment in digital health solutions through its agencies such

as Canada Health Infoway (CHI) and the Canadian Institutes for Health Research (CIHR). Many of the recent success stories in digital health, such as advances in Telemedicine, Diagnostic Imaging and Physician Electronic Medical Records are directly attributable to the Federal Government's investments in digital health in partnership with provincial and territorial jurisdictions. The Federal Government also supports innovative small and medium sized companies through programs such as the Industrial Research Assistance Program (IRAP) and the Natural Sciences and Engineering Research Council of Canada (NSERC).

Regulator/Certifier – Medical devices are being increasingly integrated into the digital health infrastructure. The Federal Government, through Health Canada, regulates and licenses medical devices that may contain software, to ensure that the devices are safe and operate as expected. CHI certifies health software products for privacy, security and interoperability.

Purchaser and User of Digital Health Products and Services – The Federal Government is a major health player in its own right in respect to the health services it provides to First Nations, the military, veterans, correctional services and other groups that come under federal jurisdiction.

Facilitation and Consensus Building – The Federal Government has a key role to play in the digital health domain to address barriers, such as the harmonization of standards and privacy requirements at the national level. Canada needs a national voice to facilitate consensus between the jurisdictions on the establishment of an environment that promotes and supports innovation.

6 Recommendations

ITAC recommends that the Federal government, in partnership with the Provinces and Territories, create an environment that promotes and fosters innovation. This will unleash the creativity and ingenuity of health care providers and private companies to develop digital health solutions that meet the needs of Canadians.

To accomplish this objective, ITAC further recommends that:

- The Advisory Panel on Healthcare Innovation, as one of its priorities, adopt digital health as a critical enabler of healthcare innovation.
- The Federal Government of Canada enhance its respective roles in digital health as a strategic investor, regulator and purchaser of digital health products and services.
- Sustained funding be provided to Canada Health Infoway, CIHR and other federal agencies that support and fund innovative initiatives in digital health.
- The Federal Government of Canada, through its respective Departments and Agencies, facilitate a national dialogue to promote health innovation through the establishment of harmonized standards and policies for digital health.

ITAC would be pleased to elaborate on any aspect of this submission, or address any questions raised by members of the panel.