DIGIHEALTH@CA: The State of Digital Health in Canada

Special track as part of eTELEMED 2017, March 19 - 23, 2017 - Nice, France

http://www.iaria.org/conferences2017/eTELEMED17.html

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Abstract—Since 2001, Canada Health Infoway has helped deliver better quality and access to care and more efficient delivery of health services for patients and clinicians by working with partners to accelerate the development, adoption and effective use of digital health solutions across Canada. The DIGHEALTH@CA I and II special tracks showcase how Infoway and its partners have nurtured the growth of digital health across the country through the establishment of governance and funding structures, development of pan-Canadian standards, and investment in digital health infrastructure, adoption, change management and research/evaluation.

Keywords-Canada; digital health; standards; health analytics; interoperability; Electronic Health Record (EHR); telehomecare; change management; consumer health.

I. INTRODUCTION

Canada's health system is under significant pressures that increasingly threaten its ability to provide high quality, universal care for all Canadians, both today and in the decades to come. As the Advisory Panel on Healthcare Innovation pointed out in 2015 [1], recent national reviews agree on the core challenges:

(i) A lack of an integrated and patient-centred health care system;

(ii) A need to better ensure system sustainability with improved efficiency and value-for-money; and,

(iii) A need to build a shared knowledge base and learn from it to improve services for patients and overall system management.

Canada Health Infoway (Infoway) is taking a leadership role through new digital health solutions to address these challenges in collaboration with its provincial, territorial, and international partners. Digital health solutions are an important enabler of the transformations required to ensure the sustainability of Canada's health care system. These solutions have the power to improve health, enhance quality and reduce health system costs. Digital health solutions are already yielding significant benefits to the health care system and to Canadians, but much more is possible.

II. DIGITALHEALTH@CA I --- GROWTH AND BENEFITS OF DIGITAL HEALTH IN CANADA

This session will take a macro-level look at the enablers for the development and spread of digital health in Canada; the progress achieved to date; and the possibilities to build and innovate on this established infrastructure. Don Sweete, CEO of SNOMED International, will discuss the importance of technology and terminology standards in facilitating the interoperability of digital health systems with a focus on the role of standards in facilitating the spread and scale of digital health in Canada [2]. Gheorghiu and Hagens [3] describe how benefits generated from investments in digital health are key towards demonstrating accountability to funders as well as to encouraging widespread adoption by clinicians and other health care professionals. The cumulative benefits calculation is a macro-level indicator trended over a period of 10 years. It represents estimated benefits accruing to various health care system stakeholders, as driven by component technologies and their associated adoption across the country. This calculation demonstrated that over $16B in benefits accrued to clinicians, patients, and the health care system since 2007.

Lastly, Tracy Johnson of the Canadian Institute for Health Information (CIHI) will describe the role of health data beyond the point of care such as in health system use and health analytics along with the enablers needed to maximize its value and usability [4].

III. DIGITALHEALTH@CA II --- INNOVATIVE, PATIENT-focused APPROACHES TO DIGITAL HEALTH IMPLEMENTATION AND CARE DELIVERY

The second part of the DIGITALHEALTH@CA stream focuses on the individual and some innovative approaches for engaging patients and clinicians through digital health.

Odell and Riahi [5] provide an overview of the strategies Ontario Shores Centre for Mental Health Sciences has employed to foster patient adoption and ongoing engagement including the launch of an Electronic Medical Record (EMR)-integrated patient portal; implementation of a mobile (mHealth) experience for patients to manage their care with actionable interventions through a secure mobile cloud technology platform; and the piloting of a virtual clinic which will utilize e-therapy that will maximize access and utilization of evidence informed virtual treatments.

Dr. Kendall Ho [6], a practicing emergency specialist, and lead of Digital Emergency Medicine at the University of British Columbia, provides examples of care delivered closer to home through telehomecare or remote monitoring for patients living with heart failure or Chronic Obstructive Pulmonary Disease (COPD). His research further examines the use of information technologies to accelerate the incorporation of latest health evidence into routine practice.

Lastly, Maria Sauco [7], a Change Management Leader, introduces Infoway's Change Management Framework, and the results of a pan-Canadian change management survey that provides insights into how change management is currently conducted across the country; the use of change management best practices and resources; and top enablers and barriers to change when implementing digital health technology projects.

IV. CONCLUSION

The Canadian approach to digital health implementation has placed great emphasis on a multi-jurisdictional approach, co-investment, adoption and use supported by gated funding, pan-Canadian standards and a common architectural blueprint, benefits evaluation, best management practices, knowledge transfer and sharing, collaboration and networking, and engaging and working with key stakeholders such as jurisdictions, practitioners, vendors and other stakeholder communities. As key infrastructure pieces are in place, the focus has shifted towards providing consumers, clinicians, and the health system overall with the tools and means to truly take advantage of the benefits that can be achieved through an interoperable, efficient, and self-sustaining system.

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