



Innovation is at the Heart of Exceptional, Efficient, and Sustainable Healthcare

Nathalie Le Prohon

Vice President, Healthcare Industry, IBM Canada

This is a time of profound disruption across almost all industries, none as prevailing and as significant as in healthcare. The need for demand-driven innovation is surfacing at almost every level, with recognition that maintaining the status quo will not help the current healthcare system in its struggle to tackle some of Canada's biggest health issues.

Recent economic statistics reveal the tremendous challenges being faced in Canadian healthcare. In 2016, healthcare was the single largest budget item for every province in Canada, consuming an average of 40 percent of program spend, with a projected increase to 47 percent within the next 13 years¹. However, leaders in the industry are realizing that overcoming these challenges cannot be achieved solely by investing more money or through cost-cutting measures. All players within the healthcare ecosystem should recognize that it is collaboration and innovation – in technology and in strategy – that is driving discovery and improving delivery.

Twenty years ago, it would have been almost unheard of for a large health sciences centre to partner with a major technology company. The industries ran in parallel and any relationship would have been one of vendor and customer. Today, healthcare and technology are engaged in a collaborative relationship that is transforming all aspects of healthcare, from hospitals to clinical work to patient care – a collaboration that is happening across Canada.

This past June, IBM announced another phase in a partnership with Hamilton Health Sciences (HHS) when the doors of the HHS Innovation Exchange were officially opened within the IBM Innovation Space. This health innovation accelerator enables entrepreneurs, researchers, and healthcare professionals to partner on projects that will improve the delivery

of healthcare services. This kind of collaboration manifesting itself through entrepreneurs and startups is helping to advance the development of solutions to some of the most pressing challenges in the healthcare system.

The premise of the accelerator is aligned to three founding principles:

- **Connecting** researchers, clinicians, and entrepreneurs to collaborate on projects focused on overcoming healthcare delivery challenges
- **Equipping** innovators with clinical resources and advanced IBM technology to successfully develop their solutions
- **Accelerating** the commercialization and implementation of these products and services across the healthcare system

Since its launch, there has been a marked increase in the number of innovators and startups that have come to the Innovation Exchange. This movement has further positioned Hamilton as a hub for healthcare innovation in Canada, building on the IBM / HHS innovation collaboration announced in March 2016. At that time, IBM and HHS unveiled the establishment of a new collaboration initiative focused on pairing cognitive technology with healthcare expertise to accelerate the development of technology-based solutions to healthcare delivery challenges.

Since the joint announcement of the IBM and HHS collaboration, several projects are well underway. The first initiative brought together critical care physician Dr. Alison Fox-Robichaud and the HHS health informatics team with IBM and the software platform Thoughtwire to automate the Hamilton Early Warning Score (HEWS). This customized electronic early warning system tracks patients' vital signs and assesses the urgency of care in providing emergency resuscitation. The successful

implementation of this digitized HEWS has helped contribute to an 87 percent reduction in the volume of code blues at the adult inpatient sites at HHS.

Further, the HHS and IBM team are now working on a pilot research project to apply IBM's analytic and cognitive capabilities to help create a breast cancer Learning Health System (LHS). The objective is to improve treatment for breast cancer patients and provide research opportunities by creating a system that collects timely patient-related outcomes.

The inaugural class of innovators at the Innovation Exchange includes a biotechnology start-up, GeneBlueprint, which use a proprietary algorithm to analyze their clients' genes and develops personalized fitness and nutrition plans. Now working with IBM and HHS, GeneBlueprint is using cloud-based technology to improve health promotion and disease prevention.

Using systems and technology to execute tasks that are more repetitive, data-centric, and automatic frees up valuable clinical resources to focus on what really matters – transforming care. Systems where data – existing and new, and from many sources – is shared and analyzed to reveal insights will lead to improved wellness. This unique use of technology is providing unprecedented opportunities to transform the ways healthcare is approached.

IBM's collaboration with Hamilton Health Sciences is one example of the commitment that Canadian organizations are making to the delivery of innovation that matters in an industry that is struggling. With the challenges our healthcare system is facing, strategic collaborations like this one are helping to put the necessary resources in place to transform care delivery and deliver better outcomes.

¹ The Sustainability of Health Care Spending in Canada 2017, The Fraser Institute