Innovation In Canadian Healthcare: What Are We Talking About?

WHITE PAPER - WORKING DRAFT

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"Innovation" in healthcare is a popular topic in Canada. A search of the term on Google's Canadian search engine, on May 20, 2016, resulted in 399,000,000 hits. The word is used in the subject lines of thousands of reports, papers, speeches, newspaper articles, conference agendas and white papers (including those produced for this conference). We have statutes that are so named, such as the *Alberta Research and Innovation Act*, the *Innovation Funding Act* (Manitoba), *Loi sur L'efficacité et L'innovation Énergétiques* (Quebec), and the *Innovation Corporation Act* (Nova Scotia). We have cabinet ministers responsible for it, for example, the Honourable Navdeep Bains, current federal Minister of Innovation, Science and Economic Development. But when we talk about innovation in Canadian healthcare, what are we really talking about? Perhaps as importantly, what are we not talking about?

In this paper we will look at how the term "innovation" is used in 36 publications relating to the Canadian healthcare system. We will identify what topics appear to be worthy of discussion and which are not. Our assessment of what is and is *not* discussed is not intended to be a criticism of the various writers, authors and speakers whose words have been reviewed (referred to in this paper as "sponsors"), but rather an observation of what is being discussed less frequently. Surely many sponsors considered some or all such matters to be outside the scope of their publication. Also, we do not want to suggest that *no one* is speaking of these less popular topics. Some are. Nonetheless we hope that this paper will spur more discussion of these less popular topics in the conversation and debate about innovation.

After a brief discussion of the nature of the publications we reviewed, we will consider what the sponsors said (and did not say) about the following topics:

- Whether and how they defined innovation?
- What is the subject of the innovation?
- What is the purpose of the innovation?
- Who should make the decision to proceed with the innovation?
- Who is accountable for the success of the innovation?
- Who will pay for the innovation?
- What is required to enable the innovation?

We will show how broadly the term "innovation" is used with respect to the Canadian healthcare system. This is an issue that we contend hampers the ability of policy makers to bring about the change so clearly required. To create coherent policy on innovation we must have a common understanding of what is to be innovated. To make effective innovation investments, decision makers must understand the purpose of the innovation, how it will be paid for, who will decide on its adoption and how its adoption aligns with other public policy imperatives. Finally, decision makers and policy makers need to understand and consider all obstacles to and all enablers of innovation – even those that are difficult to discuss.

THE SUBJECT PUBLICATIONS

This paper is based on our review of three dozen publications relating to the Canadian healthcare system, most of which were released in the past three years. Ideally, these three dozen publications would have been selected

randomly – the first 36 to appear in our Google search of the phrase "innovation in Canadian healthcare." However, we thought it necessary that the sample include a variety of forms of publications (beyond scholarly papers) and a variety of sponsors (beyond government reports). We sought to have some representation of sponsors from across Canada.[1] We were strict in our criteria that the word "innovation" had to appear in the title of the publication. It is possible, of course, that the results of our search would have been different if we had searched other similar words (reform, transformation, change, etc.).

As a result of our (admittedly less than scientific) selection process, we compiled the following as our sample:

Type	Number
Government Reports and Articles	7
Journal and Magazine Articles	1
Conference Agendas and Reports	7
Think Tank Reports	2
News and Other Online Articles	14
Academic Papers	3
Political Speeches and Submissions	2
Total	**36**

Note: A complete list can be found in Part A of the References.

The publications generally fell into three categories:

- they proposed or advocated for the adoption of one or more innovations (21);
- they reported on innovations that had been tried or proposed (10); or
- they spoke to processes to explore existing or future innovations within the Canadian healthcare system (5).

Some publications fell into more than one category. Where that was so, we categorized the publication based on its apparent primary purpose. While the sponsor of a publication was not necessarily the inventor of the innovation discussed or even necessarily a proponent of it (in some cases the sponsor was merely a commentator), for ease of reference, when we refer to a "sponsor's innovation," we mean the innovation discussed by that sponsor in the publication reviewed.

DEFINITION OF INNOVATION

Six publications included a definition of the term "innovation." The definitions varied in length and meaning. Examples include:

> Innovation is "new or better ways of doing valued things. An 'invention' is not an innovation until it has been implemented to a meaningful extent. Innovating is not limited to products, but includes improved processes and new forms of business organization." (Expert Panel on Business Innovation, quoted in Snowdon, Shell, and Leitch 2010, 5)[2]

> Innovation is "an openness on the part of people to new ways of thinking and doing that bring about improvements, whether to an individual business, an industry, government, the economy or society as a whole." (Government of Ontario 2015, 6)

> Innovation is "a new method, idea or device." (*Collins English Dictionary*, quoted in Shroff 2012, 2)

> Innovation is "something that adds value and provides a significant incremental (or more likely transformative) benefit over the current status quo (or standard of care, in the context of health)." (OBIO, CLEAR, and Innovation Cell 2013, 11)

> "Innovation doesn't have to be a brand new technology or process. It could be an enhancement of something that already exists." (Miller 2013, n.p.)

After canvassing a number of definitions, the federal Advisory Panel on Healthcare Innovation (the Naylor Panel), in their report *Unleashing Innovation: Excellent Healthcare for Canada*, adopted the following definition:

> Activities that "generate value in terms of quality and safety of care, administrative efficiency, the patient experience, and patient outcomes." (Health Canada, quoted in Naylor et al. 2015, 5)

The breadth of activities that fall within the term "innovation" is reflected in all of the definitions. The term is applied to devices, products, methods, processes and structures. Two definitions specify that the technology, process, etc. – that is, the subject of the innovation – must be new. A third, while saying the opposite, likely means the same (i.e., the technology or process may not be new but the enhancement surely is). Three sponsors specify that an innovation must create value – although only one sponsor indicates that the value must be

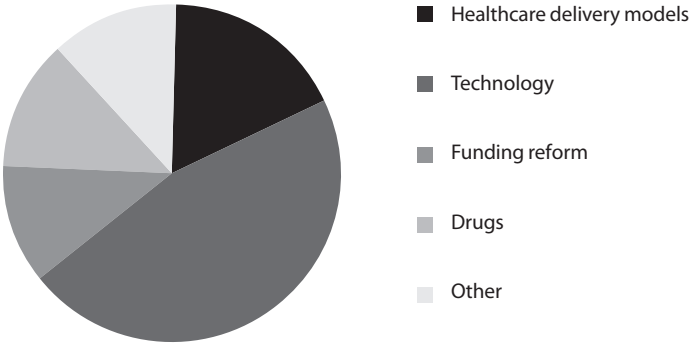
1. We also focused on recent publications. For example, we excluded a submission of Matthew Mendelson (of Queen's University) to the Commission on the Future of Health Care in Canada (the Romanow Commission). As it was written in 2002, under the heading "Canadians' Thoughts on Their Health Care System: Preserving the Canadian Model through Innovation," we considered the paper to be too dated to include in this review.

2. See "From Innovation and Business Strategy: Why Canada Falls Short" (Expert Panel on Business Innovation 2009).

significant. Overall, the definitions set a fairly low threshold for how much value the change must generate in order to be considered innovative.

While all improvements must be considered desirable and beneficial to be deemed "innovative," presumably when policy makers speak of innovation in healthcare – especially when they speak about applying sizable financial resources to bring about those improvements – the change they are seeking is substantive change, meaningful change, *transformational change* (to use another overused term). But this goal may need to be made more explicit in the way we define "innovation." Based on the definitions proffered above, this cannot be assumed.

FIGURE 1
Type of Innovation Addressed



SUBJECT OF THE INNOVATION

It is not only interesting how broadly the sponsors defined innovation, but also how they applied it: What is it about the healthcare system that is to be innovated? A large number of sponsors (18) spoke about innovations involving the application of information technology, particularly IT advancements in clinical service delivery and diagnostics, patient communication (EMRs), appointment booking, and telemedicine, as well as the general need for the greater adoption of new technologies. Several sponsors (7) spoke about the need for innovation in our healthcare delivery models and, in particular, innovations around patient-centred care. One publication mentioned the need for changes to the scopes of practice for pharmacists (Kirkey 2014), and another outlined a new care approach for those with chronic disease (Canadian Health Services Research Foundation 2012).

Four publications discussed funding reform in the healthcare system: two proposed the end of fee-for-service funding (Frank 2012; Saunders et al. 2013); one referred to the move away from global budgets for hospitals towards activity-based funding (CFHI 2011); and one spoke about providing financial rewards for the achievement of quality and financial benchmarks (Snowdon, Shell, and Leitch 2010). One sponsor stated that the single-payer healthcare system is financially unstable (University of Calgary 2015).

Five publications were focused on drugs and other life science innovations, including generic supplies, plan coverages, ethical processes and further research and development in general (Health Care Innovation Working Group 2012; Nikidis 2015; Priest 2012; Sullivan 2015; Williams 2014). The topics discussed in four publications were too broad to be categorized.

It may be a sign of the times that not a single publication addressed the topic of governance re-design or system-wide restructuring as a desirable innovation in our healthcare system today. We expect the subject would have been frequently raised in a similar search for innovation in healthcare conducted a decade or more ago. Whether a province's regional structure is the right structure; whether the number of health regions in a province is the right number; what extent of the government's authority should be devolved to regional authorities; whether regional authorities should assume the powers of local hospital boards; whether authorities should have responsibility for other determinants of health (social services, for example, as in Quebec) – these would all have been ripe topics for discussions of innovation in healthcare a decade ago. In the sample publications, they raise not a peep.

Today we may not have the fortitude to move those heavy governance pieces around the chess board that is our health system; the outlay of time, resources and political will may be considered too great for the innovation that comes of it. But likely some restructuring is desirable, and some is required. Home care is one area that may require systemic innovation. In Ontario, the Ministry of Health and Long-Term Care is preparing to restructure the manner in which home care services are allocated and delivered. However, the proposed changes (which involve moving the responsibility for the oversight of its delivery from 14 Community Care Access Centres to 14 Local Health Integration Networks) may not be sufficiently innovative. As policy makers consider alternative accountable care or hub-based delivery models, some deeper structural changes may have to be considered.

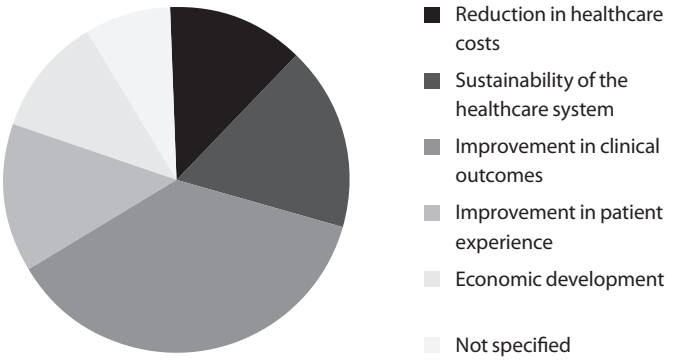
PURPOSE OF THE INNOVATION

Not all of the sponsors spoke to the purpose of the innovation, although in many cases the purpose could be inferred. Generally, the stated or inferred purposes fell into one or more of six categories. Seven innovations were proposed for their ability to reduce healthcare costs; eight were proposed for the way in which they would support the sustainability or increased efficiency of the healthcare system or an aspect of it.[3]

Eighteen sponsors identified improvement of clinical outcomes as the purpose of their innovation. Within this category, many spoke about improved outcomes for seniors (CMA 2014) or those with chronic conditions (Canadian Health Services Research Foundation 2012), and one described the potential for improvement of the health and wellness of an entire province (Alberta) (Government of Alberta 2015). Eight sponsors stated that the innovation would improve the healthcare experience for patients or their families, including, specifically in one case, those suffering from dementia (Government of Canada 2015).

Interestingly six sponsors identified economic development – expressed also as increased competitiveness (Snowdon, Shell, and Leitch 2010) or productivity (Kirkey 2014) – as being one of the purposes of the innovation.

FIGURE 2
Purpose of the Innovation



3. These two objectives may be one and the same. It is possible though that if innovators spoke more specifically about the limited nature of the cost reductions that would be realized by the adoption of their proposed innovation, greater trust – which is proposed by one sponsor as a key enabler to innovation – might be created. If an innovation intended to save costs performs the way it is proposed, then it will result in a reduction in some healthcare costs. Unless healthcare funders are prepared to reduce healthcare funding by the amount of those savings, the cost of healthcare as a whole will not be reduced (since the savings will be used to meet one of many otherwise unmet needs). Our system may be no more sustainable. Nonetheless, it may be more efficient.

WHO MAKES THE INNOVATION DECISION?

Few sponsors identified who would ultimately need to make the decision to adopt their innovation. The federal government was referred to most often, but this largely arose due to the number of sponsors who spoke about the $1.5 billion innovation fund proposed by the Naylor Panel (the Healthcare Innovation Fund). One sponsor suggested (in reference to another innovation fund similar in purpose to the proposed Healthcare Innovation Fund) that amounts could be provided through the use of a standard questionnaire and consideration by a diverse panel comprised of scientific experts, entrepreneurs and lay people – essentially an "Innovation Judging Committee" (Priest 2012). Other sponsors referred to the need for the federal government to make changes in intellectual property laws (CFHI 2011; Williams 2014), to reduce trade barriers (Miller 2013), to refocus the National Research Council (Williams 2014), and to strengthen the Industrial Regional Assistance Program (Williams 2014). In sum, many sponsors focused on the federal role in creating a more dynamic innovation culture.

At the same time, various proposals for tax reform, financial grants, changes in procurement laws and attitudes towards innovation make it clear that many sponsors view both federal and provincial governments as having a decisive role in the adoption of innovations (e.g., Conference Board of Canada 2015; O'Hara 2015; Saunders et al. 2013; Sullivan 2015). Two provincial innovation agendas were referred to specifically: Ontario's (Government of Ontario 2015) and Alberta's (Government of Alberta 2015).

Few publications spoke about how adoption decisions should be made. Some urged different or more effective procurement regimes for those purchasing healthcare innovations – i.e., regimes that would recognize more than just the short-term objective of lowest price (Conference Board of Canada 2015; Naylor et al. 2015; O'Hara 2015).

Similarly, few publications addressed the differences between top-down innovation and bottom-up innovation, although one sponsor spoke about innovation that could be realized on a day-to-day basis by doctors, nurses, "tech savants" and administrators with an eye to the big picture (Pitts 2015).

Increasingly, we see top-down efforts aimed at encouraging bottom-up innovation. For example, Ontario's Health Links, launched in December 2012, were designed to improve the health of seniors and others with complex conditions by coordinating the care often received from multiple physicians, pharmacists and other health service providers. Organizations were invited to submit plans on how they would meet those goals for a select number of patients within their catchment area. Initially 26 early adopter organizations were selected to proceed with modest amounts of funding. Eventually the number was increased to 82. Each Health Link operated according to its own

approved plan, with some having better success than others. With a better understanding now of which programs worked well, Ontario is beginning to standardize the programs under the nomenclature of "Advanced Health Links."[4] Adopting a bottom-up or "fail cheap, fail early" process – as one sponsor advocates (Snowdon, Shell, and Leitch 2010) – seems to hold promise for encouraging innovation.

ACCOUNTABILITY AND INTEGRATION

Accountability and integration are frequently referred to as public policy priorities in the Canadian healthcare system, but few of the sponsors spoke to either.

Addressing accountability would seem to require an articulation of what the innovation would accomplish – not only in generalities (i.e., saving money; improvement in patient experiences; also see Purpose of the Innovation above), but also in terms of specific measurable outcomes. Accountability would generally require identification of the objective of the innovation; the method by which the performance of the innovation would be measured; the numeric or other measurable goal that would indicate success; and the consequences for failure. None of the publications addressed all four aspects, although some spoke to at least one aspect:

- One sponsor implied that the failure of a health service provider to meet stated benchmarks would result in a reduction or elimination of government funding (Snowdon, Shell, and Leitch 2010); another suggested that savings realized against benchmarks would be reinvested in the service area that realized them (Frank 2012).
- The Health Care Innovation Group (2012), under the leadership of Saskatchewan Premier Brad Wall and former Prince Edward Island Premier Robert Ghiz, proposed the CASH reporting system adopted by the former NHS Institute for Innovation and Improvement. That framework looks at five areas to determine the success of an innovation: completion; adoption/awareness activities; spread (uptake of the innovation); impact (measured through evaluation based on the established objectives); and lessons learned.
- One sponsor set a measurable objective with respect to its healthcare system performance goal: to bring Canada into the top five performing healthcare systems (HealthCareCAN 2016).
- Another sponsor that provided significant funding to an institute for healthcare innovation identified criteria against which the program was assessed five years later, including: commercialization success; promotion and dissemination of knowledge; and training and development of future leaders in healthcare (Innovation, Science and Economic Development Canada 2014).
- In evaluating an innovation, Canada Health Infoway suggested that success would be measured through the establishment of targets and performance indicators, including those related to use, solution quality, user adoption and outcomes (Canada Health Infoway 2010).
- In two publications promoting changes in physician compensation, the inference was clear: medical providers will not get paid unless they engage in healthcare team treatment programs and perform to benchmarks (Frank 2012; Saunders et al. 2013).
- Ontario stated that it is developing an innovation score card that will focus on measuring investment impacts including, for example, wealth created per person and distribution of prosperity, the global share of knowledge-based firms, firm births and deaths, investment and public support for innovation, education and immigration, and trade balance for knowledge based firms (Government of Ontario 2015).

Even fewer publications addressed integration, another public policy objective in healthcare, although it is clear that some of the innovations require integration to succeed.[5] The publications that discussed innovations in chronic disease management contemplated better integration of ambulatory and community care providers (Canadian Health Services Research Foundation 2012), or, in one case, more integration among medical practitioner teams (Health Care Innovation Working Group 2012). The Naylor Panel considered many examples of projects involving integrated approaches. For example, it suggested implementing and developing projects involving bundled payments and shared financial incentives for hospitals, physicians and community providers; delivery arrangements to address social needs and determinants of health, to protect and promote health, and to prevent disease; and optimizing scopes of practice among professionals in the healthcare sector (Naylor et al. 2015).

PAYING FOR THE ADOPTION OF AN INNOVATION

Outside of government publications that indicated innovations would be paid for out of tax dollars and publications discussing federal or provincial innovation funds, many sponsors were not forthcoming about how the adoption of an

4. See "Transforming Ontario's Health Care System: Community Health Links Provide Coordinated, Efficient and Effective Care to Patients with Complex Needs" (Ontario Ministry of Health and Long-Term Care 2016), at http://www.health.gov.on.ca/en/pro/programs/transformation/community.aspx.

5. For example, publications that dealt with the creation of electronic health records (e.g., Canada Health Infoway 2010) and with physician teams (e.g., Frank 2012).

innovation would be paid for. One sponsor spoke to the amounts required to sustain drug coverage for employees being paid by employers (Sullivan 2015). One spoke to the use of federal and provincial infrastructure funds (Canadian Health Services Research Foundation 2012). Another spoke to the federal government assuming the costs of Phase 3 clinical trials (CFHI 2011).

We infer that at least four of the sponsors felt that their innovation would pay for itself: that is, the savings to be realized by the adoption of the innovation would more than compensate for the cost of its adoption (Frank 2012; HIMSS 2015; Kirkey 2014; Snowdon, Shell, and Leitch 2010). However, to the extent those innovations might require large, upfront investments to be made, there was little indication as to how our cash-strapped health service providers would obtain those initial funds.

Few sponsors dealt with private sector "investment" in the healthcare sector – for example, arrangements in which the private sector pays the upfront costs of adoption, including the initial capital and operating costs (e.g., equipment, systems, or the construction and fit-out of standalone ambulatory clinics), and then shares in the savings to be realized over time. See further discussion on this topic of risk transfer under Cultural Change below.

None of the sponsors spoke about patients paying any part of the cost of innovation, even though it may be perfectly legal for some fees to be charged under provincial health insurance laws, through block fees or otherwise.[6] This was true even in discussions about innovations aimed at "simply" improving the patient experience (booking appointments online; improved communication, etc.).

None of the sponsors spoke about patients paying for medically necessary services more generally – and some absolutely reject the notion (Pitts 2015)[7] – although presumably the sponsor who suggested that the single-payer system is not sustainable contemplates some amount of private pay (University of Calgary 2015). See the further discussion on this point below under the Single-Payer System.

ENABLERS OF INNOVATION

The sponsors identified a number of enablers to overcome obstacles to innovation in the Canadian healthcare system.

Research, tax credits, federal payments

Eleven sponsors spoke to the need for greater research and funds to increase commercialization and adoption of innovations. Most of these sponsors supported the creation of federal or provincial innovation funds. Two sponsors spoke to the need for changes in intellectual property laws to advance innovation (CFHI 2011; Williams 2014). Some sponsors referred to tax credits and the reduction of trade barriers as methods to incentivize innovation (Miller 2013; Sullivan 2015). One sponsor proposed that the federal government assume the costs of Phase 3 clinical trials (CFHI 2011). Another spoke to potential changes to federally-funded regional assistance programs and research councils (Williams 2014).

Procurement

Three sponsors (Conference Board of Canada 2015; O'Hara 2015; Saunders et al. 2013) discussed alternative procurement practices aimed at advancing innovation. These innovative procurement practices will, sponsors argued or implied, lead to greater innovation in the healthcare system. In comparing the Canadian system to the Swiss system, one sponsor noted that Canada has yet to recognize procurement as a tool for injecting innovation into the healthcare system (Saunders et al. 2013).

Changes in Culture

A number of sponsors spoke to the need for culture change as a means to encourage innovation. Measures referred to include: those that would result in increased trust between government payers and providers of human health technology (OBIO, CLEAR, and Innovation Cell 2013); the application of ethical standards (Nikidis 2015); and the development of greater competition within the healthcare system (CFHI 2011). Two of these proposed innovations related to the pharmaceutical industry in particular. One sponsor suggested that entrepreneurs need to improve their marketing skills in order to provide better evidence and explain the improvements that would be derived from their proposed innovations (Pitts 2015).

Three sponsors spoke to the risk averse nature of Canadians or the healthcare system (Pitts 2015; Saunders et al. 2013; Snowdon, Shell, and Leitch 2010). One sponsor spoke of the need to inculcate a culture of risk taking (Snowdon, Shell, and Leitch 2010). Recognizing that we cannot innovate if we are not prepared to take risks, the sponsor promoted micro-innovations – small investments, commenced early, tested early – as a means to take responsible risk. The theory being: if the innovation is not going to be successful, it is best to identify that early and after a minimal investment has been made (fail early; fail cheap).

6. See, for example, the 1995 Professional Standard regarding Block Billing issued by the College of Physicians & Surgeons of Nova Scotia, online at https://www.cpsns.ns.ca/DesktopModules/Bring2mind/DMX/Download.aspx?PortalId=0&TabId=129&EntryId=5.

7. This is presumably what is intended by Alex Drossos when he states that "the system can innovate without profit as the overriding priority"(as quoted in Pitts 2015).

The sponsor's proposition begs this question: How much risk – and, by extension, how much innovation – can be taken in a healthcare system funded almost entirely by government?

Is it possible for our government-funded healthcare system to take the risks that will lead to innovation in this day of media and social media "outrage" over apparent mismanagement – no matter how small the risk, in an age of "gotcha" politics and of risk mitigation in place of strategic planning? Can a culture be developed in which health service providers consider not only how to mitigate or eliminate risk, but also how much risk (political, reputational and economic) they are willing to take on in order to innovate? Are they prepared to transfer the risk they are not willing to assume and to pay a price to be relieved of that risk? Private sector entities are often more willing to take on the risks associated with innovation – for a price, of course. Acceding to such an arrangement is in itself an innovation. Can the sector embrace the notion that learning and improvement comes even from failure – that so long as the investment is limited, even a failure of an innovation can be a success?

Regulatory Change

A small number of sponsors spoke to the need for regulatory change to enable their proposed innovation. We easily identified at least seven types of regulatory change that would need to be made to eliminate the named obstacles to innovation in the publications:

1. Increase regulatory harmonization (e.g., harmonize drug approval requirements with the U.S. Food and Drug Administration and European Medicines Agency; harmonize privacy legislation among the federal government and the provinces) (Naylor et al. 2015);
2. Optimize scopes of practice of health professionals (Kirkey 2014; Naylor et al. 2015);
3. Change physician payment regimes (Frank 2012);
4. Change patent laws (particularly in relation to length of patent terms) (CFHI 2011; Williams 2014);
5. Change procurement directives / laws (Conference Board of Canada 2015; O'Hara 2015; Saunders 2013);
6. Change health insurance laws to move away from the single-payer system (Arcus Consulting n.d.);
7. Eliminate trade barriers (Miller 2013).

Governance

None of the sponsors discussed the potential for changes in the way our health system providers are governed as a means of encouraging innovation. Canada's labour force – including those working in our healthcare system – is incredibly diverse. But how diverse is the board of directors of each health service provider? How diverse is its management team? Studies have shown that diversity is critical for an organization's ability to innovate.[8]

There are a number of initiatives now in place to increase the representation of women on Canadian boards,[9] but to truly innovate we will need diversity of all sorts – demographic and experiential – throughout our boards and management teams.

> Diversity is critical for an organization's ability to innovate and adapt in a fast-changing environment. Diversity is essential to growth and prosperity of any company: diversity of perspectives, experiences, cultures, genders, and age. Why? Because diversity breeds innovation. And innovation breeds business success. (Walter 2014)

> For innovation-focused banks, increases in racial diversity were clearly related to enhanced financial performance. (Phillips 2014)

Labour and Human Resources

None of the sponsors identified changes to Canada's labour laws or government policies towards organized labour as being necessary or desirable enablers to greater innovation. Yet how often has innovation been stymied by outdated

8. For example, study results mentioned in Hewlett, Marshall, and Sherbin's 2013 article show that companies with professionals who exhibit three inherent diversity traits (traits an individual was born with) and three acquired diversity traits (traits gained through experience) out-innovate and out-perform others. In a different study, discussed in Rizy, Feil, Sniderman, and Egan's (n.d.) report, one-on-one interviews with executives with direct responsibility for their company's diversity and inclusion programs were conducted. One of the study's key findings was that diversity is a key driver of innovation and is a critical component of being successful on a global scale. Katherine W. Phillips (2014) summarized several study results showing that building innovative teams or organizations requires diversity. For example, one of the mentioned studies was conducted by business professors Cristian Deszo of the University of Maryland and David Ross of Columbia University, who found that companies that prioritized innovation resulted in greater financial gains when women were part of top management.

9. See, for example, the CSA Final Amendments to National Instrument – Disclosure of Corporate Governance Practices, OSC NI 58-101 (December 31, 2014), which applies to TSX-listed and non-venture Issuers. It mandates "Comply or Explain Disclosure Requirements" regarding quotas for women. See online at http://www.osc.gov.on.ca/en/SecuritiesLaw_csa_20150928_58-307_staff-review-women-boards.htm. Also see the 2014 report of the Advisory Council for Promoting Women on Boards, delivered to the federal Minister of Labour and the Minister of Status of Women, "Good for Business: A Plan to Promote the Participation of More Women on Canadian Boards." Further, the Canada Bill 207 (S-207), *An Act to modernize the composition of the boards of directors of certain corporations, financial institutions and parent Crown corporations, and in particular to ensure the balanced representation of women and men on those boards*, was introduced on December 8, 2015, and is currently at Second Reading. It should be noted that similar versions of this Act were introduced in 2011, 2013, and 2014, with little success. See: http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&DocId=8063360&File=19 and http://www.parl.gc.ca/LegisInfo/BillDetails.aspx?Language=E&Mode=1&billId=8063359.

collective agreements, threatened union political action and political commitments to maintain the status quo? Don't we need to know? Don't we need to consider how we can protect the legitimate interests of both the system's healthcare employees and its patients? The status quo may not be the answer.

Similarly, few sponsors identified the need for changes in compensation regimes for non-physicians as being an enabler of innovation. Query though whether the restraints on salaries and other compensation (including Intellectual Property rights) in the broader public sector are preventing the healthcare system from hiring and maintaining those best able to innovate and motivating those best able to create innovation.[9]

One sponsor suggested that financially-rewarding compensation could overcome some current disincentives to innovation on the part of clinicians (Saunders et al. 2013).

Single-Payer System

Among the enablers of innovation, changes to our single-payer healthcare system were only hinted at (Arcus Consulting n.d.; University of Calgary 2015). Is it possible to truly innovate our healthcare system as long as there are only 14 primary purchasers of healthcare in Canada (10 provinces, three territories and the federal government); as long as the majority of our physicians have a single source of payment for the medically necessary services they perform; and as long as our hospitals and health systems receive nearly all of their operating revenue from the increasingly constrained resources of the government? Are there enough opportunities for innovators with:

- system-wide solutions to command the attention of the small number of system-wide purchasers?
- practice-specific solutions to find a practice with the means to purchase it?

Do these limitations account for the great number of Canadian innovators who find their success outside of Canada? These are difficult questions that need to be considered.

In its terms of reference, the Naylor Panel was charged with making recommendations to increase innovation in the Canadian healthcare system. The committee was given free rein subject to three caveats: 1) to respect the division of powers in the Canadian Constitution (which accounts for the Naylor Panel's focus on recommendations for the federal government rather than the provinces and territories); 2) to fall within the existing parameters of the *Canada Health Act*; and 3) to avoid having its recommendations "result in increasing spending pressure on provincial and territorial budgets" or "imply either an increase or a decrease in the overall level of federal funding for current initiatives supporting innovation in healthcare" (Naylor et al. 2015, vii–viii). The committee was unable to comply with all caveats. It chose to disregard the third. Among others in its lengthy list of recommendations was the creation of the $1.5 billion national Heathcare Innovation Fund referred to above.

It is understandable that the Naylor Panel members did not feel they could violate more than one condition. Some changes could nonetheless be made to our single-payer system for medically necessary procedures without violating the *Canada Health Act*, if the provincial governments were willing to ease restrictions, particularly in the realm of physician billing.[10] This is not to suggest that a discussion of these matters at a provincial level would be an easy one.

CONCLUSION

Our review of 36 publications showed the wide spectrum of topics discussed under the umbrella term "innovation." Given the breadth of the Canadian healthcare system – the numbers of its patients, service providers, and employees; its systems, processes, and physical structures; the technology used within it; the drugs administered and devices utilized; the professionals working within it – it is not surprising that the breadth of proposed innovations is similarly great. But, to be transformational, discussions about innovation also need to be specific.

Before a government or a health service provider makes a significant investment in an innovation, a number of questions need to be answered:

- What is the subject of the innovation?
- What is the purpose of the innovation?
- Who should make the decision to proceed with the innovation and how should it be made?
- Who is accountable for the success of the innovation?

9. *Broader Public Sector Accountability Act* (Ontario) compensation restraint provisions apply in the health sector only to public hospitals for now. These restraints are two-fold: 1) executive compensation restraints apply to designated employees and office holders, essentially locking in their compensation at March 2012 levels; 2) performance pay restraints, which apply to all non-union employees and office holders, and limit the amount of performance pay that can be paid to this group to a fixed envelope and the *Broader Public Sector Executive Compensation Act*, which gives the government power to issue directives on compensation. British Columbia has introduced similar policies to freeze or limit public sector compensation.

10. See "First, Do No Harm: How the Canada Health Act Obstructs Reform and Innovation" (Clemens and Esmail 2012). This is not to say that the *Canada Health Act* does not contain any constraints on private payment; its prohibitions on co-payments and extra-billing are clear limitations.

- Who will pay for the innovation?
- What is required to enable the innovation – specifically and more generally?
- How much risk are we willing to take?

There is much to discuss. There is much at stake.

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