FROM INVENTION BY ACCIDENT TO INNOVATION BY DESIGN

Collaborating to Improve Health and Compete Globally

A submission to the Federal Advisory Panel on Healthcare Innovation from Canada’s Leading Healthcare Organizations

December 5, 2014
Executive Summary

HealthCareCAN is the national voice of healthcare organizations across Canada, including the majority of the country’s research hospitals, academic regional health authorities, and their research institutes. We foster informed and continuous, results-oriented discovery and innovation across the continuum of healthcare. We act with others to enhance the health of the people of Canada; build capability for high quality care; and help ensure value for money in publicly financed healthcare programs.

We applaud the Federal Government and the Minister of Health for striking this blue ribbon Innovation Advisory Panel. We commend the Panel and its staff for reaching out to the healthcare community through this consultation. We believe that Canada has strong building blocks in health research and innovation. We can further leverage them through strategic coordination, strategic policy and strategic investment.

As necessity is the mother of invention, patient care environments are exceptionally nurturing grounds for the development, commercialization and spread of innovation. Canada’s leading healthcare organizations have demonstrated this through major achievements in discovery science and in the generation of a significant number of spin-off companies, world-first medical discoveries, new treatments, products and services.

However, opportunities remain unexploited and barriers persist. We need national health innovation structures and processes that allow for: (1) the systematic identification of innovations to address persistent nation-wide problems; (2) incentivized pathways through which both disruptive and incremental innovations can be resourced, supported and implemented; (3) the coordination of a healthy research and innovation ecosystem, from basic and discovery science to population health. This must be matched with (4) increased strategic investments to strike the right balance between demand pull and supply push forces of innovation across all pillars or types of research; and (5) strategic procurement, use and uptake of our own innovations.

As such, in responding to the Panel’s questions, our overarching proposal will be that in addition to strategic coordination and investment in health research and innovation, Canada has the opportunity to leverage new and existing pathways, designed deliberately to accelerate the adoption, translation, dissemination and use of research and innovation in patient care settings. Examples of these pathways include: the Adopting Research to Improve Care (ARTIC) Project by the Council of Academic Hospitals of Ontario, Strategic Clinical Networks (SCNs) in Alberta, the Practice-Based Research Challenge in British Columbia, the Transforming Research into Care (TRIC) Program in Nova Scotia, and the designated hospital research centre model in Quebec. Leveraging up these “pathways” can take us from “invention by accident to innovation by design”.

Why are these innovative pathways particularly important? They add to the crucial generation of research evidence, the ability to expedite the implementation of this knowledge. They enable new products or services arising from our investments to solve important health or health system problems. They draw on the foundations of knowledge translation, implementation science, and the principles of strategic and change management. They demonstrate meaningful partnerships between researchers, clinicians, administrators, patients and families; achieve important outcomes; and leverage the role of organizations with the mission of the generation and integration of patient care, training and research, which benefits the entire system.

What do we propose as the role of the Federal Government? We believe the Federal Government has two
leadership roles: (1) **strategic investment to** ensure a healthy and coordinated research ecosystem – across all pillars of health research and a proposed Innovation Fund which we discuss this submission; and (2) a **strategic coordination role** to maximize existing resources and further foster both the generation and use of research and innovation to benefit all Canadians.

What do we propose as HealthCareCAN’s role? Building on the foundations of our members in patient care, academic healthcare, and the provincial bodies, we could play a unique convener role by:

1. Offering a **common voice** for healthcare organizations (our members) to identify where there is need, capacity, opportunity and appetite to address common issues and help spread solutions.
2. Helping to establish a ‘**Canadian Health Innovation Network’** to allow for coordination across existing priorities and resources in the health and life sciences. This would better leverage existing dollars.
3. Follow up on the recommendations of the Council of the Federation’s **Health Innovation Working Group**.
4. Serve as a **strategic clearinghouse** for research and innovation successes that can be spread and potentially implemented nationally in strategic areas (such as antimicrobial resistance etc.) using existing databases.
5. Help to coordinate and **leverage innovation pathways** that exist regionally and provincially (such as CAHO-ARTIC, Alberta Innovates- SCNs, Nova Scotia’s TRIC grants, to help achieve returns across the nation).

In conclusion, we believe that leveraging existing pathways, engaging in strategic coordination, and ensuring sufficient strategic investment, will improve the architecture of our health innovation system. Ultimately, this will result in better care, better health, and better value for Canadians, today and into the future.

**Responses to Questions from the Advisory Panel on Healthcare Innovation**

**Questions 1 & 2: Describe the innovation you want the panel to know about, its importance, enablers, barriers, success strategies, current state of spread, use internationally, and references and evidence that the innovation is cost effective and has resulted in improvement (e.g. better patient outcomes, efficiency, quality, safety, etc.).**

Between 2012 and 2014, HealthCareCAN member organizations were featured in over 6000 mainstream print media headlines relating to how research and innovation is modernizing the health system, developing new treatments, providing information to improve or maintain health, and helping to address public health issues. ¹

At HealthCareCAN we have captured these innovations in our “Innovation Sensation” database and we will be using this database to develop a “**Dragons’ Den**” concept whereby we will invite healthcare organizations’ Patient Advisory Boards and CEOs to assist in the selection of innovations for maximizing spread potential.

However, the one innovation that we would like the Panel to know about are process innovations or **pathways**, designed deliberately to accelerate the adoption, translation, dissemination and use of research and innovation in patient care settings. Such innovations are currently helping to address the “17 year problem” which refers in this context to the amount of time required to move new knowledge into practice.² They exist in all parts of our country. These pathways or process innovations from across the country may provide a solution set for persistent problems that we understand, but fail to solve because we don’t adequately consider local realities, resources, and implementation requisites.

For example, in Nova Scotia, the **Transforming Research into Care (TRIC) Program** is designed to facilitate translation of clinical science into better care and service delivery, quickly. Projects must be co-led by a dyad of researcher(s) and administrator(s). Funding from the TRIC program covers the research costs but all
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operational (department/unit) costs are absorbed by the health system and signed off by the Administrative co-lead. Examples from the 24 projects funded include improving transitions in care for medically complex and fragile children and youth to adult based care and the development of a web-based frailty portal to help reduce preventable emergency department visits and hospitalizations among frail elders.

In Quebec, the Fonds de Recherche Quebec Santé has assigned special funding and accountability to the academic centres for their role in research and innovation designed to address translational clinical research and health system problems. A similar program has also been utilized and evaluated in the successful Comprehensive Cancer Centres in the United States. These programs assign accountability to a group of healthcare organizations that are resourced, but also responsible for, the infrastructure and outcomes related to the generation and spread of innovation in their areas.

The Adopting Research to Improve Care (ARTIC) program from the Council of Academic Hospitals of Ontario’s was initiated with the aim of accelerating the implementation of research evidence into practice to drive quality care in Ontario’s research hospitals. Projects align with a system priority and are assessed and selected based on their research evidence system impact, feasibility of implementation and evaluation plan. They are supported through senior leadership support, clear governance, education and training, communities of practice and evaluation. Over the last four years, it has implemented five clinical practice changes and one technology across 82 hospital units. The program is now being expanded provincially.

In British Columbia, the Practice-Based Research Challenge was designed to allow practicing nurses to initiate and engage in research projects that solve a real problem in their practice contexts. Researchers guide clinicians through research methods and proposal development. Nurses conduct the research and ensure that it is implemented. To date, practice changes resulting from the program include the development of standards for hypothermia protocol initiation that will be shared across the province; a 13% increase in patients able to move on to independent forms of hemodialysis as a result of self-care programs.

In Alberta, Strategic Clinical Networks focus on clinical issues with a view to integrating clinicians, researchers, administrators and other team members around strategic issues of relevance to quality of care and the sustainability of the system. Each SCN has a research and innovation plan that assists in determining the research foci, the ability to deliberately disseminate knowledge for use in practice, the ability to reinvest any cost savings or revenue from commercialization of research into the research mandate of the SCN. Importantly, the SCNs also engage the community and members of the public.

What do these programs have in common? (1) They focus on translational and/or later stage research with a view to its integration or use in practice; (2) they pair researchers and administrators in a meaningful, serious and importantly, resourced relationship; (3) they select areas of focus strategically; (4) they engage patients, families, and clinicians; (5) the research methods and approaches matter; (6) the academic healthcare organization is asked to use its mandate and infrastructure to lift and leverage the research project and ties funding and accountability to that role; and (7) they pay attention to context and local realities. In short, the health provider organizations create supportive ecosystems that ‘pull-in’ and evaluate potential innovations at the point of care emerging through pipelines of federally funded discovery research.
Canada has an outstanding reputation for great health care and health research. This is due to many important building blocks that have been established in this country. However, tectonic forces from global conditions, to information and communication technology revolutions, demographic shifts, and limited resources require us to collaborate more to maintain our tradition of excellent research and exemplary healthcare internationally. Who is responsible for this? In a 2013 poll Canadians at large were asked who they believe has primary responsibility for introducing research and innovation into the healthcare system. The top two groups were the Federal Government and Canada’s research hospitals, academic regional health authorities, and their research institutes. Physicians, nurses, pharmacists and administrators respond in a similarly to this question.

As such, for healthcare organizations and patients who continue to suffer the effects of disease and disability, we can and must do more. We need to better align the interests of the federal government and those of Canada’s research hospitals, academic regional health authorities and their research institutes. We also need to ensure that their provincial and community partners are engaged. Currently in Canada, there is no nationwide policy or funding for those organizations who achieve national and international impact through their own more entrenched investment in research, innovation, and its spread and uptake. We are funding health research and innovation in a cobblestone framework. We are leaving a crucial function to chance.

We believe that the Federal Government has two principle levers when it comes to incenting the generation, use, and spread of innovation: strategic coordination and strategic investment. We support the call made by the Jenkins’ Panel for a Federal presence for Innovation. We would further recommend this be supplemented by a coordinating subgroup for the health and life sciences. Why is this important? We need better coordination and collaboration across the range of funders and stakeholders within the health, research and innovation ecosystem. We need to ensure that we are not allowing critical multidisciplinary health research to fall between the cracks of what is funded under health versus engineering or the social sciences. Capital and operating grant opportunities need to be coordinated to create new technologies, equipment and models of care. Granting councils must ensure they are not competing with their applicants for limited matching industry, provincial or philanthropic dollars. Our indirect costs and technology transfer programs must be examined along international standards. Finally we need to correct operational idiosyncrasies frustrating health innovation efforts (e.g. false dichotomies between care and research, procurement policies, etc.).

Next, we need to better leverage local health innovation and commercialization capacity. Perhaps due to the provincial mandate of healthcare organizations, there is trepidation at the national and federal levels to acknowledge the important role of academic healthcare organizations in the Canadian health innovation agenda. All too often, healthcare is either an afterthought or subsumed with universities. Yet, without active engagement of patient care environments, who bare costs for this, it would be virtually impossible to generate and use health research and innovation safely.
What can the Federal Government do to correct this? It can ensure that the role of healthcare organizations in the health research and innovation endeavour, are explicitly represented in federal R&D related initiatives and funds. Second, it can take the bold and historic move of creating a federal policy space or recognition program that would deliberately allow the Federal Government to leverage the role of leading healthcare organizations nationally in generating and spreading innovation to the benefit of all Canadians and other crucial organizations in the healthcare system. Third, it can provide coordinating resources and support to address operational barriers in bringing new medicines, devices and vaccines to Canadians. In this regard, we commend the Minister of Health and the Federal Government for its announcement of the Canadian Clinical Trials Coordinating Centre in April 2014.

A third area in need of stepped up strategic coordination is strategic procurement and tax policy. Our lowest cost purchasing policies at the local and provincial levels preclude us from giving our own innovators a chance to bring products and services safely to market in our own country. Canada must align its local, provincial, and national procurement policies in consideration of both health and prosperity. Most importantly, we are asking this Government to increase the HST rebate on all eligible purchases made by publicly funded, not-for-profit institutions in the health sector to 100% (putting hospitals on par with municipalities under the so-called “MUSH” formula) and offering the same tax treatment to all research dedicated to improving the health of Canadians as the sector itself. This will help bring new and effective drugs, devices and care to the bedside.

However, while strategic coordination is essential, it will not get us to where we need to be without significant strategic investments. According to the CIHR Act, the mandate of our country’s premier health research granting council is to “excel in the creation of new knowledge and its translation”. However, its current $1 billion annual budget is not sufficient to engage in both of these mandates. This is not sustainable. Accordingly, we propose that a Canadian Healthcare Innovation Fund be created that would: (1) repatriated the current CIHR budget to the institutes, researchers, and open grants programs by creating a separate pot of funding for strategic and signature initiatives; (2) incentivize and match funding for provincial knowledge to practice pathways and programs; (3) explore a credentialed research hospital system for those organizations taking a leading role in research, education and innovation endeavours, linking accountability for innovation infrastructure and performance; (4) create a Canadian Health Innovation Network as described earlier; and (5) bring focussed attention to the discussion and spread of clinical practice guidelines and innovations in crucial areas such as anti-microbial resistance, pandemic planning, drug shortages, etc. 19

We also believe that current dollars can be better leveraged. We can tap into the $500 Billion in what the former Governor of the Bank of Canada referred to as “dead money” and support public-private partnerships in areas of health where we have the potential to compete globally, for example, in large scale clinical trials.

**Question 5: Thinking about the range of areas in healthcare that are undergoing change, which approaches have the greatest potential to deliver improve value for money?**

In conclusion, we believe that focussing on the architecture, infrastructure and pathways through which research and innovation can be integrated more efficiently and effectively into care, is one of the most impactful ways to bring a large set of innovations into our healthcare system quickly. This will have the greatest potential to create better health, better care, and better value for all.
Notes
1 Members of HealthCareCAN include among other organizations, the country’s research hospitals, regional health authorities, and their research institutes. They have a tripartite mandate of patient care, training and research.
2 Morris, Z. S., Wooding, S., & Grant, J. (2011). The answer is 17 years, what is the question: understanding time lags in translational research. Journal of the Royal Society of Medicine, 104(12), 510-520.
3 Information on TRIC program can be found at: http://www.cdha.nshealth.ca/discovery-innovation/qeii-fdn-tric-grants
4 It is funded by the IWK Health Centre Foundation and the QEII Health Sciences Centre Foundation through community donations which speaks to the clarity of purpose being achieved through this type of program
5 See: http://www.cdha.nshealth.ca/discovery-innovation/qeii-fdn-tric-grants
6 Birmeyer, Nancy JO, et al. "Do cancer centers designated by the National Cancer Institute have better surgical outcomes?" Cancer 103.3 (2005): 435-441
7 Initiated by the Council of Academic Hospitals of Ontario (CAHO) and funded by the Ministry of Health & Long
8 Project selected for the CAHO ARTIC program must already be proven and implemented in at least one organization
9 Enablers include strategic selection of initiatives, executive leadership, a clear governance, education and training, communities of practice and evaluation. As such, evidence implementation and change management require an investment of time, resources and funding to achieve optimal impact and outcomes
10 CAHO ARTIC has been externally evaluated. In partnership with Health Quality Ontario the program will be expanded to include health care organizations across all sectors
11 Health Quality Ontario is the provincial body mandated with the oversight of the province’s quality agenda –
12 Funded by the Office of Chief Nursing Officer, the British Columbia Nurses Union, UBC, academic centres, and others.
14 Ibid
18 For example, in the Canada Research Excellence Fund and the Building Canada Knowledge Infrastructure Fund, the country’s healthcare organizations are required to go through their university.