

# **UNLEASHING INNOVATION: Excellent Healthcare for Canada**

## **EXECUTIVE SUMMARY**





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On June 24, 2014, the Government of Canada's health minister, the Honourable Rona Ambrose, launched the Advisory Panel on Healthcare Innovation. The Panel was charged with identifying the five most promising areas of innovation in Canada and internationally that have the potential to sustainably reduce growth in health spending while leading to improvements in the quality and accessibility of care. The Panel was also asked to recommend ways the federal government could support innovation in those five areas.

Since then, the Advisory Panel on Healthcare Innovation has been learning and deliberating more or less non-stop. In the course of its work, the Panel received scores of submissions from organizations and individuals, conducted on-line consultations, crisscrossed the country for in-person discussions with a wide range of stakeholders, reviewed literature and commissioned research studies, and spoke with experts in both domestic and international healthcare policy.

These interactions consistently brought home two points.

First, consistent with polls showing that Canadians are concerned about the state of their healthcare systems, the Panel heard from many stakeholders who see the need for fundamental changes in how healthcare is organized, financed, and delivered.

The Panel's review suggested that these concerns were well-founded. While Canada's healthcare systems remain a source of national pride and provide important services to millions of Canadians every week, the scope of public coverage is narrow, and their overall performance by international standards is middling, while spending is high relative to many OECD countries. Canada also appears to be losing ground in performance measures relative to peers.

Second, pockets of extraordinary creativity and innovation dot the Canadian healthcare landscape. Local, regional and even provincial programs worthy of emulation have simply not been scaled-up across the nation.

Many barriers to effective scaling-up were identified by stakeholders. One key challenge was the lack of any dedicated funding or mechanism to drive systemic innovation. As well, the fragmented nature of the system

– with separate budgets and accountabilities for different provider groups and sectors – emerged as the most important structural barrier to both new reform initiatives and effective scaling-up of well-tested ideas and programs. This shortcoming appeared to be operating in a vicious cycle with slow deployment and incomplete utilization of modern information technology.

The Panel observed further that Canada's healthcare systems appeared to be ill-prepared to respond to various shifts in their context. Patients are demanding more participation in their own care and engagement with the design of healthcare programs. As the population ages, there will be a greater premium on seamless delivery of multi-disciplinary care across diverse settings, not least the patient's place of residence. The digital revolution continues to disrupt many enterprises, and sooner or later will transform healthcare. Moreover, accelerating advances in biotechnology are now ushering in an exciting but challenging new era of precision medicine. Canada has pockets of research leadership in this field, but only one small province has taken steps towards implementation of the required learning systems to make precision medicine a clinical reality.

Meanwhile, polling data show that the majority of Canadians no longer believe that an increase in operating funds is the primary solution to the perceived shortcomings of their healthcare systems.

## Critical Areas for Healthcare Innovation

Weighing all these inputs, and consistent with its mandate, the Panel identified five broad areas where federal action was important to promote innovation and enhance both the quality and sustainability of Canadian healthcare. These were:

- patient engagement and empowerment
- health systems integration with workforce modernization
- technological transformation via digital health and precision medicine

- better value from procurement, reimbursement and regulation
- industry as an economic driver and innovation catalyst.

To make recommendations for action on these fronts, the Panel first examined the federal government's role in the evolution of Canada's universal healthcare systems.

## The Evolving Federal Role

In the 1950s and 1960s, federal investments built capacity for healthcare across Canada, and, through conditional cost-sharing, induced provinces and territories to adopt universal coverage for hospital costs and physician services on more or less uniform terms. Those conditions were weakened by new cost-sharing arrangements in the 1970s, but reaffirmed in 1984 with the *Canada Health Act*.

Starting in the 1980s and intensifying through to the mid-1990s, successive federal governments unilaterally reduced transfers to the provinces and territories. Fiscal circumstances eased, and from the late 1990s to 2004 Ottawa steadily augmented funding for healthcare. By agreement, these new funds were earmarked to achieve specific objectives, albeit distributed on a formulaic basis. The largest of these initiatives moved an additional \$3.2 billion per year to the provinces and territories. Some laudable progress was made – for example, waiting times for specific services were reduced. However, the Panel's view is that, overall, this period and these investments led neither to modernization of the architecture of Canadian healthcare, nor to serious broadening of the scope of public coverage.

The last 'Health Accord' of this nature committed the federal government to make six percent annual increases in the Canada Health Transfer. In 2011 the federal government unilaterally determined that, after expiry of the 2004 agreement and starting in 2017-18, it would reduce the annual rate of growth to the rate of GDP growth or three percent per annum, whichever was larger.

Already facing fiscal pressures, the provinces and territories have intensified their cost containment measures and responded with collaborative initiatives such as group purchasing of prescription pharmaceuticals. However, in the Panel's view, these and other commendable front-line efforts to improve healthcare and augment its value are

limited in part by a serious shortfall in working capital, and the absence of a cadre of dedicated and expert personnel who can support efforts to initiate and scale-up improvements in healthcare across Canada.

## Collaboration for Healthcare Innovation: New Model, New Agency, New Money

The Panel understands that sustaining six percent compounded growth in the federal transfer is difficult in the present fiscal circumstances. It has not recommended any changes to the current plans for transfers. It has also rejected a return to earlier approaches that depended on unanimously agreed priorities and formulaic allocations of funds. Instead, having examined the scope and scale of the problem, and having examined international and domestic precedents, the Panel is recommending two key enabling actions.

The first enabling action is a consolidation of the mandates of three existing agencies and expansion of capacity to create a new vehicle for accelerated change. As a placeholder, this agency has been termed the Healthcare Innovation Agency of Canada (HIAC). The choice of existing agencies for inclusion in HIAC is a reflection not on their performance but on the centrality of their missions to the task of transforming Canadian healthcare, and the synergistic impacts to be achieved from drawing them together and scaling up their activities as needed. HIAC would accordingly draw on staff from the Canadian Foundation for Healthcare Improvement, the Canadian Patient Safety Institute, and, after a transition period for completion of its existing projects, Canada Health Infoway.

The second enabling action is the provision of fuel both for that vehicle and to support provinces and territories as they strengthen their healthcare systems with fundamental reforms and work with stakeholders to scale-up well-tested innovations. These funds would flow to 'coalitions of the willing' – jurisdictions, institutions, providers, patients, industry, and committed innovators of all backgrounds. Again as a placeholder, this has been termed the Healthcare Innovation Fund (hereafter, the Fund, for short).

**About the new Agency:** As exemplified by seven pan-Canadian health organizations and the Canadian Institutes of Health Research (CIHR), this approach to supporting

national collaboration in specific areas has been used for more than two decades. CIHR is the largest of these entities with an annual outlay of approximately \$1 billion per annum. However, its primary mandate has been – and should remain – the funding of academic research. Each of the other entities has a specific focus on elements of innovation, and each can claim unique strengths. However, none has had a broad innovation mandate, and none has anything like the scale to take on such a role. In contrast, HIAC as a new Agency would be dedicated to catalyzing change in real-time, evaluating the impacts of those changes, and accordingly rejecting, revising and re-evaluating, or scaling-up the resulting innovations.

HIAC should be an arm’s length organization, supported through the Healthcare Innovation Fund, governed by a group of eminent Canadians appointed on merit alone, and linked to one or more advisory committees composed of representatives of a range of stakeholders, not least provincial and territorial governments. Its corporate structure should enable it to provide robust, independent oversight and direction for a range of projects, including those fielded across Canada with support from the Innovation Fund.<sup>i</sup>

**About the new Fund:** The Healthcare Innovation Fund’s broad objectives would be to effect sustainable and systemic changes in the delivery of health services to Canadians. Its general goals would be to: support high-impact initiatives proposed by governments and stakeholders; break down structural barriers to change; and accelerate the spread and scale-up of promising innovations. It would not be allocated on the basis of any existing transfer formulae, nor would its resources be used to fund provision of healthcare services that are currently insured under federal, provincial and territorial plans. Allocations would instead be made on the basis of rigorous adjudication against transparent specifications, having particular regard for measurable impacts on health outcomes, creation of economic and social value, sustainability, scalability, and a commitment by partners to sustain those innovations that are demonstrably successful.

The Panel recommends that these two initiatives should begin as early as possible in the mandate of the Government that will take office after the election of October 2015. The

outlay from the Fund should rise as needed, with the expectation that a steady-state target of \$1 billion per annum might in ideal circumstances be reached as early as 2020. The Agency and the Fund would be important enablers for many of the specific recommendations made by the Panel in each of the five identified areas that are priorities for innovation. Unless otherwise specified, the Fund and HIAC should be assumed to be the leads from the federal side in what follows.

## Theme 1: Patient Engagement and Empowerment

The Panel reviewed evidence showing a large gap between the rhetoric of patient-centred care and the experience of many patients and families in modern healthcare systems. It was also encouraged by many teams, institutions and systems in Canada that have been taking positive steps to bridge rhetoric and reality. At a system or subsystem level, the Panel recommends implementation of various models of payment and accountability organized around patients’ needs, rather than the existing revenue streams of providers and institutions. At the institutional or regional level, priority must be given to implementation and scaling-up of the many programs that have yielded positive results as regards patient-centred care and patient and family engagement in the design and evaluation of healthcare programming and systems.

The Panel has also identified an acute need for developing and implementing information tools for patients in two distinct areas. The first is the promotion of health and healthcare literacy. The second is the scaling-up of best practices in the use of patient portals, ensuring that patients effectively co-own their health records. Patient engagement and co-ownership of health records would be further facilitated through mobile and digital health solutions that enable virtual care and empower patients, while meeting common standards and interoperability requirements. The role of government in this milieu will be very different than was the case when Infoway began building information infrastructure in 2001. As outlined under Theme 3, a transition in structures and roles is warranted.

<sup>i</sup> The combined enterprise represented by the Agency and Fund might be reflected by a collective moniker, such as Healthcare Innovation Canada.

## Theme 2: Health Systems Integration with Workforce Modernization

The Panel observed substantial symbiosis between an integrated healthcare system and an innovative one. US group health plans illustrate how, even within a very challenging context, integrated healthcare systems offer patients enhanced access, along with high quality care from multi-professional and multi-specialty teams, at costs lower than current Canadian per capita spending. Supporting the implementation and iterative improvement of integrated healthcare demonstrations and ‘bundled payment’ models must accordingly be a high priority for the Agency and Fund. Where possible, demonstrations should be implemented that integrate healthcare and social services or that otherwise provide specific incentives to addressing social needs, protecting and promoting health, or preventing disease.

These shifts in payment and accountabilities operate synergistically with changes in professional roles and responsibilities. Best practices in inter-professional care should be scaled-up, with particular attention paid to implementing the recommendations of the Canadian Academy of Health Sciences report on *Optimizing Scopes of Practice* (2014). In a similar vein, the Panel recommends a collaborative national initiative to examine roles, responsibilities, and payment of health professionals in relation to generation of value.

These general priorities for more integrated care carry additional weight in the realm of Aboriginal healthcare. A number of recommendations are accordingly directed to Health Canada and its First Nations and Inuit Health Branch on this topic. Among these are co-creation of a First Nations Health Quality Council and a parallel liaison committee for Inuit representatives, drawing together Aboriginal representatives and patients, and representatives of provincial and territorial governments. Experimentation is already underway with new models of co-governance of health services for First Nations; the Panel urges continued exploration of these models along with careful evaluation, ensuring always that service transfers are commensurate with resources. A range of other concerns have also been surfaced for action. *Inter alia*, these include: improved health infrastructure and health human resources for reserves, the administration of the Non-Insured Health Benefits program and its integration with provincial and territorial systems, and the need for new models of care that will mitigate costs and burden of travel.

## Theme 3: Technological Transformation via Digital Health and Precision Medicine

A third priority for innovation is to capitalize on the exciting developments underway in the generation and application of health data and knowledge.

**About Health Data and Electronic Health Records:** Development of info-structure has accelerated in Canada, with wider uptake of electronic health records. However, Canada lags on many fronts, including meaningful use of those digital resources, secure access to patient records by authorized users to enable safe and seamless care, assurance of digital access to their own records for patients, development of virtual care applications, and achievement of sufficient inter-operability and standardization of data to permit more effective use of all these data for performance measurement and advanced analytics. The Panel has recommended action on all those fronts.

As noted earlier, the Panel envisages the short-term continuation of Canada Health Infoway, with bridge funding that will enable it to complete current projects. Thereafter, as the agenda shifts from info-structure to uptake and applications, Infoway would merge into HIAC and all further funding for its partnerships should flow through the Fund.

Canadian Institute for Health Information (CIHI) would be supported to provide greater transparency about healthcare in Canada and to lead ‘open data’ efforts. CIHI would also be expected to pursue more intensive data-gathering on three fronts: the 30% of healthcare spending that flows from private sources; health services for, and health of First Nations, working in partnership with the First Nations Quality Council; and patient-oriented outcome measures. CIHI and the new Agency would partner with provinces and territories to develop information appropriate to support integrated delivery models, including different forms of bundled payments. Lastly, CIHI would need to ensure greater information dissemination to a range of audiences – particularly the general public — of the information it gathers.

**About Precision Medicine:** The rapid development of sophisticated biomarkers is disrupting the prevention, diagnosis, and treatment of illness – indeed, redefining existing diseases and their prognoses. Canada has pockets of strength in precision medicine, and a nascent research strategy has been led by CIHR. However, what is notably

absent is a national strategy for innovation, i.e., implementing these concepts into front-line care. For example, the Panel saw meaningful scope to improve the use of prescription drugs by applying these techniques – but limited uptake. The Panel’s recommendations are designed to ensure that Canada’s diverse populations and single-payer healthcare systems can be leveraged to our national advantage. It is particularly important to develop and begin following a roadmap to ensure that Canada’s healthcare information and communications technology will support these data-intensive models of care and the rapid-cycle innovations that characterize precision medicine as a field. The Panel also urged the scaling of models of care in subfields of precision medicine that are relatively more mature, such as pharmacogenomics and cancer diagnosis and treatment. It perceives that there is substantial potential for the commercialization of made-in-Canada concepts and tools in the precision medicine field, provided that a nimble implementation strategy can be launched as recommended.

#### Theme 4: Better Value from Procurement, Reimbursement and Regulation

As noted, on a value-for-money basis in healthcare, Canada is lagging many peer nations. The Panel concluded that changes to healthcare finance, purchasing and regulation could improve the value received by Canadians in areas such as prescription drugs, physician services, and medical technologies. Most of the related recommendations are directed to Health Canada or existing federal agencies.

Pharmaceutical products stood out as a concern, given Canada’s extremely high per-capita outlays, our outlier status as a country with universal healthcare programs but inequitable and uneven coverage of prescription drugs, and the cost pressures looming from new biological compounds. The Panel strongly supports the principle that every Canadian should be able to afford necessary drugs, but sees demonstration of wide improvements in pricing as a prudent precursor to extending coverage, and is concerned that, absent integration and alignment of incentives, a new stovepipe of spending on pharmaceuticals may not have the anticipated cost-control effects. To this end, it has recommended that existing federal drug plans reaffirm their desire to join the Council of the Federation’s pan-Canadian Pharmaceutical Alliance and that HIAC offer to serve as the secretariat, in conjunction with exploring strategies to extend the reach of this alliance to

private insurance plans.

In contrast to current industry practice of confidential rebates, the Panel supports a national push for full transparency of net prices paid, so that all stakeholders have enough information to make informed choices. As well, the high price of pharmaceuticals and move to collective procurement both suggest the need for a review of the policies and practices of the Patented Medicines Pricing Review Board.

Last, the Panel observed that some effective technologies and practices are slow to diffuse, while obsolete technologies and practices persist. To this end it recommended funding for, and careful evaluation of the impact of, *Choosing Wisely Canada*.

#### Theme 5: Industry as an Economic Driver and Innovation Catalyst

Other nations are adopting policies designed both to nurture a domestic healthcare industry and to reshape interactions with multinational companies that provide healthcare goods and services. The underlying motivation is clear: publicly-funded healthcare is invariably a valued social program, but can also contribute to economic development. The Panel’s review found that Canada lags other jurisdictions such as Denmark and the UK in policies and processes of this nature. In particular, for both drugs and devices, Canada’s regulatory environments and markets are characterized by fragmentation, duplication, and inconsistencies.

The Panel has accordingly recommended a number of changes, including creation of a Healthcare Innovation Accelerator Office, to be housed in HIAC, focused on accelerating the adoption of potentially disruptive technologies that show early promise of value for money to the system and benefit for patients. HIAC should also support the spread and scale-up of improved procurement processes, e.g. value-based approaches and best practices such as the competitive dialogue process used by the European Union and MaRS Excite.

Some of the recommendations in the recent *Review of Federal Support to R&D (2010)* will require customization for the unique features of healthcare enterprises, but are highly relevant to health-related Canadian companies, particularly small and medium-sized enterprises. In this regard, drawing on insights from the 2010 Review, Health

Canada should work in tandem with a range of stakeholders inside and outside the federal government to develop a whole-of-government strategy that would support the growth of Canadian commercial enterprises in the healthcare field.

In the chapters covering Themes 4 and 5, the Panel is recommending a number of improvements to the mechanisms for assessing and regulating drugs and devices, targeting variously Health Canada and its Health Products and Food Branch, and the Canadian Agency for Drugs and Technologies in Health (CADTH). Under theme 5, the Panel urges attention to regulatory enhancements that might reduce duplication and enable higher quality and faster reviews without compromising Canada's current standards for drug and device safety.

## Consensus and Fairness as Healthcare Evolves

**A Federal Role in Consensus-Building:** Many of the Panel's recommendations have cross-cutting implications. For example, a more integrated healthcare system has a much higher probability of yielding a patient-centred experience than one in which patients and families navigate a poorly coordinated care with uneven coverage and incomplete sharing of health records. In the same vein, interwoven through the report are a number of recommendations that broadly enable innovation through consensus-building with or without related legislative or regulatory action. They are gathered and summarized here.

Technological and social innovation in healthcare have already generated a variety of ethical and legal issues. The Panel recommends that Health Canada in partnership with the new Agency should take the lead in consultation and consensus building across provinces and territories to anticipate such issues, and resolve legislative ambiguities as needed. Obvious pressure points are physician-assisted dying and genetic discrimination. However, a national consensus is also needed on protection of patient privacy while enabling innovation (e.g. in precision medicine and genomics, mobile health, and various forms of digitized health records). The Panel has been similarly struck by continued confusion – and the potential of inter-jurisdictional inconsistencies – on the matter of patients' access to and co-ownership of their personal health records. Last, but not least, in an era when Open Data and Big Data are seen as twinned enablers of data-driven innovation, Canadian governments and research agencies have failed

to forge a consensus on how broad sharing of appropriately anonymized health-related data can safely occur across and within jurisdictions. As noted, this is critical not only for rapid innovation in the field of precision medicine, but for enhancing applied health research and data-driven innovation in Canada's healthcare delivery systems.

**Financial Fairness in a Period of Transition:** Canada's total proportion of private spending on healthcare has been more or less stable at 30% since the late 1990s, but out-of-pocket spending is rising in relative terms. This is associated with an inequitable burden on lower-income Canadians. The inequitable distribution of this burden will also be exacerbated by population aging given that about \$6 billion was spent out-of-pocket on long-term care and billions more in other supplies and services that are used at a much higher rate by senior citizens.

In recommending changes to tax policy that will enhance fairness, the Panel emphasizes that these are transitional measures: they do not vitiate the need to achieve universal coverage for prescription drugs nor the adoption of new delivery models that might allow cost-effective expansion of public coverage.

The Panel's core recommendation in this regard is an income-scaled Refundable Health Tax Credit (RHTC). The RHTC would replace the existing supplement and, like that supplement, be applied in conjunction with the existing Medical Expense Tax Credit. The RHTC would provide tax relief of 25 percent on eligible out-of-pocket healthcare expenditures up to \$3,000 per year, starting with the first dollar spent on eligible expenses. Additional expenses would be claimable under the existing Medical Expense Tax Credit. Provinces would have the option of adopting the new credit in their tax systems, thereby potentially increasing its value.

Related recommendations address how the administration of the RHTC could be structured to help ease the cash-flow burden of out-of-pocket health costs on individuals and families with modest incomes. Furthermore, the cost of this credit would be fully offset both by cancelling the existing supplement and, more importantly, by taxing the employer-paid premiums for employer-sponsored private health and dental plans. This expense, however, would be considered as a qualifying medical expense under the new RHTC and/or METC, meaning that employees could claim it on their income tax return. The Panel believes that these measures, in their totality, enhance fairness among taxpayers, as well as helping to mitigate an unfair and



growing burden of out-of-pocket healthcare costs on Canadians with modest incomes.

fundamental changes in incentives, culture, accountabilities, and information systems.

## Concluding Reflections

The collection of universal healthcare insurance programs colloquially known as ‘Medicare’ continues to offer essential services to millions of Canadians, and remains the nation’s most iconic social program. However, Medicare is aging badly. The Panel has been left in no doubt that a major renovation of the system is overdue, and is chagrined and puzzled by the inability of Canadian governments – federal, provincial, and territorial – to join forces and take concerted action on recommendations that have been made by many previous commissions, reviews, panels, and experts.

At the outset of the current review, Panel members sensed that some stakeholders expected a quasi-commercial ‘Dragon’s Den’ exercise – the tidy delineation of five quick fixes or big trends, a spotlight on a few made-in-Canada solutions offered by enterprising teams in the private or public sectors, and some policy palliatives that would justify placing healthcare on the federal backburner. Panel members, including the late Dr. Cy Frank, believed in contrast that their mandate could only be fulfilled by taking a wide-angle view of healthcare innovation.

To that end senior officials in Health Canada have consistently supported the Panel members in their work, and taken in stride the fact that some of the Panel’s findings might shine a critical light on the Department itself. For her part, Minister Rona Ambrose has been meticulous in respecting the Panel’s independence. The Panel would add that by excellent example, the Minister has illustrated the positive role that facilitative federal leadership can play in Canadian healthcare. It bears repeating, however, that no elected or appointed officials of any government, not least the Government of Canada, should be assumed to endorse any of the interpretations, opinions, or recommendations advanced in the report.

In conclusion, the Panel reiterates that, with bold federal action and prudent investment, and with a renewed spirit of collaboration and shared political resolve on the part of all jurisdictions, Canadian healthcare systems can change course. What has accordingly been proposed in the report is specifically designed to move Canada toward a different model for federal engagement in healthcare – one that depends on an ethos of partnership, and on a shared commitment to scale existing innovations and make

The Panel does not pretend that this model offers an immediate remedy for the ills of Canadian healthcare. However, we have a high degree of confidence that concerted action on our recommendations can and will make a meaningful difference that will be seen and felt across Canada by 2025. With collaboration by all levels of government and healthcare system stakeholders, there is no reason why Canada cannot reclaim the international leadership position in healthcare that this country once proudly held. We urge Canadians to settle for nothing less.

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