Innovation and Transformation
in Health Systems

A Primer for the BC Health Authorities’ Leadership Council

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September 2012

Paper done by IHSTS for BC Health Authority leadership discussions - October 10, 2012.
Introduction

This paper is intended to be a high-level overview of health system innovations and transformations. Written specifically for BC health care leaders, the paper examines the meaning of innovation and transformation, providing a review of national and international examples of innovation; it is not meant to be a comprehensive summary. We discuss primary care renewal, telehealth and various other initiatives, as positive changes in Canada and mention the recent premiers’ report on innovation, the BC Conversation on Health and the BC Health Innovation Fund. From there we examine innovations and transformations in England and Sweden. The paper ends by providing an overview of how leaders can implement these kinds of innovations and transformations.

We are hoping that this document, in concert with other initiatives, will spurn action. We include Canadian innovations here while emphasizing that Canada is behind most OECD nations in the redesign of health systems. This reality, while not positive at present, is one that can be improved upon and great progress can be made.

Innovation and transformation efforts around the world have limited evaluations so we are not clear about the impacts on population health or system functioning; while impressive changes have been made, no country’s transformation efforts have yielded completely sustainable health systems. A great deal of work lies ahead, in all countries.

What is Innovation? What is transformation?

While sometimes innovation and transformation are used synonymously, their meanings differ. Innovation is a new method, idea or device. Innovations may be achieved in products, processes, organizational methods and workplace relations. In other industries, innovation has been found to increase revenue growth by 78%, customer satisfaction by 76%, productivity by 71%. Innovations in health care lower cost and improve quality. Figure I is an innovation schema; there are many other ways to illustrate innovation.
Transformation is a change in form, appearance, nature, or character. It is a foundational alteration in the way in which health systems are conceptualized, designed and do business. Innovation is a catalyst for transformation. Literature on the implementation of large-scale system change offers a few theoretical and practical guides for such overhaul; the Consolidated Framework for Implementation Research (CFIR) and the Tyler Collaboration model are a couple of these which have been tested in the health sector.

Does the Canadian health system require innovation and transformation?

The Canadian health system is unsustainable financially and otherwise; costs continue to increase and continuing “business as usual” will not meet growing demand. Canadian governments currently spend $200 billion a year nationally; most provincial governments spend half of their budgets on health systems. Health system costs outdistance the growth of
Canada’s GDP while demand continues to grow, partly due to increased rates of chronic conditions. Most of our system is based on short-term, acute, episodic care—not adapted to the current reality of long term health problems that require more education, health promotion and disease prevention. Self-management, peer-to-peer support and group-based courses on chronic conditions, proven to improve outcomes and save costs, are a small feature of the health services landscape.

On the whole, patients report satisfaction with hospital care and it seems to function relatively well for acute problems. On the other hand, patient safety is a serious concern, specifically in our hospitals. Costs continue to spiral, partially as the price of patented pharmaceuticals take a greater share of the pie; physician and surgeon services are the greatest single cost to the system.13 Primary care is in crisis; while community health centres, nurse practitioners and other viable solutions exist, political quagmires have prevented them from proliferating. Canada ranks near the bottom of OECD (Organization of Economic Cooperation and Development) nations in terms of quality of our health system and its outcomes.14 Finally, reducing and eliminating social and economic inequities will make a significant impact on health outcomes. Redesigning health care systems—the focus here—would also improve health outcomes.

**What are the Goals of Innovation and Transformation in Health Systems?**

Transformations should produce better health and better care at better value, so they improve health status, improve quality and decrease cost. They ought to create evidence-based, patient-centred collaborative, integrated care systems.
Where do Lean and other productivity and efficiency improvements fit in?

Lean management techniques and other types of efficiency improvements are helpful process innovations. They are not, in and of themselves, large scale systemic innovation yet are useful components of it. Canadian health systems need a fundamental overhaul to increase quality, access, outcomes and sustainability. Incremental or other small changes that tweak the system, while helpful, ought to be part of a larger, orchestrated commitment to creating organization-wide cultures of innovation. Engaging all stakeholders to create high performance teams that are accountable and transparent is also central to transformation. Engaging patients and their families in care decisions improves outcomes and curbs costs.¹⁵

Canadian innovations

In government documents, innovation is touted as the solution to many problems. The gap between the talk and the walk, however, remains wide. In addition, projects that do exist tend to be lacking in system-wide change. While Canada has done well in the creation of inventions, we lag behind in the adoption of innovations.¹⁶ Very few transformative projects exist on the ground.

Many promising initiatives, however, exist in every jurisdiction. For example, InspireHealth, an evidence-informed cancer centre in BC offers nutrition, exercise, emotional and spiritual support to complement standard cancer treatments. It is the first of its kind in Canada and the provincial government has helped to fund its expansion. BC Women’s has some unique programs, such as Oak Tree, the only integrated HIV program for women in North America that brings adult, obstetrics and pediatric services into an integrated system of care in an interdisciplinary care team; patients have experienced 0% vertical transmission of HIV from pregnant women to infants since 1997 for all pregnant HIV+ women who have been engaged in care; housed in BC Women’s is also the FIR Program, which is a supportive in-hospital program for substance-using pregnant women and.¹⁷ SheWay is another program for mothers who use addictive substances and has been cited worldwide for its exemplary work with Indigenous women. The Quick Response Team (QRT) in Victoria provides people who would normally be in
the ER with care at home, decongesting local ERs. Impact BC has started to make an impact on patient participation in the health system as well as quality improvements.

In Calgary, full-spectrum palliative care services assist people to die out of the hospital so that less than 40% of people with cancer pass away in hospitals; in the rest of Canada, 70% of those with cancer die in hospitals. This kind of palliative care program was begun in the Fraser Health Authority. In Saskatoon, less than 1% of hospital beds have nursing home patients in them because of comprehensive home care service provision. In the NWT, public health nurses provide comprehensive services to people living with diabetes and have demonstrated that kidney loss is not an inevitable result of diabetes. Sault St Marie’s Group Health Centre provides home care nursing for patients and has created a 60% reduction in hospital admissions.18

Below we detail primary care and telehealth as these were seen to be promising in an extensive international study of health system innovations.19 While LEAN management and other efficiency and productivity efforts are laudable and making a positive impact on flow, reducing some congestion in hospitals, we do not discuss it in this background review as the focus is on transformation.

**Primary Care Innovations**

The Cardiac Health Awareness Program (CHAP), based in Ontario, has won numerous national and international awards for its collaborative, multi-pronged, community based health promotion and prevention programme targeted at older adults which has reduced cardiovascular morbidity in communities.20

In Quebec, the Family Group Model integrates teams of physicians, nurses, social workers, occupational therapists, physiotherapists and other providers under one roof. This is an innovative team approach to caring for those with chronic conditions ensures that patient education, provided by nurses, is a strong component of service provision. This model also provides continuity of care, access to health care providers after hours and on weekends and provides better monitoring. It also connects patients to other services such as long term care, specialist services and so forth.21
Community health centres all over Canada provide similar integrated care all over Canada. They offer services of various providers under one roof, providing health promotion, disease prevention, treatment, rehabilitation and palliation—a broad spectrum of services. Most use a salaried model for all team providers.

Integrated Health Network services, provided in some parts of BC, include: assistance in identifying patients at risk; comprehensive patient assessments by members of an interdisciplinary team; integrated care plans; direct patient referrals to specialized services such as diabetes education centres; support for building patient registries; self-management coaching; individualized action plans. The BC government has also taken steps to incentivize family physicians to counsel at risk patients on diet, exercise, smoking; each family doctor is paid extra for this counselling, for up to 100 patients per year.

Making changes to one part of the system, such as primary care, while useful, will not result in transformation. Integration of all parts of the system—population health services, primary, secondary and tertiary care—is required for system level innovation and transformation.

**Telehealth Innovations**

As one of the world’s largest nations, Canada is a leader in telecommunications technologies. Telehealth is one off-shoot of these technologies. Telehealth refers to the use of communications technologies such as telephones, computers and videos, to communicate health information. Telehealth helps clinicians consult with each other about patient health issues and helps patients connect with health providers. Patient records, x rays and other data can be transmitted through telehealth networks. Telehealth can also provide a platform for distance education, self-care support, peer-to-peer support and so forth.

Ontario’s Telehealth Network (OTN) is one of the largest in the world and has won awards for applying technologies to aid in improving health services. Through video-conferencing facilities in hospitals and clinics around the province, OTN offers various programs: a telepsychiatry program that offers consultations with psychiatrists for patients in remote locations, saving them travel time and cost; a telepediatrics program that supports the care of children who live outside of cities and towns; a large telehome pilot project for people living
with COPD and congestive heart failure that has resulted in considerably lower hospital admissions and emergency room visits.25

Premiers’ Report

Canadian premiers released a report on health innovation earlier this year (2012). The premiers’ document examines the importance of cooperation between provinces/territories to achieve goals of health system sustainability through innovation. The report places a great deal of emphasis on sharing information, ideas, data, training and more.26 Since the document was just released, no progress reports are available.

BC’s Conversation on Health

In 2006, the BC Ministry of Health launched a year-long public dialog about health services with citizens and health professionals. Thousands of people participated online, phone, in person and other means. Seeking the ideas of British Columbians and others, the government aimed to generate novel ideas for renewing the health sector. We have included the Conversation on Health here because the emphasis was on best practices and innovative solutions to health problems.27

The BC Government’s Health Innovation Fund

In 2007, under Health Minister George Abbot, the BC government introduced the $100m Health Innovation Fund of which $75m was distributed. The focus was on i) relieving congestion in emergency rooms, reducing wait times; ii) improving primary care; iii) implementing pay for performance financing models. It encouraged acceleration of new initiatives, increased system focus and capacity for monitoring and evaluation, knowledge transfer within the system and opportunities to introduce system-wide innovation and learning. Twenty-nine projects were funded.28
The Provincial Health Services Authority developed a unique renal health delivery program. Northern Health established a novel, integrated care service for rural residents.

Fraser Health designed a self-care COPD course which integrated health technologies; it resulted in less visits to the emergency department and reduced visits to doctors’ offices. Not all the projects were sustained.

**Other Countries’ Innovations and Transformations**

No system in the world has a health system that is 100% effective and efficient but many nations have improved population health as well as system functioning. What can we learn from their efforts for innovation and transformation? Here we present 2 examples that may inspire change here in Canada—the National Health Service in England, which influenced the creation of Canadian health systems, and one county in Sweden; Sweden has many similarities with health and social infrastructure to Canada so it may be possible to emulate successes from there.

Many other examples exist. In the US, for instance, Nuka and Intermountain have been spotlighted for their excellence in service delivery. Nuka, a team based model of care that is patient centred, serves about 55,000 people, mainly of Indigenous heritage, near Anchorage Alaska; the “customer owners” receive holistic services from providers who work to their full scope. Southcentral Foundation, a non-profit organization provides access to physicians on the same day, either in person, on the phone or by email. Health outcomes for the community are higher than for other similar communities. Intermountain provides care to approximately half of Utah’s population and has led clinical improvements partly through large-scale use of integrated electronic health records.29

France was recognized by the WHO in 2000, the last year in which these rankings were conducted, as having the world’s best health system. This honour was achieved because of the national government’s commitment to universal coverage and high quality care as well as positive population health status measures.30
**England—NHS**

The National Health Service (NHS) in England has taken significant steps to drive transformation through innovation. It has initiated system-wide efforts to improve quality, innovation, productivity and prevention. With leadership from the top and throughout the system, the NHS is implementing an impressive array of innovations. There appears to be a cultural shift within the organization to encourage all members of the health workforce to think about innovation and financial resources are available to implement them. For example, in one region, the eye hospital, using evidence from various studies, noted that repeat referrals for glaucoma diagnosis could better be conducted in primary care settings—optometrists’ offices. Working with optometrists, carrying out refresher courses and discussing logistics, this scheme was successfully put in place. Patients were better served as the care was closer to home and wait times were short. The hospital accrued savings of up to 62%.31

Over the past decade, cancer rates have declined by 14% and circulatory diseases have decreased by 41%. Access to care has improved and infection rates have been reduced.32 Appendix I is a checklist for CEOs that is used by the NHS and could be helpful for other leaders implementing such widespread change.

While many accomplishments have been celebrated with this ground-breaking initiative, the English Audit Commission reported some of the difficulties: failures in risk assessment and risk management; overestimation of capacity; lack of effective leadership or strategic input; poor organisation and communication; absence of or poor quality project management; inadequate reporting to members; failings in the use of external advice; poor management of contractual partnerships; and poor procurement practice. The Audit Commission noted that no risks are involved in the invention of new ideas but risks are inherent in their proliferation.33 The NHS also has a poor track record for implementation of electronic health records and other attempts at innovation.
**Sweden--Jönköping County Council**

Jönköping County Council in Sweden, serving a population of less than 340,000, has gained international notoriety for its remarkable improvements in quality of care and cost savings. Over the past couple of decades, led by the same CEO, Jönköping Council has outperformed its counterparts in Sweden on national measures of efficiency, timeliness, safety, patient centredness, equity and effectiveness.

Systematically working at various levels of their system, Jönköping has made 800 measurable improvements in good stewardship, medication management, learning and renewal, safety, access, flow/cooperation and clinical improvements. It has reduced sepsis rates, improved chronic disease management, lowered staff turnover and absenteeism rates. These innovations have saved Jönköping 80 million SKR ($13.5M CDN).

One of the reasons that Jönköping has been successful is that its CEO created a new leadership position in learning and innovation. This individual, in concert with others, strategically learned about and adopted ideas from other countries. The CEO and members of this team regularly participate in international courses on transformative change with the intention of making systemic changes. They prepare before the course and take action after the course, applying the Plan, Do, Study, Act schema of change that is part of a Model for Improvement. In this continuous learning mode, health professionals have learned to set goals, measure them and select changes.

Stability within governance structures is another reason for Jönköping’s accomplishments. The long term CEO has been working for almost 2 decades with the same Assembly Chair and they have developed a trusting relationship over the years which has set a positive tone for other governors.

One of Jönköping’s flagship programs is *Esther*, a seniors’ health improvement initiative; Sweden has one of the largest aging populations in the world, constituting 18% of its population. Esther is an imaginary 88 year old woman living alone in her home who lives with chronic disease and requires occasional hospitalization for acute problems. Aiming to mapping out optimal care for Esther, health planners interviewed patients like her and clinicians who serve this population. This transformation of the system resulted in aligning demand with capacity in a system which was characterized by clear communication and coordination.
Changes included patient education for self-care, open access scheduling, team-based telephone consultation and more. Over a 3-5 year period the Esther project reduced hospital admissions by 20% with a concomitant redistribution of resources to communities; hospital admissions for heart failure declined by 30% and wait times for specialists were reduced by 30 days.34

**Leadership for Health System Innovation and Transformation**

**What kinds of steps are needed for these large scale changes?**

A Canadian study of knowledge and action for system transformation (KAST)35 identified 5 aspects of productive transformations in the health sector:

Passionate leadership at all levels of the organization that engages all personnel; nurse leaders are key to successful cultural shifts,36,37 middle managers for whom the innovation is a values-fit help to create a climate for transformation.38,39

1. Measuring and reporting on progress
2. Knowing history of the organization to avoid difficulties and to increase buy-in from all stakeholders
3. Engaging doctors in the process
4. Engaging patients and their families, particularly if one of the aims of transformation is to create a patient-centred system.

**How do leaders implement them?**

Successfully leading change is often the most difficult task for leaders. Evidence shows that productive changes are made by transformational leaders who create partnerships for the introduction of evidence-based health care cultures.40 Transformational leaders help to change people at a deep level—the heart and mind. Greater insight, vision, understanding and clarity of purpose are brought about; people’s words and actions become more congruent.41
Figure 2 illustrates the complexity of the organizational culture within which health system leaders operate.

Leadership for effective transformation is assisted by a) strong internal and external motivation (passion); b) a strong organizational mission; c) aligned organizational strategies; d) robust capability; e) continuous feedback and learning. Implementation science researchers outline 6 transformation processes: i) planning ii) educating iii) financing iv) restructuring v) managing quality vi) attending to the policy context. The check list (Appendix I) is also helpful in mapping out implementation.

Moving Forward
This document is designed to act as a platform for large-scale health system improvement. Leaders in BC and other parts of Canada can have a profound impact on improving the design of our health system. Now is the time to act. Innovations that lead to health system transformation will improve health status and care, preserving one of Canada’s most cherished government programs.

Citations

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Appendix I

Checklist for Chief Executives

This checklist may be used to assess the level of innovativeness in health authorities.
Drivers – does your authority feel the pressure to innovate?
■ Where is your biggest performance challenge?
■ How would you meet an efficiency improvement target even more stretching than one you currently face?
■ When was the last time pressure from members stimulated an innovative development?
■ How do you encourage local people to set you challenges and help you find innovative solutions?

Enablers – does your authority’s organisation and culture encourage innovative ideas?
■ Which of your targets cannot be achieved by incremental improvement?
■ How can front-line staff turn innovative ideas into reality?
■ Do staff have enough opportunities to think creatively away from day-to-day pressures?
■ Who analyses information for insight which can result in innovation?
■ How do staff know that you encourage innovation? Who came up with the last idea you supported?
■ How did you behave last time an innovative approach went wrong? What message did that send about your approach to failure?
■ What mechanisms are in place to ensure that lessons and insights can be communicated within your authority, and with others?

Implementation – can your authority manage innovation effectively?
■ Why was your last successful project a success (and your last failure a failure)?
■ How would you assess and manage the risks associated with an innovative service improvement idea?
■ What innovative projects are your senior team sponsoring?
■ How many managers do you have with the ability to manage an innovative change programme? Are they doing so?
■ How many of your top dozen operational managers are working on innovative projects?

From: Audit Commission NHS Chief Executive Innovation Review 8