



Population Health and Health Care

Exploring a Population Health Approach in Health
System Planning and Decision-Making

Factors Influencing Health



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Population Health and Health Care

Exploring a Population Health Approach in Health System Planning and Decision-Making

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The views expressed in this report are those of the author and do not necessarily represent the views of the Canadian Institute for Health Information.

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Executive Summary

Reorienting the health system toward the pursuit of health, beyond its traditional responsibility for providing clinical and curative services, was one of five strategies identified in the 1986 Ottawa Charter for Health Promotion for achieving “health for all” by the year 2000 and beyond.¹ However, progress in Canada has, historically, been slow and unsteady.^{2, 3}

This study, sponsored by the Canadian Institute for Health Information (CIHI), sought out health system leaders in Canada who have made demonstrable progress in adopting the population health approach. This has been defined as “an approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups.”⁴

In this study, CIHI interviewed 21 such health system leaders and conducted two workshops involving a number of them, along with other leaders in the population health field.

Over the course of the study, we identified numerous efforts that are currently under way across Canada and that exemplify the adoption of the population health approach within the health system. These efforts fall largely within three major domains:

- The population health approach was applied in the design and delivery of programs and services, typically with a focus on improving equity.
- The population health approach was applied to partnership and collaboration models, typically with a focus on intersectoral action.

- The population health approach was applied in organizational learning and behaviour, typically with a focus on building workforce competency and a culture that addresses the determinants of health.

The study also identified key attributes that were important to the adoption of the population health approach in the health system. These attributes were related to the knowledge, attitudes and behaviours of health system leaders, as well as to organizational or system factors that enabled (or hindered) their efforts to advance the population health approach. These attributes included

- Leadership;
- Population health IQ;
- Creative problem-solving;
- Information to support decisions; and
- Accountability and incentive alignment.

Specific to CIHI was the question of how it could help to integrate the population health approach into health system planning and decision-making. Recommendations based on the findings of the study include the following:

Support the collection of population health data through the health system

Study findings indicated that there is a strong need for patient-level socio-demographic data to be collected as part of patient encounters with the health system. Such efforts are already under way, for example, in Toronto and on Vancouver Island. CIHI could play a valuable role in working to cross-fertilize these local/regional initiatives into a pan-Canadian effort informed by common data definitions and standards.

Offer a population health perspective on major health care policies

Given its extensive data holdings and work in Canadian health policy, CIHI is uniquely positioned to offer a population health perspective on “hot topic” health care policies (for example, by analyzing the equity implications of emerging activity-based funding models). To undertake these types of analyses, however, the population health approach would need to be embedded across CIHI, and staff throughout the organization would require a level of proficiency in population health concepts and methods. This effort would imply that population health projects should not be confined to those owned and executed by CIHI’s Canadian Population Health Initiative (CPHI) branch.

Rebalance the performance picture

CIHI’s Health System Performance Initiative offers an unprecedented opportunity to rebalance the perspective on what

constitutes a high-performing health system—one that has traditionally been dominated by measures of health care delivery prowess. This opportunity involves developing and including more population health indicators in performance reports, and engaging the public in an ongoing dialogue about a high-performing health system that considers the population health perspective.

Build momentum through a national coalition

In addition to CIHI, national organizations such as Accreditation Canada and the Canadian Medical Association have also demonstrated an interest in promoting a population health approach. A multi-stakeholder coalition involving these organizations and others could serve as a powerful mobilizing force, given the different channels of influence they offer collectively.

Background

The Public Health Agency of Canada (PHAC) defines the population health approach as “an approach to health that aims to improve the health of the entire population and to reduce health inequities among population groups.”⁵ Core to this approach is the recognition that there are multiple determinants of health, many of which lie beyond the traditional scope of the health system.⁶ Equally important is the focus on the distribution of health across populations and the socio-economic gradient. Accordingly, the population health approach recognizes the importance of intersectoral partnerships at the community level, across and among different levels of government, and between health care providers and other professionals who have a role in influencing health.^{7, 8, 9, 10, 11, 12}

Canada has an illustrious history in the development of the population health approach. In the 1970s and 1980s, the Lalonde and Epp reports underscored the important roles of various determinants, in addition to health care services, in producing health.^{13, 14} In the early 1990s, scholarly works by the Canadian Institute for Advanced Research and the seminal book *Why Are Some People Healthy While Others Are Not? The Determinants of Health of Populations*,¹⁵ helped to further our understanding of the determinants of health and explained the limits of health care interventions in improving the health of populations.

These early Canadian works brought into question the limits of the biomedical model and promoted a broader view of health, one that is oriented toward achieving health and wellness for the entire population. However, as pointed out by Denny, this development “may also have established an unhelpful rift between those working in the area that

became known as Population Health and those working in health systems; one is convinced that health systems are but minor players in the health of populations, and the other is unconvinced that health services could or ought to seek to address social determinants of health and health inequities. Moving beyond this impasse is key to ensuring health care sustainability.”¹⁶

In recent years, key initiatives have demonstrated that there is increasing momentum to bridge the population health and health care perspectives. For example, the Institute for Healthcare Improvement in the United States, which has historically focused on improving processes of care, is now promoting the Triple Aim, a framework that is intended to simultaneously improve the patient experience, reduce per capita cost and improve population health. The Triple Aim has been endorsed in Canada by several health care groups, including the Canadian Medical Association, the Saskatchewan Ministry of Health and the Canadian Foundation for Healthcare Improvement, as well as the Central East and Hamilton Niagara Haldimand Brant local health integration networks.¹⁷

There is also growing recognition that those who work in health care, including physicians, nurses and allied health professionals, have important roles to play in improving population health. In the United Kingdom, Sir Michael Marmot and others at the UCL Institute of Health Equity are calling on health professionals to take an active role in addressing health equity, pointing out that “those in the health sector regularly bear witness to, and must deal with, the effects of the social determinants of health on people . . . the health care system and

those working within it have an important and often under-utilized role in reducing health inequalities through action on the social determinants of health.”¹⁸

In Canada, the Canadian Medical Association recently issued a similar call to action. It released a paper outlining ways in which physicians could help address inequities and the determinants of health, including steps that they could take to help their patients counter the social and/or economic factors that are barriers to good health.¹⁹ Specific examples of how health care professionals are making tangible contributions to population health are emerging from the front lines.^{20, 21}

Other notable developments that are fuelling the population health approach within the health system context in Canada include

- Accreditation standards that require health care organizations to display competencies in population health monitoring and planning;
- Increased focus on outcome measurement among health system funders;
- Public expectations for an integrated, person-centred system;
- Health system performance frameworks that include “equity” and “sustainability” as dimensions of quality; and
- Increased media attention on examples of health inequalities across Canada.²²

Purpose of Study

The Canadian Institute for Health Information (CIHI) was interested in pursuing a dialogue in Canada that would enhance the capacity and interest of health system leaders to apply a population health perspective to health system planning and decision-making. During recent pan-Canadian consultations with senior leaders at provincial/territorial and regional levels, CIHI noted a number of barriers to integrating a population health perspective. Challenges included conflicting views on the boundaries and objectives of the health system, locus of control and accountability, equity as a trade-off for efficiency and effectiveness, health system infrastructure and the complexity of evidence-based decision-making.

Much of the exploratory work undertaken by CIHI focused on gaining a better understanding of the information needs of health system planners and managers and examining the barriers and challenges to integrating the population health approach. However, there was a need to gain a more detailed understanding of what might motivate health

system leaders to move in this direction. For example, what is the perceived value of a shift toward a population health approach? Where could a population health lens best be applied among existing health system performance measurement and performance improvement initiatives? Which policy and organizational levers would help to drive improvement in population health outcomes? How might intersectoral communication and action be activated in support of these efforts? How could CIHI contribute?

This report concludes a year-long study sponsored by CIHI to

- Engage with senior health system leaders at the provincial/territorial and regional levels to address the above questions; and
- Determine a set of follow-up projects/activities for CIHI that could begin to shift the discourse from a focus on processes of care to a focus on health outcomes at the population level.

Methods and Participants

Despite recent momentum, progress over the last few decades in reorienting the health system toward the pursuit of health, beyond its traditional responsibility for providing clinical and curative services, has been slow and unsteady.^{23, 24} While it is tempting to try to uncover all the reasons why this is so, CIHI did not believe that such an exercise would be particularly helpful, and was concerned that it might in fact serve to reinforce the chasm—whether perceived or real—between players in health care and population health.

Instead, this study took as its premise that, regardless of the health system's current orientation toward the pursuit of population health, there must be "positive deviants" that could point the way forward. By engaging with health system leaders who have made demonstrable progress in adopting the population health approach, the study sought to form an understanding of the knowledge, attitudes, behaviours and conditions necessary for successfully integrating the population health approach into health care planning and decision-making.

A project team was established, made up of the following individuals:

- Tai Huynh, project consultant; Centre for Innovation in Complex Care, University Health Network
- Dr. Adalsteinn Brown, principal investigator; Dalla Lana School of Public Health, University of Toronto
- Dr. Cordell Neudorf, co-investigator; College of Medicine, University of Saskatchewan
- Jean Harvey, Director, Canadian Population Health Initiative, Canadian Institute for Health Information (project sponsor)

- Deborah Cohen, team member; Canadian Institute for Health Information
- Annie Sebold, team member; Canadian Institute for Health Information

Phase 1

The project was carried out in two phases. In Phase 1, interviews were conducted with health system leaders across Canada to understand their experiences with and perspectives on integrating the population health approach into health system planning and decision-making. Interviews were sought with individuals viewed to have had success in integrating a population health perspective into their work. This method of lead-user sampling was chosen to obtain insights from "adopters" of the population health approach.

A purposive sampling approach was used to identify candidates who met the following inclusion criteria:

1. **Impact**—A leader who has made demonstrable changes toward improving population health
2. **Rank**—A vice president or CEO equivalent; if in government, an assistant deputy minister, deputy minister or chief medical officer of health equivalent
3. **Nature and size of organization**—A leader who works or has worked in an organization with significant influence over the delivery of health care services for a defined population/catchment area

Members of the CPHI Councilⁱ were polled in order to develop a list of possible interview candidates based on the above criteria. At the time of polling, the CPHI Council consisted of 10 members, representing diverse interests across the field of population health. Selected members of CIHI's Board of Directors with an interest in population health were also polled for possible interview candidates. The project team identified additional potential interview candidates, based on members' knowledge and experience. Particular consideration was given to geographical balance, and organizational diversity—government, regional health authority, provider organization and other organizations. Finally, the selected interviewees helped to identify other interview candidates through snowball sampling.

A total of 83 interview candidates were initially identified. From this list, the project team selected and contacted 29 candidates who met the interview inclusion criteria. Of the 29 contacted, 21 agreed to participate.

Interviewees represented eight provinces and several national organizations. Their roles included deputy minister of health, chief executive officer, vice president of regional/district health authorities, hospital chief of staff and chief medical officer of health (see Table 1).

One-hour telephone interviews were conducted by at least two members of the project team. Interview questions (see Appendix C), covered three major topic areas: awareness, understanding and application of the concepts of population health; impetus for and hindrances—personal, organizational, systemic—to improving population health; and the role and value of population health information.

Interviewees were informed that data collected would be kept anonymous. Interviews were recorded if permission was given. Notes taken during the interviews were subsequently checked against audio recordings for accuracy, and interview notes were manually coded and analyzed by members of the project team.

Table 1: Profile of Phase 1 Interviewees

Geographical Representation	Roles	Organization Types
<ul style="list-style-type: none"> British Columbia Alberta Saskatchewan Manitoba Ontario Quebec Nova Scotia Northwest Territories Canada/national 	<ul style="list-style-type: none"> Deputy minister Assistant deputy minister CEO/president Executive director Vice president Chief of staff (hospital) Dean of medicine Chief medical officer of health 	<ul style="list-style-type: none"> Regional health authorities/local health integration networks Provincial ministries of health Teaching hospitals Community health centres

i. Now recognized as the CIHI Advisory Council on Population Health, responsible for providing high-level, strategic insight and expertise to the population health program of work undertaken by CIHI.

The interview protocol received research ethics board approval from the University of Toronto. Per the research protocol, identities of interviewees are kept confidential to encourage openness of responses to interview questions. This report respects that obligation.

Phase 2

Phase 2 of the study brought together key leaders in population health. In workshops, they discussed Phase 1 findings and generated ideas for a set of CIHI-specific follow-up projects that could begin to shift the discourse from a focus on processes of care to a focus on health outcomes at the population level.

Two full-day workshops were held in March 2013, one in Vancouver and one in Toronto. The two workshops were conducted independently (that is, the second did not build on the first). To ensure diversity in perspectives, the project team identified several health care role types that could be influential in achieving further integration of the population health approach into health care:

- Policy-makers
- System managers
- Researchers/academics
- Analysts/epidemiologists

Additional consideration was given to ensuring that each workshop included individuals with backgrounds in quantitative and qualitative research methods, as well as those from traditional health care and public health sectors. Many of the participants were familiar with working intersectorally to improve health outcomes.

Potential participants for the workshops were identified during Phase 1 interviews (see Appendix C, question 14), as well as through project team brainstorming. Three interviewees

from Phase 1 of the study also participated in Phase 2. Participants residing in western Canada (west of Ontario) were invited to attend the Vancouver workshop, while those residing in the east were invited to attend the Toronto workshop.

Prior to the workshop, each participant was sent a document summarizing the findings from Phase 1 and asked to review the material in advance.

The workshop agenda (see Appendix D) consisted of two distinct components. In the morning, participants took part in a facilitated discussion of the findings from Phase 1. In the afternoon, participants were divided into three teams. Each team was challenged to devise strategies and approaches for strengthening the population health approach in health care by examining levers, common ground and logical entry points for population health in day-to-day health planning and decision-making. Each team was asked to approach its challenge from the perspective of a particular role type:

- Team 1 was asked to generate ideas from the perspective of a resource-constrained analytics/epidemiology department manager who does not have all the data needed to produce reports on the health of the surrounding population.
- Team 2 was asked to generate ideas from the perspective of a busy regional health authority CEO who has made it her mission to reduce health inequities but is under constant pressure to deal with health care delivery issues that are high priority for her board and government.
- Team 3 was asked to generate ideas from the perspective of a deputy minister of health who understands the importance of the social determinants of health but is gaining little traction trying to engage his minister and colleagues from other ministries in considering a long-term, inter-ministerial approach.

Each team was given a “persona card” (see Appendix D) that provided additional information on each of the three representative role types and their needs. The role types were developed by the project team and were informed by the findings in Phase 1.

Detailed notes were taken of the workshop discussions. All flipchart materials were collected. The workshop protocol received research ethics board approval from the University of Toronto.

The Vancouver workshop was attended by 12 individuals and the Toronto workshop was attended by 16 (excluding members of the project team). Table 2 provides profiles of the participants from both workshops.

Per the research protocol, identities of participants are kept confidential to encourage openness of discussions. This report respects that obligation. However, some individuals who attended the workshops agreed to appear on camera to offer their perspectives on population health. In each case, explicit written consent was obtained.

Table 2: Profile of Phase 2 Workshop Participants

Workshop	Geographical Representation	Roles
Vancouver	<ul style="list-style-type: none"> • British Columbia (4) • Alberta (2) • Saskatchewan (3) • Northwest Territories (1) • Canada/national (2) 	<ul style="list-style-type: none"> • Policy makers (1) • System managers (2) • Researchers/academia (4) • Analysts/epidemiologists (4) • Others (1)
Toronto	<ul style="list-style-type: none"> • Ontario (7) • Nova Scotia (3) • New Brunswick (1) • Canada/National (4) • Saskatchewan (1) 	<ul style="list-style-type: none"> • Policy makers (1) • System managers (4) • Researchers/academia (7) • Analysts/epidemiologists (3) • Others (1)

Findings: Population Health Approach

Concepts and Definitions

The idea that health is a product of a multitude of factors is intellectually appealing and calls for many actors to work together toward a common goal. Despite its unquestionable currency, the lack of a concise definition of the term “population health approach” has been criticized.^{25, 26, 27, 28}

For the population health approach to proliferate within the health system, the meaning of the term needs to be clarified, particularly from the vantage point of those working within the system. This “first-person” account of what it actually means to adopt a population health approach should provide useful information on how a health system leader might engage in population health work, as well as on how such an approach relates to his or her health care delivery responsibilities.

“Population health itself is an approach that aims to improve the health of the entire population . . . So reducing health inequities among and between population groups, acting on a broad range of factors and conditions that have a strong influence on health . . . It’s more than just the absence of disease . . . It’s looking at capacity and resources rather than just health status . . . and looking beyond individual health goals.”

Deputy minister of health

In this study, participants were asked to describe, from their own perspective, what the term “population health approach” means. Interviewees often began their answers with a conceptual definition that most commonly included the following six elements:

- Focusing on health and wellness/prevention rather than illness;
- Addressing the social/multiple determinants of health;
- Taking a population rather than an individual orientation;
- Embracing intersectoral action and partnerships;
- Addressing equity/health disparities/health in vulnerable groups; and
- Understanding needs and solutions through community outreach.

Their answers indicate a common understanding of the approach and the elements identified appear to be consistent with the prevailing definition offered by PHAC.²⁹ However, participants also brought to light more nuanced concepts about the population health approach that appeared to be uniquely driven by the health care context. In particular, the following concepts were frequently mentioned:

- Moving from person to population;
- Addressing “upstream” factors; and
- Adopting a long-term approach.

There was a high degree of consensus among participants that more could be done by the health system to improve population health. However, the focus on the health of individuals versus that of populations was viewed on a sliding scale. The shift in emphasis from a provider- to a person- or patient-centred approach was seen as an important step in the eventual shift toward a population health approach.

“Where we put our energy, focus and resources needs to have an impact beyond the four walls of our hospital, beyond one patient or even just the patients that walk through our doors.”

CEO, teaching hospital

There was also repeated mention of the concept of “looking upstream” or “addressing upstream factors.” As an example, in an effort to reduce wait times for a particular surgery, one system leader focused attention on upstream factors to uncover the causes, and the causes of the causes, for why people might need surgery in the first place. In this way, the population health approach was viewed as an opportunity to reduce health care demand by promoting prevention through changes to health behaviours and the social determinants of health.

Finally, for many of the study participants, adopting a population health approach also meant adopting a long-term perspective to planning and decision-making. However, it was noted that this expanded time horizon often contradicted current health care management realities, where pressure to focus on shorter-term results was strong.

Applications of the Population Health Approach

There is a noticeable gap between recognizing the importance of the population health approach and applying it in practice. As pointed out by Edwards and Cohen, “it would be difficult to find a health professional or health researcher in Canada who has not heard of or acknowledged the importance of social determinants of health.”³⁰ Indeed, strategic plans and mission statements of health care organizations often contain aspiring goals, such as “improving population health and health equity,”³¹ yet few organizations have effectively operationalized these concepts or devoted sufficient resources to make significant progress toward these aims.³²

“We were a group of community people, not just health care providers, but also policy-makers, municipal governments, shelters . . . All of those decision-makers got around the table and said we can do much better at serving this broader community. The thought was that we were going to try to understand that population better and understand that we would have to improve health and deliver health care more effectively than the usual model.”

Chief of staff, teaching hospital

Study participants were purposively selected as having been able to bridge the gap between knowledge and action so that they could help answer many of the important questions posed earlier. (What is the perceived value of a shift toward a population health perspective? Where could a population health lens best be applied to existing health system performance

measurement and performance improvement initiatives? Which policy and organizational levers would be important to drive improvement in population health outcomes? How might intersectoral communication and action be activated in support of these efforts? How could CIHI contribute?)

However, before addressing these questions, it was important to take stock of some of the health system leaders' accomplishments in applying the population health approach. As such, Phase 1 interviewees were asked to describe what they had done to improve population health. Numerous applications of the population health approach emerged from their responses. In general, interviewees applied the population health approach across three broad domains:

- The population health approach was applied in the design and delivery of programs and services.
- The population health approach was applied to partnership and collaboration models.
- The population health approach was applied in organizational learning and behaviour.

“ We have a responsibility to vulnerable populations to provide them better care, not on our terms, but on their terms. I think we are not doing enough and collectively we have an overall responsibility to do better. ”

Chief of staff, teaching hospital

The population health approach was applied in the design and delivery of programs and services

Within this domain, the application of the population health approach involved initiatives that addressed the needs of vulnerable, remote and hard-to-serve communities or subpopulations, often with the primary goal of reducing health inequities. Examples included the following:

- A community health centre (primary care organization in Ontario) operates mobile health units to bring primary care and diabetes services to remote and Aboriginal communities in the North (see Appendix A: Case Example 1, Mobile Health Units);
- A teaching hospital offers innovative services to meet the complex needs of homeless individuals encountered through the emergency department (see Appendix A: Case Example 2, Rotary Transition Centre);
- A health care team works in partnership with other community organizations to bring health care services to local homeless shelters and to create a “safe” place where chronically homeless people can receive medical care and other social services (see Appendix A: Case Example 3, Ottawa Inner City Health Inc.); and
- Health care and social services agencies work together to better coordinate the vast array of health and community services for a low-income, ethnically diverse immigrant community (see Appendix A: Case Example 4, Health Access St. James Town).

These examples demonstrate ways in which the health care sector is moving beyond the biomedical model of care, in which illness is not thought of as being connected with social causes. While some of the interventions focused on improving equitable access to health care services, others, through intersectoral partnerships, were able to address a broader set of social determinants of health.

For many of the health system leaders interviewed, activities related to population health were not reflected in the formal mandate of their organizations and were largely considered to be peripheral to the core business of delivering health care. The importance of leadership was emphasized in many of these examples. For some, engaging in population health activities meant having to find creative ways to resource projects. For others, it meant having to reach out to and build lasting relationships with stakeholders outside the health sector. And for others still, it meant having to educate and demonstrate to a governing board the value of thinking outside the box and the need to address health at the population level.

“ Part of our renewal was to use an enterprise-wide approach . . . Part of the difficulties we have encountered on the determinants [of health] side is because we have been “stove piped” . . . For the complex problems in particular, the solution is to think and act as one. ”

Deputy minister of health

The population health approach was applied to partnership and collaboration models

These applications of the population health approach involved partnership and collaboration across sectors, government departments and community organizations, with the primary goal of addressing the determinants of health. Examples in this domain included the following:

- Regional intersectoral committees work in partnership with the community to shape programs and policies to meet diverse community needs (see Appendix A: Case Example 5, Saskatchewan RICs);
- Cabinet and deputy minister committees are responsible for coordinating health and social policies;
- A regional health authority advocates for policies supporting healthy built environments that are safe and walkable (see Appendix A: Case Example 6, Advocating for Healthy Built Environments, Vancouver Coastal Health); and
- A group of senior-level hospital representatives and representatives from key public policy and research facilities is working together to reduce health inequities by actively sharing resources and promising practices, harmonizing common policies and approaches to care, identifying and pursuing partnership opportunities, liaising with the wider health sector and influencing public policy (see Appendix A: Case Example 7, Hospital Collaborative on Marginalized and Vulnerable Populations).

However, many pointed out that working intersectorally does not always come naturally to organizations or individuals. As noted by one deputy minister, “We’re good at talking about collaboration, but it often breaks down in implementation.”

Intersectoral collaborative efforts appeared to be most effective when formal mechanisms were in place to support the convergence of multiple perspectives and when support structures were in place to carry out collaborative activities. For example, the Saskatoon Regional Intersectoral Committee has an executive team that consists of members representing First Nations, Métis, municipal, provincial and federal interests. This committee is co-chaired by the chief medical health officer of Saskatoon Health Region and the executive director of the Saskatoon United Way. The committee also has a number of working groups and dedicated staff to coordinate collaborative activities across a range of issues, from early childhood development to poverty and homelessness.

“ If ultimately poverty is one of the major drivers of health status, then we can't just sit on the sidelines and say that we can't do anything about it . . . When you see the circumstances in which some people are living . . . and some are third-world conditions, it is really profound. ”

CEO, health region

Within an organization such as a regional health authority or ministry of health, the chief medical officer of health was identified as a key resource that could help bring the population health approach to the senior management table. This role was often best leveraged when support structures beneath the senior management layer were also in place. In some cases, organizations have also appointed a director or vice president of population health (for example, Vancouver Coastal Health Authority, Saskatoon Health Region, Alberta Health Services and Northwest Territories Health & Social Programs).

Ottawa Inner City Health Inc. (OICH) was a community-level example of the critical role of intersectoral partnerships and action. A set of programs emerged as a result of concern among local leaders from across multiple sectors about the unmet health needs of a group of chronically homeless shelter users. OICH's programs and services are now co-located in and delivered through partnerships with community organizations such as the Salvation Army and Shepherds of Good Hope. OICH is incorporated as a not-for-profit organization and is governed by a board of directors that includes representatives from a variety of sectors, including the City of Ottawa and several community services organizations, as well as health care organizations (see Appendix A: Case Example 3, Ottawa Inner City Health Inc.).

The population health approach was applied in organizational learning and behaviour

These applications of the population health approach involved embedding the population health perspective into the processes, culture and structures of an organization. Examples of applications within this domain included the following:

- A hospital with a community advisory panel is responsible for reporting to the board on issues related to vulnerable populations (see Appendix A: Case Example 9, Community Advisory Panels, St. Michael's Hospital);
- A regional health authority incorporated into its resource allocation process explicit consideration for the degree to which an investment or disinvestment opportunity under consideration would affect health equity, as well as health promotion and disease prevention (see Appendix A: Case Example 10, Program Budgeting and Marginal Analysis at Vancouver Coastal Health);
- A health care organization has a code of conduct and human resources practices that are oriented toward achieving equity and the needs of the community served; and
- A district health authority has integrated the population health approach into many aspects of the organization, including policies, guidelines, tools and training (see Appendix A: Case Example 8, Annapolis Valley Health's Organizational Capacity in Population Health).

Many of the activities in this domain required action at the CEO level and/or among others in high-ranking positions within organizations (for example, revising organizational policies, establishing new ways of allocating resources or convincing a governing board of the need for community input). However, the interviews revealed that positional leadership was a necessary but not sufficient condition for

these types of changes to occur. Those interviewed commonly conveyed a deep sense of passion about issues of equity and social justice. It appeared that both positional leadership and personal conviction were necessary for the changes mentioned.

Another important insight from the interviews was the recognition that, in order for the population health approach to be sustained within an organization, the approach needed to be institutionalized. In other words, the population health approach needed to be not only embedded into organizational policies and procedures but also learned and practised by staff in order for it to be sustained. In one example, a CEO introduced an equity-driven code of conduct for staff. She subsequently moved on in her career to lead another organization. However, this particular code of conduct has remained an integral part of the original organization, despite the absence of the CEO who instituted the policy.

“ We’ve had to fly under the radar, because it’s [population health approach] not valued. ”

Executive director, primary care organization

In 2012, more than 2 million people across Canada—one out of every eight employed Canadians—worked in health care and social services.³³ Not surprisingly, study participants indicated that major opportunities exist to address population health issues through the health workforce. Some of the opportunities identified were

- Having workplace hiring policies and practices that are equitable;

- Paying attention to wage inequalities by ensuring that employees are paid a living wage and that suppliers are living-wage employers;
- Building population health competency among staff by equipping employees with knowledge, skills and tools to act on population health issues; and
- Ensuring that governing board members are knowledgeable about the population health approach.

“ Until we all collectively assume accountability for the health of the population, they [the people that we serve] will just keep bumping up and turning up in health care later. ”

CEO, health region

Impetus for Adopting a Population Health Approach

The study found that the health system leaders’ impetus for adopting the population health approach was connected to intrinsic motivation. Many referenced social justice and social responsibility as their primary motivation for engaging in this type of work:

“I have an obligation.”
(CEO of a health region)

“It is our social responsibility as doctors.”
(Chief of staff of a teaching hospital)

“We have responsibility beyond the walls of our hospital.”
(CEO of a teaching hospital)

“We’ve invested more in population health than other regions. But we do that because it’s the right thing to do.”

(CEO of a health region)

“I was so glad to receive the phone call [interview]. For me, it [improving population health] is my reason for being in this industry.”

(CEO of a health region)

Extrinsic motivators did not appear to play a significant role among those interviewed; accountabilities, job demands or performance obligations were not typically cited as reasons behind the actions taken. In fact, some interviewees indicated that their actions were sometimes viewed as unhelpful in the external environment. For example, the CEO of a health region indicated that when her organization undertook public consultations on its strategic plan, the community’s response to the proposed emphasis on population health was for the organization to “stick to the knitting” (that is, stay focused on delivering health care services). And for some, a certain amount of “flying below the radar” was necessary for the success of their work in population health.

“The way to go is to hold leaders and organizations accountable for population health for all.”

CEO, health region

While their own actions seemed to be internally motivated, health system leaders were also quick to point out that improving the financial sustainability of the health system could be a major selling point for the population health approach, one that could serve an extrinsic role in encouraging others to adopt the approach. It seems that reducing health care demand has always been a selling point for population health. In “Producing

Health, Consuming Health Care,” Evans and Stoddart observed that “the resurgence of interest in ways of enhancing the health of populations, other than by further expansion of health systems, was thus rooted both in the concern over growing costs and in the observation of the stubborn persistence of ill-health.”³⁴

Study participants cited several recent developments that they believed would more tightly associate the population health approach with the financial sustainability of health care. First is the commitment to the Triple Aim—simultaneously improving the patient experience, reducing per capita cost and improving population health. This framework has already been embraced by many organizations at local and national levels.³⁵

Another recent development on this front is the focus on finding ways to better manage services and reduce costs among the high users of health care. In Saskatoon, for example, a community concern about aggressive panhandling led to intersectoral action to address the issue. Many of the panhandlers were found to be homeless, to have underlying mental health issues and chronic conditions, and to be frequent users of a broad range of health and social services—to the tune of \$100,000 per person per year. A similar story is portrayed in Gladwell’s essay about Million Dollar Murray, a homeless man whose alcoholism lands him in jail or the emergency room so often that he costs Nevada taxpayers \$1 million over 10 years.³⁶

In Ontario, there is a significant focus on high-cost health care users. According to recent research, the top 1% of high-cost users account for one-third of all health care resources, while the top 5% of high-cost users account for two-thirds of all health care resources in Ontario.³⁷ However, an explicit link between this pattern of health care utilization and the social determinants of

health has not been well established; it could represent an important area for future research and a potential selling point for the population health approach.

Population health accountability was another concept mentioned in the discussion about motivating change. In the United States, the *Affordable Care Act*, in addition to its broader objective of extending health care coverage to the uninsured, has introduced measures to establish accountable care organizations (ACOs), whereby groups of health care providers are held accountable for the overall cost and health outcomes of a defined population of Medicare beneficiaries.^{38, 39} The ACO model ties funding to quality metrics that demonstrate improved outcomes for the defined population rather than the traditional quantity metrics based on units of services provided to individual patients. This is similar to the concept of “pay-for-population health” advocated by Kindig.⁴⁰

While developments such as accountable care organizations are seen as a positive step in aligning incentives toward improving health at the population level, the impact of financial incentives on improvements in health outcomes remains to be seen.^{41, 42, 43, 44, 45} Nevertheless, these developments are worth monitoring as they could shape future policies in Canada related to the role of health care organizations in improving population health.

Enablers and Barriers to Adopting a Population Health Approach

Interviewees identified the following enablers as critical to existing and future efforts to adopt the population health approach in health care:

- Health system leaders who recognize the potential contribution of the population health approach toward avoiding costly health care interventions and improving the financial sustainability of the health system;
- A clear focus and compelling vision for improving population health, one that serves to engage others in the effort;
- Senior management and governing bodies that understand the importance of the approach or, at a minimum, do not discourage the implementation of creative approaches that lie beyond an organization’s traditional mandate;
- Multiple champions in the form of respected leaders, including elected officials, who are willing to lend public and visible support;
- A supportive community of people who share best practices and could jointly undertake activities to maximize impact (see Appendix A: Case Example 11, Health Equity Data Collection);
- Access to information and evidence to support the case for action, as well as information and evidence on the effectiveness of the actions taken to ensure that they can be sustained;
- Sufficient latitude within the traditional command-and-control systems of the health care environment (for example, legislation and regulations, accountability requirements, spending rules) to enable creative and outside-the-box approaches; and

- Medical officers of health seated at senior management tables (that is, in regional/district health authorities and provincial ministries of health) who can bring a population health perspective to the decision-making process.

“ At a government or ministry level, it is very much focused on how long people wait for surgery, whether we are maintaining rural health services . . . and whether we balance our budget. So, there is a tension here that makes it quite challenging . . . But it [the population health approach] is important and it reflects our commitment . . . [it's] a choice we are making internally because we think it is the right thing to do. ”

CEO, health region

Conversely, interviewees consistently identified the following factors as barriers to undertaking population health initiatives:

- Lack of a clear understanding of what is meant by population health, resulting in ineffective communication among stakeholders and a lack of clarity around roles and responsibilities;
- Challenges related to ownership of the population health agenda for health care stakeholders, and lack of clarity on roles and responsibilities in achieving population health;
- Budget pressures that force organizations to retrench from efforts that are not considered core to their respective health care delivery mandates;

- “Tyranny of the acute,” where the urgency of health care delivery issues takes management time, attention and resources away from population health issues; strong public demand for health care services is a major contributing factor in this situation;
- Lack of permanency in approaches: pervasiveness of pilot funding for initiatives, initiatives driven by the passion of leaders and champions risk not being institutionalized or sustained when individuals depart; and
- Difficulties finding common ground among public health and health care stakeholders (which often operate quite independently), different government departments (which often operate as silos), unique urban versus rural challenges, different intellectual paradigms of the various professions involved, etc.

“ Across the country, we have a patchwork quilt of relationships and non-relationships between medical schools and schools of public health that were never thought out properly. After the Naylor report, had explosion of interest in schools of public health, and MPH degrees. We should try to not to have same schism between medical schools and public health schools like in the US. But we have relationship that range from medical schools owning public health to no relationship and everything in between. We're missing an opportunity. ”

Executive, health region

A surprising finding from the study was that the interaction between the public health and health care domains was viewed as both an enabler and a barrier to improving population health. On the one hand, tighter working relationships between public health and health care sectors would help to bring together two highly complementary remits, allowing for approaches that integrate both individual- and population-level interventions. On the other hand, despite the fact that public health and health care operate as part of integrated structures through regional health authorities in many cases, there is still a sense that they remain rather distinct solitudes. The fissure appeared to run along several lines:

- **Academic/professional**—In many parts of the country, schools of public health and medicine have operated relatively independently of one another for decades, which is reflected in the independence and unique identities of the associated professions.
- **Competition for resources**—Health care and public health are often in pursuit of the same funds, resulting in a sense of competition between sectors; study participants from both the public health and health care sectors commonly raised the need to address issues of “health imperialism” and “tyranny of the acute” in order to rebalance health efforts at the individual and population levels.
- **Concerns related to individual-level focus to achieve health outcomes at a population level**—Issues were raised about whether or not patient-level health care interventions focused on equity, quality or access to care truly constitute a contribution to the population health approach.

Investigation into whether or not these views on the two domains are more broadly shared was beyond the scope of this study and remains to be seen. What was clear is that the health care system could be leveraged as an important partner in achieving improved population health, if it could do so without increasing its share of health care dollars. Along these lines, workshop participants cautioned against pitting the two domains against one another. A successful example of the melding of public health and health care resources and expertise can be seen in Saskatoon, where epidemiologists are working in collaboration with support staff responsible for making health care decisions. While such an example is promising, there was still general agreement that there is considerable work to be done to unite the efforts of the health care and public health domains to achieve health for all.

Findings: Population Health Information

Over the last several decades, health system performance measurement and management approaches have taken root in Canada's provinces, territories, regions, hospitals and other sectors of care.^{46, 47} The rising costs of health care, growing public expectations for timely access to care, concerns over quality and patient safety, and a lively ongoing debate about sustainability of the Canadian health system are all factors that fuel the need to ensure that the health system is operating as efficiently and effectively as possible, while promoting equity in health across the population.

“Population health information is information that allows us to know how the population as a whole is doing and to know if it is the same across gender, income levels, etc.”

CEO, health region

Currently, however, performance measurement and management efforts focus much more heavily on health care services than on population health. CIHI's previous consultations with health system stakeholders revealed that information needs related to population health were not raised nearly as frequently as information needs related to health care services. This lack of emphasis on population health information appears to contradict the strategies and priorities of health sector organizations, which often reflect population health aims. For example, a review of the mission/vision statements and strategic priorities of major regional health authorities in Canada by Neudorf in 2012 revealed that, in addition to

providing high-quality treatment services and patient care, most of these organizations aspire to improve the health of the populations they serve.⁴⁸

This study attempted to gain an understanding of the role of population health information in health system planning and decision-making among those who had taken significant action to improve population health. The study participants were adopters—if not early adopters—of the population health approach within the health system. Understanding why and how these adopters used/did not use information, and gaining insight into their unmet needs, could have important implications for the design of population health information for current and future adopters of the population health approach.

Perceived Value of Population Health Information

There was overwhelming consensus among study participants that information is critical to advancing population health within the context of health system planning and decision-making. Specific areas where information was cited as being valuable included the following:

- **Planning**—To understand the health of the population and subpopulations, to identify health needs and to develop and adapt services accordingly;
- **Resource allocation**—To inform the business case for investing in population health;
- **Performance and evaluation**—To track and demonstrate progress in order to maintain support or to help defend programs against budget cuts, especially when fiscal pressures are at play; and

- **Advocacy**—To compel others to take action, and to help build the case for intersectoral work targeted at achieving health for all.

“ One of the reasons people get funding on the treatment side of the health system is that there is data clearly linking the problem and solution. The problem with population health is that it is not always clear what the mechanisms are to fix a problem. We need more intervention research, like what is done on the treatment side. It's not enough to bring attention to problems. ”

Deputy minister of health

It should be noted that the above is a composite perspective generated from all the interviews. Individual interviewees typically focused on the aspect(s) most important or relevant to them. For example, one interviewee indicated that her decision to embark on a particular initiative was informed purely by first-hand experience rather than data. She said that staff at her organization spent a great deal of time in the community and could therefore see where equity issues existed. In her view, data was valuable not as a planning tool but as a way “to prove things” to funders.

“ It used to be all about having champions and credible people on board, but more and more, it is becoming data driven, which helps take pressure off the need to always have strong leaders, [who are] in limited supply. ”

CEO, teaching hospital

During both the interviews and the workshops, there was considerable emphasis placed on the importance of information as it relates to resource allocation decision-making. Study participants indicated that health system funding decisions are often made by decision-makers in “finance” (for example, a ministry of finance)—those who might not fully understand population health or share the same level of commitment and enthusiasm as those vested in the population health approach. One of the implications of adopting the population health approach is the likelihood that the required resources will be drawn from the same pool that supports health care service investments. Study participants remarked that investments addressing health care delivery issues usually have a direct cause-and-effect relationship. This often results in a more robust evidence base for the cost-effectiveness of health service interventions (compared with the cost-effectiveness of population health interventions), thus making them easier for decision-makers to understand and pursue. In order for population health information to be valuable in this context, participants pointed to the need for information to move beyond the description of problems and toward specific evidence-based actions that consider the cost-effectiveness of population health at each intervention.

Another interesting perspective focused on the relationship between information and leadership, and its potential implication on the spread of the population health approach within the health system. It was mentioned that while early adoption of the population health approach might be driven by the conviction of a few strong leaders, data and information—important drivers for action—will be necessary for the population health approach to take hold.

“ With data, you almost become immune to it. I don’t know who this is. I’ve never met this person you speak of. How can you possibly be handing out needles in a needle exchange? ”

Deputy minister of health

Types of Population Health Information

Many interviewees pointed to the importance of expanding the scope of what is meant by population health information to include that which is derived from the human experience (for example, human stories and narratives) in addition to that which is derived from data (statistics, measures and indicators). They indicated that both types of information are relevant to decision-making. Population health information derived from the human experience helps to illuminate what are often very complex issues. Such information could come in the form of human stories told through methods such as video documentaries, value stream mapping and community dialogues. Participants provided numerous reasons why this type of information is important to the successful communication of population health information:

- Complex health determinants are better appreciated and more easily articulated through the lens of human experience.
- People respond more favourably to data that is framed by the human experience/story.
- Experiences of individuals, while not always generalizable, can help to illuminate issues for which reliable quantitative outcomes and costing data are not available.

- Social media, which is an important tool for educating the public and shifting expectations, responds well to the human stories.
- Population health information presented through the lens of human experience could be used in conjunction with current management techniques (for example, value stream mapping) to better understand the human experience and to promote better understanding of how the delivery of health care services can be improved.

“ The data don’t have emotional bite. A dead child is a tragedy—the death of 2 million is a statistic. ”

Workshop participant

Study participants also indicated that qualitative data can be as reliable, empirical and systematic as quantitative data and that there are established standards that govern qualitative research. While qualitative research can play an important role in supporting decision-making on population health, it is distinct from information presented as an individual story or in narrative format.

Consistent with interview findings, workshop participants indicated that data (qualitative or quantitative) tends to lack “emotional bite” or the spark needed to mobilize change. Therefore, many felt that it is important to consider including individual stories or narratives as part of the “information package” on any population health issue. Moreover, study participants indicated that it is important to tailor the information to the audience.

Analytical Capacity

Study participants pointed out that there is substantial variation across organizations in terms of capacity to conduct data analysis to support decision-making on population health matters. In organizations that have a public health department, such as regional health authorities or ministries of health, this capacity often resides within the portfolio of the chief medical officer of health. Within these organizations, the lack of interaction between analytical staff in the public health and health services arms of the organization poses a major challenge.

In cases where public health has not been integrated into the organization, such as hospitals or Ontario's local health integration networks, analytical resources may be accessed through external means. For example, the Toronto Central Local Health Integration Network (TC LHIN) and a number of Toronto-area hospitals use the services of the Centre for Research on Inner City Health to address their analytical needs.

In other organizations, particularly those in rural communities, limited resources and challenges with recruitment and retention of qualified personnel (epidemiologists, for example) can leave an organization with limited support. In addition to having to develop flexible workplace options that make the employment opportunity more attractive, these organizations may also be tasked with the responsibility of considering employment solutions for spouses.

Recognizing the resource constraint issues across regions that limit the amount of analytical capacity available to support planning and decision-making, workshop participants discussed ways to enhance the impact of finite analytical resources. Workshop participants pointed out that analytical personnel spend considerable time collecting data from disparate sources and developing basic health status reports.

Consequently, they are left with little time to work on more decision-critical projects. To maximize the use of existing analytical capacity, workshop participants proposed a new model of working, one that would bring together a critical mass of analytical staff. At a regional level, this critical mass could exist in the form of a health intelligence unit or health observatory, instead of having resources scattered thinly across individual organizations. In this revised model, analytical resources could work in teams, alongside other professionals with expertise in quantitative and qualitative methods, communications, health care and population health data, and simulation modelling, in order to develop robust and relevant population health information products.

Finally, workshop participants identified the need for data “phone books” and web-based information portals that would centrally house basic population health descriptive data and indicators, and that could be accessed easily by multiple users. It was estimated that a centralized data and indicators repository could support up to 80% of the information needs for the average decision-maker. Participants felt that this type of solution would free up analytical staff's time so they could “get outside” and work more closely with decision-makers to produce more complex population health research that would align with key information needs.

“Data/analytical capacity and infrastructure are the two things we lack. Our continuous quality improvement committee is extremely interested in population health, but they have struggled to find . . . even one population health indicator that they want to monitor progress in . . . We haven't landed on one yet.”

CEO, health region

Unmet Information Needs

Collecting Better Data

There was clear recognition that variations—often important ones—in the health of subpopulations at the community or neighbourhood level lie hidden beneath the reporting of averages. Unfortunately, data required at this small area level is not available through traditional population health data sources such as the Canadian Community Health Survey (CCHS) and is costly to collect. Not surprisingly, the cancellation of the government’s mandatory long-form census was repeatedly mentioned as a significant loss for a number of reasons. One of the key reasons cited was that population data obtained from a voluntary survey might suffer from non-response bias, thereby inhibiting efforts to understand the distribution of health across different population groups.

The interviews uncovered several grassroots efforts that employ cost-effective approaches to collecting much-needed local population health data, including organizations that work together to leverage common analytic or survey platforms, or to embed new data elements into existing data collection systems. For example, a group of 18 hospitals in the TC LHIN collaborated to improve equity-related information in patient experience surveys. These hospitals worked with NRC Picker, a leading provider of patient experience survey services, to embed two new questions into the survey instrument to examine whether the hospitals are providing equitable care. These 18 hospitals have since launched an initiative to collect patient-level health equity data through their hospital discharge administrative records (see Appendix A: Case Example 11, Health Equity Data Collection). Similar efforts are under way in British Columbia, where the Vancouver Island Health Authority has

begun to collect key “determinant” data in its clinical documentation systems for all admitted persons. Information is being collected on housing status, marital status, primary source of income, employment status, as well as sedentary lifestyle and social support. It is anticipated that the Interior Health Authority will also begin collecting self-reported Aboriginal status.

Population Health Performance Indicators

Despite the study’s strong emphasis on improving population health, a scan of the websites of the respective organizations of those interviewed revealed that corporate-level “scorecards,” “report cards” or “dashboards” included relatively few performance indicators about population health, compared with those about health services. Population health indicators that were identified through the scan included the following:

- Equity in hospital standardized mortality ratio by income (hospital)
- Equity in heart failure readmission ratio by income (hospital)
- Cultural sensitivity (hospital)
- Early childhood development index (regional health authority)
- Disparity ratio for life expectancy (regional health authority)
- Deprivation index ratio (regional health authority)
- Potential years of life lost (regional health authority)
- Life expectancy (regional health authority)

The corporate-level indicators that were reviewed were dominated largely by measures of access, efficiency, quality/safety, patient satisfaction and financial performance. That said, it is difficult to know the extent to which indicators about population health were used at lower levels within these organizations. One interviewee did indicate that population health indicators were indeed being tracked at the level of individual programs, despite their absence from the corporate scorecard.

When asked, health system leaders identified a broad range of population health indicators that they believe should be measured by health organizations. These indicators fell into the following categories:

- Morbidity and mortality (health-adjusted life years, disability-adjusted life expectancy, life expectancy, incidence and prevalence of major chronic diseases);
- Proximal risk factors (obesity rates, smoking, drinking, exercise);
- Distal factors influencing health (poverty rates, air and water quality, Grade 3 reading levels, graduation rates);
- Service indicators, including their potential stratification (emergency department use, home care visits, immunization rates, preventive care); and
- Others (food bank use, suicide rates, grocery stores per area, happiness index).

In many cases, health system leaders stated that either these indicators were not yet being tracked or a decision about which population health indicators to measure had not yet been made by their respective health organizations.

The inconsistency between the relatively long time frame allotted to achieve changes in population health versus the relatively short time frame allotted to achieve organizational performance targets could be another important factor that speaks to the absence of population health indicators at the corporate level. One regional health authority CEO indicated that while indicators of population health outcomes were available and reflected in the organization's health status reports, they were not included in the organization's performance dashboard. This, it was asserted, was due to time frame issues. A number of interviewees articulated the need for better leading and lagging indicators in order to measure the short- and long-term impacts of actions taken to improve population health.

Has the population health approach become part of mainstream thinking in health care? The discrepancy between the commitment to population health on the part of health system leaders and the scarcity of population health indicators on the performance scorecards of their respective organizations suggests that there is still work to be done. It also suggests that the population health approach has yet to become part of the "institutional fabric" of most health care organizations. This, however, should not come as a surprise, given the notoriously slow pace of and recognized challenges associated with culture change in health care.⁴⁹

Conclusions and Implications

Reorienting the health system toward the pursuit of health, beyond its traditional responsibility for providing clinical and curative services, was one of five strategies identified in the 1986 Ottawa Charter for Health Promotion for achieving “health for all” by the year 2000 and beyond.⁵⁰ While progress in Canada has, historically, been slow and unsteady,^{51, 52} this study unveiled numerous efforts currently under way that illustrate the convergence of population health and health care perspectives. These efforts demonstrate that the population health approach was being applied across three key domains:

- The population health approach was applied in the design and delivery of programs and services, typically with a focus on improving equity.
- The population health approach was applied to partnership and collaboration models, typically with a focus on intersectoral action.
- The population health approach was applied in organizational learning and behaviour, typically with a focus on building workforce competency and a culture that addresses the determinants of health.

However, on the basis of these findings from this non-representative sample, it would be a mistake to interpret that the Canadian health system has embraced the population health approach to any significant degree. Since study participants were health system leaders who have had success in adopting the population health approach, conclusions could be drawn only about the attributes commonly found among members of this group of adopters of the population health approach within the health system. The following attributes are associated with the knowledge, attitudes and behaviours of health system leaders themselves, as well as the organizational and/or system factors that enable (or hinder) their efforts to integrate the population health approach into day-to-day operations:

- Leadership;
- Population health IQ;
- Creative problem-solving;
- Information to support decisions; and
- Accountability and incentive alignment.

Table 3 describes each attribute within the context of the study findings, as well as the associated implications for the health system.

“ It would be great to have a consortium, a collaboration, some way to be able to do information sharing, maybe a clearing house . . . or even to formally meet to discuss and hear about and share successes . . . ”

CEO, health region

Table 3: Summary of Results and Implications

Attribute	Take Away From Study	Implications for the Health System
Leadership	<ul style="list-style-type: none"> • Health system leaders in the study went beyond the call of duty to undertake population health work. • These leaders served as role models for organizational values. • Leaders possessed the ability to enlist the aid and support of others who could help champion their efforts. • Their work in population health went relatively unnoticed compared with their work on other health care priorities of the organization. 	<ul style="list-style-type: none"> • Enhancing leadership models and incentive structures to encourage the population health approach is an important activity that should be supported by the system. • Communicating and sharing the exemplary actions, programs and policies of health system leaders who have shown leadership in population health could serve as a model for others.
Population health IQ	<ul style="list-style-type: none"> • Health system leaders who participated in the study displayed a strong command of population health principles and concepts. • These leaders were able to apply the population health knowledge to their own unique health care contexts: <ul style="list-style-type: none"> – Moving from person to population – Addressing “upstream” factors – Adopting a long-term approach • Leaders worked to develop population health awareness and competency among governing boards and staff within the organization. 	<ul style="list-style-type: none"> • Effort is needed to clarify population health terminology and to develop an operationally relevant set of population health definitions and approaches that are contextualized for the health care environment, so that they are easier to grasp and appear less foreign or academic. • Workforce training and exposure to population health issues and concepts should be supported.
Creative problem-solving	<ul style="list-style-type: none"> • Designing and implementing approaches that address population issues required considerable outside-the-box thinking and unconventional methods. • Creative solutions often arose through the collaboration of individuals from diverse backgrounds/organizations/sectors, including members of the community. • Solutions were rooted in local contexts and targeted to address unique population needs. 	<ul style="list-style-type: none"> • Better communication and sharing of population health practices and interventions will make it easier to adopt/adapt population health approaches and will eliminate the need to invent new solutions from scratch each time. • People who can bring diverse perspectives and ideas to committees/working groups/advisory bodies/teams should be included in efforts to find appropriate solutions to population health issues.

(cont'd on next page)

Table 3: Summary of Results and Implications (cont'd)

Attribute	Take Away From Study	Implications for the Health System
Information to support decisions	<ul style="list-style-type: none"> Health system leaders indicated a need for different types of information, including those that <ul style="list-style-type: none"> Describe populations and their needs; Provide evidence for the value of potential interventions; and Measure and report on performance. Descriptive population-level information currently available was viewed as a good starting point, although not granular enough to support local decision-making. 	<ul style="list-style-type: none"> Local efforts to collect granular data are being undertaken; however, there is a need for collaboration across initiatives as well as data standards. More effort is needed to evaluate the effectiveness/cost-effectiveness of population health interventions. There is a need to develop and standardize core population health indicators to evaluate health system performance in the context of population health outcomes. Leading and lagging indicators should be developed to measure the short- and long-term impacts of health system actions on population health. Qualitative research is required to go beyond descriptive population health statistics in order to understand complex and context-specific issues at a local level. Stories and narratives help personify qualitative and quantitative data and should be leveraged to influence and guide decision-making.
Accountability and incentive alignment	<ul style="list-style-type: none"> Among the health system leaders interviewed, intrinsic motivation was a powerful driving force for action. There was also recognition that the focus on reducing avoidable health care utilization and improving the financial sustainability of the health system is an added motivation for action. Public reporting on organizational and health system performance is currently biased toward health care delivery. 	<ul style="list-style-type: none"> Commitment to the Triple Aim—simultaneously improving the patient experience, reducing per capita cost and improving population health—among a broad range of health system stakeholders could generate further interest in adopting the population health approach. There is a need to achieve a more balanced perspective in health system performance and accountability frameworks to encourage equitable health improvements for the entire population. As provincial governments embark on new funding models (for example, capitation and patient-based funding), they will need to carefully consider how incentives embedded within these models promote improvements in population health.

Recommendations for CIHI

Based on the findings of this study, a number of recommendations are offered to CIHI. The recommendations include activities that are strictly within CIHI's health information mandate, as well as those where CIHI, through its long-standing commitment to population health issues, could play a leadership or coordinating role. It should be noted that some of the recommendations may already be under way or may be under consideration through other means.

Support the collection of population health data through the health system

The idea of linking health care encounter data with self-reported data was advocated by Wolfson in 1994. In *Why Are Some People Healthy While Others Are Not? The Determinants of Health of Populations*, Wolfson wrote the following in his chapter on population health measurement, data and information:

"Both forms of data are inadequate to meet the health information needs we have outlined. The situation in Canada may be unique, however, in the tremendous potential that these two sources can offer *in combination*, and at relatively cheap incremental cost."⁵³

This idea was reiterated in 2009 by the Centre for Research on Inner City Health, which suggested that while stratification of equity indicators is now possible by linking existing area-level data with available individual-level data, the ideal approach is one in which patient-level health data is linked to patient-level socio-demographic data. But to achieve the latter, new data collection efforts or systems would be necessary.⁵⁴

The findings of this study indicate that there is a strong need to collect patient-level socio-demographic data as part of patient encounters with the health system. Efforts such as the health equity data collection initiative among the 18 hospitals of the TC LHIN and the collection of key "determinant" data in clinical documentation systems within the Vancouver Island Health Authority exemplify this approach. Efforts such as the one being undertaken by the TC LHIN would likely welcome CIHI as a partner to pilot a more national data collection approach of this nature.

Offer a population health perspective on major health care policies

While wait times still command significant policy attention, Canadian jurisdictions are now turning their focus toward questions of value for money and health system sustainability. Emerging from these priority health system issues are policy undertakings focused on strategies to improve health outcomes rather than producing more health care. Specific attention is being paid to high-cost users, in particular, to address the small proportion of the population that consumes the vast majority of health care resources. Indeed, study participants pointed to these types of priority health care issues as potential points of engagement for the population health approach, either to understand the issues from an "upstream" social determinants perspective or to consider potential demand reduction/cost savings that might result via increased focus on prevention and healthy living.

CIHI is already actively involved in many of these policy areas, for example, in working with the provinces in the development of funding models, developing methods for identifying individuals in the community who are at high risk of admission and readmission to hospital, and exploring the characteristics of high-cost users and their patterns of interaction with health care services. Responsibility for these initiatives is distributed throughout the organization and is not necessarily confined to the CPHI branch. To increase the relevance of the population health approach within the priority health system issues, population health methods and expertise should be integrated into existing work across CIHI. In addition, CPHI should also enhance its specific research agenda to focus on the issues that are of greatest importance to health system decision-makers. Areas of focus may include an analysis of the potential population health and equity implications of emerging health care funding models, and research that explores the relationship between high users of health care and the social determinants of health.

Engaging in these types of analyses would require population health expertise to be embedded across CIHI in order to ensure that staff throughout the organization have some level of proficiency in population health concepts and methods. One specific idea explored by the project team was the development of CIHI elearning modules to advance the understanding of population health concepts and information issues among staff (see Appendix B). Such an integrated approach to delivering policy-relevant population health analysis also implies that population health projects should not be confined to those owned and executed by CPHI but, rather, should be the result of synergistic collaborations that combine expertise and skill sets within the organization.

“ I think it's important for health systems to establish long term accountability frameworks to continue to monitor broad indicators of social progress that are beyond the scope of any of department to wholly control. It's the attribution versus contribution discussion . . . ”

Deputy minister of health

Rebalance the performance picture

Since the first National Consensus Conference on Population Health Indicators and the development of the Health Indicators Framework in 1999,⁵⁵ CIHI has placed an emphasis on indicators related to health status and the non-medical determinants of health. This emphasis has since broadened, with CIHI's Health System Performance Measurement Framework released in early 2013.⁵⁶ This new framework places significant focus on indicators of health outcomes, the social determinants of health and equity. CIHI's Health System Performance Initiative provides an unprecedented opportunity for CIHI to rebalance the perspective on what constitutes a high-performing health system—one that has traditionally been dominated by measures of health care delivery.

To rebalance CIHI's indicators portfolio, there is the need to develop clear and measurable leading and lagging indicators of population health. This need was articulated directly by study participants and is also evidenced by the dearth of population indicators currently being tracked in scorecards/dashboards of health system organizations. This stands in stark contrast to the growing number of health care indicators over the last decade, where the “exploding demand for

accountability and quality improvement data” has caused those within the health care measurement community to declare a national state of “indicator chaos.”⁵⁷

However, the opportunity extends far beyond the development of indicators. The broader definition of population health information (quantitative, qualitative, narrative) that emerged over the course of this study could be a useful starting point for the development of future population health information products that are relevant and meaningful for decision-makers and the public alike. In addition, many study participants emphasized the need to engage in public dialogue about the role of the health system in contributing to the production of health, and to consider how rebalancing the allotment of finite health dollars might achieve improved health outcomes at a population level.

Build momentum through a national coalition

Although population health information was acknowledged as an important enabler, study participants viewed it as part of a suite of tools for building momentum for the population health approach in the health care system—in other words, CIHI cannot do this alone. A multi-stakeholder coalition involving organizations such as CIHI, Accreditation Canada, the Canadian Medical Association and others was seen as a potentially powerful mobilizing force. CIHI should consider partnering with other such organizations with an interest in population health, to maximize impact through multiple channels of influence.

The project team brainstormed ideas for initiatives that could be undertaken by such a collaborative (see Appendix B). Ideas included the following:

- **Opinion Leaders**—Sponsor a commentary series by opinion leaders (health system managers, physicians, etc.) on how the population health approach could be integrated into health system planning and decision-making;
- **40 Years Since Lalonde**—Host a conference to commemorate 40 years since the release of the Lalonde Report and, in concert, launch a campaign to inspire health care organizations to affirm their commitment to reorienting the health system toward the pursuit of health over the next 10 years;
- **Document Inspiring Leadership**—Develop a series of short documentary-style videos featuring health system managers, clinicians, policy-makers and the organizations they represent and showcase the demonstrable progress they have made in improving population health (perhaps drawing on the case examples encountered over the course of this study); and
- **Tools With Accreditation Canada**—Partner with Accreditation Canada, possibly through an expansion to the current CIHI–Accreditation Canada Memorandum of Understanding, to develop standards for population health needs assessment.

In closing, it is worth calling to mind the size of Canada's health system. It employs one out of every eight working Canadians and consists of thousands of organizations whose directions and activities are governed by a variety of forces and interests, many of which are not connected to or only loosely associated with the pursuit of health. By virtue of its sheer size alone, the inertia of the system tends to keep it from being reoriented (irrespective of the intended direction).

Integrating the population health and health care perspectives is challenging work. The good news is that there are many dedicated professionals in the field who are leading by example and demonstrating that it can be done. What is inspiring about the many efforts encountered in this study and elsewhere (for example, Sir Michael Marmot's work with the various health professions in the U.K.)⁵⁸ is that they emanate from within the health system and from its people. Members of the project team share a sense of optimism and a belief that change is on the way.

Appendix A: Case Examples

1. Mobile Health Units, NorWest Community Health Centresⁱⁱ

In response to an ever-growing health need, the NorWest Community Health Centres (CHCs) have expanded services and programs to communities within the District of Thunder Bay with the addition of two mobile health units: one for primary care and the other for diabetes.

Primary Care

The CHCs' mobile health unit is the first in the province to provide primary health care.

The focus of the primary care mobile health unit is to serve people who are having difficulty finding health care services, who have barriers and access issues such as geography, or who may be at a higher risk of poor health.

The mobile health unit is operated by a nurse practitioner, an RN foot care nurse and a community health worker, and travels to selected communities. Nurse practitioners provide primary health care and urgent care clinics, and diagnose, treat and refer clients within their scope of practice.

Patients can be seen for health issues such as cuts, coughs and colds, fevers, earaches, infections, sexual health, birth control and health education.

Health promotion programs are offered based on the specific needs of the community visited. Examples of such programs include healthy eating, cooking, parenting, and alcohol and substance abuse prevention programs.

Diabetes

The goal of the diabetes mobile health unit is to provide diabetes education and support to those who are either living with or at risk of developing diabetes. The CHCs achieve this by working with patients and their health care providers.

The diabetes mobile health care team consists of the following:

- **A nurse practitioner** monitors glucose levels, blood pressure and cholesterol levels, and also works with the client and his or her family physician to help manage the disease;
- **A foot care nurse** provides preventive foot care for clients who are either living with diabetes or at high risk of developing the disease; and
- **A community health worker** delivers health promotion and prevention programs and assists clients in finding support for health and social well-being.

ii. The NorWest CHCs' mobile health units were referred to by one of the interviewees. The information contained in this case example was obtained from the NorWest CHCs' website: www.norwestchc.org/mobile_unit.htm and www.norwestchc.org/diabetes_mobile.htm.

2. Rotary Transition Centre, St. Michael's Hospitalⁱⁱⁱ

The Rotary Transition Centre (RTC) is located adjacent to the emergency department (ED) at St. Michael's Hospital in downtown Toronto. It opened its doors in 2000 in response to concerns that vulnerable patients were being discharged in a fragile state after ED visits. As an alternative to going directly to a hostel or shelter or staying on the streets, the RTC gives patients a place to rest for up to 18 hours, to launder their clothes, to shower and to work with staff on a discharge plan. The first of its kind in Canada, the RTC is a 24-hour facility that offers homeless and under-housed patients a safe and welcoming environment, where they can get a meal, do their laundry, watch TV, use the phone or speak to a social worker.

The centre was built with a \$500,000 donation from the Rotary Club of Toronto, which also provided furnishings and major appliances. It has two bedrooms, a bathroom and shower, laundry facilities, a clothing cupboard, and small living and dining/kitchen facilities. Non-clinical support staff work with members of the emergency team to assist clients with activities such as medical follow-up appointments, transfer to a hostel, housing or detoxification unit, job applications and other needs. In addition, social workers, community care coordinators and geriatric advanced practice nurses support discharge planning activities. The RTC can also provide ongoing treatments, such as intravenous antibiotics or complex dressing changes for wounds and other injuries that would otherwise be provided in the community at clinics and other centres.

The RTC will sometimes accept patients for longer than 18 hours. One example was a teenager who was eight months pregnant and sleeping on the street. She was at high risk for suffering assault, using drugs and engaging in the sex trade to support herself, and she wasn't receiving prenatal care. She stayed at the RTC for three weeks, until she delivered her baby. She expressed a feeling of safety and stated that staying at the RTC eliminated her need to use substances to cope with her situation on the street.

The centre takes in approximately 1,000 clients annually. Surveys have found that clients are more than twice as likely as non-RTC patients to attend specialty follow-up care, probably because the support staff organize these appointments and transportation for them, and often accompany the client. Client surveys have also shown a high (90%) satisfaction rate with RTC.

iii. The Rotary Transition Centre was referred to during an interview with a health system manager. The information contained in this case example was obtained from St. Michael's Hospital's website: www.stmichaelshospital.com/media/detail.php?source=hospital_news/2013/20130423_hn.

3. Ottawa Inner City Health Inc.^{iv}

Ottawa Inner City Health Inc. (OICH) is a not-for-profit organization created by organizations serving the homeless community in Ottawa. It grew as a result of concern for a subgroup within the population of chronically homeless shelter users who were not being well cared for—despite complex health needs and frequent use of health services. During the planning period for OICH, it was also identified that homeless persons stayed an average of four days longer in hospital than housed individuals.

Initially piloted in 2001, OICH aims to improve the health and access to health care for people who are chronically homeless. Its main function is to coordinate and integrate health care services so that homeless individuals can receive the same quality of health care as other Canadians.

OICH currently operates two types of programs: bed and service programs. Bed programs include the following:

- **The Mission Hospice Program** is a partnership between the Ottawa Mission and OICH. The program provides palliative care to terminally ill people who are homeless or “street involved.”
- **The Special Care Unit (SCU)** is a short-stay program for men who would benefit from extra help with medical care, mental health or addictions. The majority of people who are admitted to SCU stay less than three months and then transition to housing. The program is operated through a partnership between the Salvation Army Ottawa Booth Centre and OICH. SCU staff include personal support workers (available 24 hours a day), case and front-line workers, nurses and doctors, as well as a mental health nurse practitioner.
- **The Special Care Unit (SCU) for Women** is operated in partnership with the Shepherds of Good Hope and the Canadian Mental Health Association (CMHA). The project supports homeless women with complex health needs and is similar to the SCU for men that operates through the Salvation Army Ottawa Booth Centre. An innovative aspect of the program has been the provision of a concurrent disorders treatment group, which is embedded in the SCU core program operated by the CMHA. This treatment model has been shown to be the most effective intervention for those living with both mental illness and substance abuse. The SCU for women targets women being discharged from hospital as well as long-term shelter users who live with severe mental illness and overwhelming addictions. This group of women is a priority due to their poor health status, frequent use of emergency medical and hospital services, and their involvement with the criminal justice system.
- **The Wet Program** operates out of the Shepherds of Good Hope. Clients receive Management of Alcohol services while admitted to the program, which currently serves as a staging area or a graduated step toward more permanent housing and harm reduction services.

iv. Ottawa Inner City Health Inc. was referred to by two of the interviewees. The information contained in this case example was obtained from the website of Ottawa Inner City Health Inc.: <http://ottawainnercityhealth.ca>.

- **The Oaks** is a partnership between the Shepherds of Good Hope, OICH and the CMHA. Of its 60 units, 45 are designated as domiciliary hostel beds by the City of Ottawa, while the other 15 beds are reserved for “aging at home” residents. Thirty beds are reserved for “managed alcohol residents” and 10 are allocated toward CMHA.
- **The Community Beds Program** was developed to provide health care services to OICH clients who are living outside the shelter environment. Clients may be living in a shelter, on the streets, in a rooming house or in a supported housing environment. The program was developed to provide clients who would eventually need to be admitted to OICH with an opportunity to receive health care services that might help them to remain in housing as long as possible and to support a smooth transition to residential services. The program is also used to support clients leaving OICH residential units to transition into a more independent situation. Most clients leaving a residential OICH program are able to access health care from other sources once they are housed. There are a small number of clients who are better supported by ongoing care from OICH, usually due to the complexity of their health problems. These clients are admitted to this program.

Service programs at OICH include the following:

- **The Mission Primary Care Clinic** was established to provide quick access to primary and mental health care to people who are homeless and without health care services. The clinic serves adults who are living in a shelter, on the streets or in a rooming house provided that they meet the acceptance criteria and have been referred to the clinic. The clinic’s goal is to treat homeless people in a timely fashion by reducing medical complications and linking them to ongoing access to health care services.
- **The Management of Alcohol** program provides clients with a maximum 5 oz serving of wine between the hours of 8 a.m. and 10 p.m. Program staff manage alcohol intake among participants to ensure that they are not dangerously impaired and that they remain in a safe environment while under the influence of alcohol.
- **Aging at Home** serves a cadre of seniors within the shelter system, rooming houses and low-income housing programs who either are homeless or rely on homeless services in order to meet basic needs (food, clothing, support). When these seniors are unable to manage independently, efforts to relocate them to more suitable facilities (retirement homes, nursing homes) are frequently unsuccessful, leaving both the seniors and the involved agencies with significant risks that generate poor health outcomes and high rates of emergency health care utilization. Living at risk, these clients often remain in the shelter environment for years, despite health issues such as dementia and memory problems, frequent falls, incontinence and difficulty ambulating independently. They are also vulnerable to physical and financial abuse by younger shelter residents. These clients frequent the hospital EDs and, when admitted, often wait on average for more than six months for nursing home placement. Often the fact that they have been homeless for decades makes long-term care placement the only option since there is no housing or family caregiver for the client to return to. The attachment of the patient to the homeless community often endures, making integration into long-term care facilities very challenging. It is especially difficult for those who struggle to adjust to a new environment marked by regulations and restrictions. Some clients are frequently asked to leave facilities due to challenging behaviours, while others return voluntarily to the shelters with which they are familiar and where they feel most at home.

4. Health Access St. James Town^v

The Health Access St. James Town project is an initiative of the TC LHIN in collaboration with St. Michael's Hospital, the United Way, the City of Toronto and Toronto Community Housing.

The project brings together health care providers who are committed to providing integrated and coordinated health services. This integration and coordination of services should make it easier for the St. James Town community to find and access necessary health care services, such as family physicians and support for the treatment of diabetes. It also helps people to connect with other services that are beyond the health care system but are important in preventing future illness.

To ensure that health care providers are providing the right types of services, the project consults with residents in order to better understand their health care needs and to gain insight into the services that are most important to them. They also focus on the barriers faced in accessing appropriate care and on determining how access to information and health services can be improved.

5. Saskatchewan Regional Intersectoral Committees^{vi}

Saskatchewan has 10 Regional Intersectoral Committees (RICs), each supported by a coordinator. RICs were formed in 1995 and include representatives from various sectors; they often include the regional health authority as a member. RICs are funded through the Province of Saskatchewan.

There is some degree of heterogeneity across the RICs in terms of focus and the partners involved, largely reflecting the local context within which they operate. However, in general, the RICs bring together stakeholders from across different sectors to develop and implement integrated service delivery responses to the needs of children, youth and families, and work to further human services integration.

The Saskatoon RIC (SRIC), for example, includes senior administrators from federal, provincial, municipal, First Nations and Métis governments. Its mission is to work in partnership with community voices and researchers to coordinate linkages that shape and influence policies, programs, funding and resource deployment in order to meet the diverse needs of vulnerable children, youth and their families. The SRIC is particularly interested in addressing gaps in and barriers to services for marginalized populations. Among the initiatives undertaken are the Saskatoon Aboriginal Employment Strategy, Saskatoon Poverty Reduction Partnership, Plan to End Homelessness, and Saskatoon and Region Early Years Partnership.

v. Health Access St. James Town was referred to by two of the interviewees. The information contained in this case example was obtained from Toronto Central Local Health Integration Network's website: www.torontocentrallhin.on.ca/Page.aspx?id=8164.

vi. Saskatchewan RICs were referred to by one of the interviewees. The information contained in this case example was obtained from RICs' websites: www.saskatoonric.ca; www.northeastric.ca; northwestric.ca; and www.reginaric.ca.

6. Advocating for Healthy Built Environments, Vancouver Coastal Health^{vii}

The built environment—the human-made surroundings in which people live, work and play—can mitigate or exacerbate factors that influence child health, disease and people’s life chances.

Local government planning decisions can create environments that facilitate child-friendly public spaces, social connections, clean air, active transportation and a more even distribution of public amenities that affect health and reduce health inequities. For example, improving the safety and walkability of a neighbourhood has been shown to decrease childhood injury rates and mental health issues—both of which have higher rates among children of lower socio-economic status—while increasing levels of children’s physical activity and community social cohesion.

Vancouver Coastal Health (VCH) helps local governments consider the broad health benefits when they make decisions about investments in or the design of community spaces and infrastructure. To this end, VCH plays a key role in national, provincial and regional coalitions, developing the knowledge platform for public health involvement in land use planning. VCH has also developed partnerships with municipalities and regional governments, and participates in their planning processes to ensure a health lens is included. For example, VCH prepared an evidence-based summary of the built environment factors that affect health and health equity, which will be used in community planning.

For this initiative, VCH is working with municipalities across the region to develop healthy Official Community Plans—policy frameworks for local governments that provide guidance for economic, social, environmental, and physical design and development.

VCH is currently working with the following communities: Richmond, Vancouver, the District of North Vancouver, the City of North Vancouver, the Sunshine Coast Regional District and Powell River.

vii. Advocating for healthy built environments by Vancouver Coastal Health was referred to during an interview with a health system manager. The information contained in this case example was obtained from VCH’s website: www.vch.ca/media/pophealth-tackling-health-inequities.pdf.

7. Hospital Collaborative on Marginalized and Vulnerable Populations^{viii}

Founded in May 2007, the Hospital Collaborative on Marginalized and Vulnerable Populations is a group of senior-level hospital representatives and key public policy and research facilities within the TC LHIN. The collaborative promotes cooperative planning to address care challenges among marginalized populations by working together to reduce health inequities. This is achieved through sharing resources and promising practices; harmonizing common policies and approaches to care; identifying and pursuing partnership opportunities; liaising with the wider health sector; and influencing public policy.

The collaborative has been instrumental in promoting a hospital equity planning and reporting process within TC LHIN. This process has expanded to other health service providers within the LHIN and to other LHINs.

Other examples of activities initiated through the collaborative include sharing patient education materials that have been translated into nine languages, the initiation of a health equity data collection project and a number of elder care initiatives.

8. Annapolis Valley Health's Organizational Capacity in Population Health^{ix}

The mission of Annapolis Valley Health (AVH), a district health authority in Nova Scotia, is “working together to promote and improve health of individuals, families and communities.” The organization has placed a strong emphasis on developing organizational capacity in population health. This commitment is reflected in the following:

- **Population Health Committee**—To engage staff, communities and decision-makers within the districts to implement a population health approach in developing and supporting practice, programs and policies. The terms of reference for the committee are available at www.avdha.nshealth.ca/sites/default/files/vision_process_1.pdf.
- **Population Health in Action Workbook**—To assist staff in thinking through a population health approach in their work and allow them to be more effective in achieving health outcomes. It is available at www.avdha.nshealth.ca/sites/default/files/workbook_0.pdf.
- **Population Health/Healthy Communities Advocacy Framework**—To guide, direct and strengthen AVH in the public policy work required to address the factors that help people to be as healthy as they can be—as individuals, families and communities. It is available at www.avdha.nshealth.ca/sites/default/files/advocacyframework2010_1.pdf.

viii. The Hospital Collaborative on Marginalized and Vulnerable Populations was referred to during an interview with a health system manager. The information contained in this case example was obtained from the following source: www.stmichaelshospital.com/pdf/corporate/equity_report_2010.pdf.

ix. The development of Annapolis Valley Health's organizational capacity in population health was referred to during an interview with a health system manager. The information contained in this case example was obtained directly from Annapolis Valley Health's website: www.avdha.nshealth.ca/program-service/population-health-services.

AVH's commitment to a population health approach is codified in corporate policy. The information below is taken directly from AVH's policy on Population Health Approach to Planning, Decision-Making and Fostering Healthy Communities in the Annapolis Valley, which was originally introduced in 2006 and was revised in 2010.

As of November 30, 2013

Policy Statement

Annapolis Valley Health endorses the adoption of a population health approach to planning and decision-making. AVH endorses and is committed to the following principles:

- Think “big picture”—the broad socio-economic environment influencing health outcomes and lifestyle choices
- Think health determinants—the broad range of factors that affect individual and population health. These determinants are: income and social status, social support networks, education, employment and working conditions, physical environments, social environments, biology and genetic endowment, personal health practices and coping skills, healthy child development, health services, gender and culture
- Strive for equity in health
- Form new strategic partnerships
- Think multi-strategies
- Think about evidence-data, epidemiological, clinical and experimental research, and community stories
- Think about evaluation
- Think about empowering practice and community participation in decision-making
- Think capacity building
- Think multi-sectors

Policy Objectives

The purpose of this policy is to strengthen Annapolis Valley Health's commitment to address the factors that affect the health of our population and ensure that AVH decisions, activities and outcomes are compatible with population health principles and AVH advocacy framework. Objectives of the policy are to

1. Support implementation of AVH Strategic Directions
2. Clarify expectations for Board members, physicians, volunteers, employees and students
3. Increase AVH capacity to understand and advance the population health approach and Healthy Communities Advocacy

Policy Directives

All AVH programs, services, physicians, volunteers, employees, students, Board and Executive will

1. Adhere to population health principles in planning and decision making
2. Identify in strategic, operational and business plans the decision, activities and outcomes that support adherence to a population health approach
3. Adhere to AVH Healthy Communities Advocacy Framework
4. Provide opportunities for learning and development around population health and the Healthy Communities Advocacy Framework

Accountability

Annapolis Valley Health Board and president and CEO have overall responsibility for ensuring the implementation of this policy and this will be addressed in AVH's annual report to the community.

9. Community Advisory Panels, St. Michael's Hospital^x

St. Michael's Community Advisory Panels (CAPs) are leaders in community–hospital collaboration for health equity. CAPs are a best practice model for health organizations around the world to improve hospital services through community engagement—particularly for those who are most vulnerable. St. Michael's three CAPs focus on

- **Women and children**—Provides advice and front-line experience to make St. Michael's services better for women and their babies. Since 1992, the Women and Children's CAP has worked on behalf of hundreds of women from downtown Toronto to improve services and programs for women at all of life's stages.
- **People who are homeless or under-housed**—Provides advice and front-line experience to make St. Michael's services better for people who are homeless. This CAP also supports the hidden homeless—those who are under-housed, who may stay with a succession of friends or acquaintances for days or weeks at a time. Since 1992, the work of this CAP has helped to advocate on behalf of hundreds of homeless and under-housed people in downtown Toronto, resulting in programs such as supports for people in the ED and access to family practice services at local shelters. This CAP was responsible for identifying a need to establish a temporary refuge for patients at St. Michael's who are discharged from emergency but have no place to go in the community. This led to the eventual establishment of the Rotary Transition Centre. Through the work of this CAP, the hospital has developed a tool to measure how homeless and under-housed clients at St. Michael's experience and access hospital care, compared with other hospital scorecards, including the general patient population. The results of this "snapshot" are used for hospital planning, reporting and research projects by the Centre for Research on Inner City Health. The Homeless Balanced Scorecard is the only one of its kind in Canada, and there is widespread interest in how this tool can be used to assess and improve the care of homeless patients.

x. The Community Advisory Panels at St. Michael's Hospital were referred to during an interview with a health system manager. The information contained in this case example was obtained from St. Michael's Hospital's website: www.stmichaelshospital.com/partners/caps/index.php.

- **People with severe and persistent mental illness**—The Mental Health CAP provides a consumer perspective to St. Michael's Hospital on matters related to the mental health continuum of care. With its community partners, the CAP advocates for change, including mental health reform, better income support and improved dental care. Since 1992, the Mental Health CAP has worked on behalf of hundreds of consumers/survivors from downtown Toronto on ways to improve mental health services, from the full spectrum of inpatient and outpatient care to social supports and community lunches. For example, the CAP identified a need to respond more effectively to 911 calls that involved individuals experiencing a mental health crisis. After consultation with community groups and the hospital, they helped create a unique partnership between the hospital and the police called the Mobile Crisis Intervention—a St. Michael's mental health nurse and a Toronto police officer travel together in an unmarked car to respond to and de-escalate crisis situations. The team helps to avoid unnecessary arrests or trips to the ED, and provides links to resources in the community.

CAPs are a dynamic mix of people—St. Michael's staff, patients, consumers and community members who care about health. The program is coordinated through the Inner City Health Program.

Since 1992, CAPs have maintained a crucial dialogue between St. Michael's Hospital and its broader inner city community. They bring the community voice into the hospital—and take the hospital into the community. CAPs help to create and support inclusive services for those who are at risk and have special needs.

The CAPs have contributed to 60 innovations in patient care, research and education that have had a significant impact on how St. Michael's provides services.

10. Program Budgeting and Marginal Analysis at Vancouver Coastal Health^{xi}

Vancouver Coastal Health (VCH) piloted a program budgeting and marginal analysis (PBMA) process in 2010. The aim of the project was to develop a plan to address a forecast deficit of approximately \$4.65 million for 2010–2011 in the Vancouver Communities division of the Vancouver Coastal Health Authority. Managers within this division submitted proposals for disinvestment (and investment) to the working committee for assessment and ranking, with recommendations forwarded to the Advisory Panel.

xi. Vancouver Coastal Health's program budgeting and marginal analysis approach was referred to during an interview with a health system manager. The information contained in this case example was obtained from two sources: Mitton, et al. Difficult decisions in times of constraint: criteria-based resource allocation in the Vancouver Coastal Health Authority. *BMC Health Services Research*. 2011;11:169. <http://www.biomedcentral.com/1472-6963/11/169>. Vancouver Coastal Health's blog. <http://upfordiscussion.vchblogs.ca/2013/01/budgeting-for-a-change/>.

A clearly defined set of weighted assessment criteria was developed to rate the proposals. The criteria and their relative weight were developed through a consensus process involving 20 managers and clinical leaders from the Vancouver Communities division. There were 13 criteria in total, including 2 criteria related to population health: *equity* and *health promotion and disease prevention*. *Equity* was defined as “impact on the health status of recognized groups where there is a known health status gap,” and 10% of a disinvestment/investment decision depended on how it scored on this criterion. For example, if a proposed disinvestment affected a significant proportion of people in disadvantaged groups within the population, it would score very low on the *equity* criteria. The criterion *health promotion and disease prevention* was defined as “impact on illness and/or injury prevention, well-being and harm reduction as measured by projected longer term improvements in health,” and 8% of a disinvestment/investment decision depended on how it scored on this criterion. Other criteria focused on factors such as alignment with VCH strategy, number of people impacted and feasibility of implementation.

The PBMA process resulted in recommendations of 44 disinvestment initiatives with an annualized value of \$4.9 million, which were subsequently approved by senior management for implementation.

An evaluation of the PBMA experience revealed that staff members were extremely positive about framework implementation and the resulting recommendations. In 2013, VCH expanded the PBMA pilot to five areas: Regional Mental Health and Addictions, Human Resources/Employee Engagement, the Regional Cardiac Program, Renal, and Public Health.

11. Health Equity Data Collection^{xii}

In 2010, three of Toronto’s most diverse hospitals—the Centre for Addiction and Mental Health, Mount Sinai Hospital and St. Michael’s Hospital—identified an acute need for quality patient socio-demographic data. Together, they launched a pilot project to develop an evidence-based approach for collecting this patient information. Toronto Public Health later joined this effort, creating potential for broader impact within the sector. The organizations aimed to answer three key questions:

- What are the best methods to collect patient demographic data?
- What questions are most effective for capturing useful data while maximizing comfort of both staff and patients?
- What is the relationship between demographic factors (language, disability, etc.) and self-reported health?

xii. The Health Equity Data Collection initiative in TC LHIN was referred to by several interview and workshop participants. The information contained in this case example was obtained directly from the website of one of the hospitals participating in the initiative: http://knowledgex.camh.net/health_equity/Pages/TRI+TPH.aspx.

Prior to launching the pilot project, the partners conducted a literature review and environmental scan, identified the relevant demographic questions and developed training materials for data collectors. Data was collected on patients' race, age, preferred language to speak and read, length of residency in Canada, housing status, disability status, religion, gender identity, sexual orientation and income. A variety of data collection methods were used to reflect the unique patient populations of each site, while allowing the partners to examine the impact of different collection techniques on data quality. The data collectors gathered patient information through in-person interviews, hand-written forms and computer tablets set up in waiting rooms.

The project was an overwhelming success, with a patient participation rate exceeding 85%. Given its potential for transforming patient care, the TC LHIN issued a directive requiring all 17 of its hospitals to begin collecting data from patients using eight core socio-demographic questions. Data collection and analysis is crucial to the health care system's ability to meet the diverse needs of Toronto's population and improve the quality of health care overall. Additionally, hospitals are finally able to gain much better insight into the patients they serve, so that they can better meet their needs.

Appendix B: CIHI Project Ideas

Informed by phases 1 and 2 of the project, and additional research where required, a set of project ideas was formulated that could be implemented by CIHI to help integrate the population health approach in health system planning and decision-making:

1. **Upcoming Conferences**—Present the project findings at relevant conferences and workshops.
2. **Health Care Symposium**—Present the project at an upcoming health care symposium, with the dual objective of sharing the findings and gauging the extent to which the two solitudes are indeed an issue within the health care community.
3. **Publications**—Publish results of the project in a peer-reviewed journal as part of the knowledge dissemination.
4. **Opinion Leaders**—Sponsor a commentary series by opinion leaders on the need to integrate a population health approach into health system planning and decision-making.
5. **Coalition**—Establish a national coalition to promote the advancement of the population health approach within the health care system; initial members could include CIHI, Accreditation Canada and the Canadian Medical Association.
6. **40 Years Since Lalonde**—Through the coalition, explore the idea of hosting a symposium to commemorate 40 years since the release of the Lalonde report, including the launch of a 10-year campaign to improve population health.
7. **Document Inspiring Leadership**—Develop a series of short documentary-style videos featuring lead users of the population health approach in health care, drawing on the case examples explored through the lead user interviews.
8. **Elearning**—Develop an internal CIHI elearning module to advance the understanding of population health concepts and information issues among staff.
9. **Tools With Accreditation Canada**—Partner with Accreditation Canada to develop standards for population health needs assessment.
10. **Patient-Level Socio-Demographic Data Collection**—Partner with TC LHIN on a feasibility study for collecting socio-demographic data through existing CIHI databases (for example, the Discharge Abstract Database).
11. **Population Health Infostructure Project (PHIP)**—Initiate the PHIP pilot (details described elsewhere).
12. **High Users**—Undertake a project that uses qualitative and quantitative methods to examine high users of health care and the responding social determinants.
13. **HSP Scorecard Indicators**—Identify and develop population health indicators for inclusion in the HSP scorecard.

The relative potential of each project idea was assessed against five criteria:

- **Relevance** to bridging population health and health care;
- **Consistency** with CPHI's role;
- **Feasibility** of implementation;
- Potential **impact** and added value; and
- Demonstration of **innovation** and leadership.

The results of the assessment are provided in Table 4. Project ideas with the most potential are Publications, Opinion Leaders, Coalition, 40 Years Since Lalonde, High Users, Patient-Level Socio-Demographic Data Collection and HSP Scorecard Indicators.

Table 4: Assessment of Project Ideas

	Relevance	Consistency	Feasibility	Impact	Innovation	Total
1. Canadian Public Health Association (CPHA) Conference	●	●	●	◐	○	3.5
2. Health Care Symposium	●	●	●	◐	○	3.5
3. Publications	●	●	●	●	◐	4.5
4. Opinion Leaders	●	●	●	●	◐	4.5
5. Coalition	●	●	◐	●	●	4.5
6. 40 Years Since Lalonde	●	●	●	●	◐	4.5
7. Document Inspiring Leadership	●	◐	○	◐	●	3.0
8. Elearning	◐	●	●	◐	◐	3.5
9. Tools With Accreditation Canada	●	●	○	◐	◐	3.0
10. Patient-Level Socio-Demographic Data Collection	●	●	○	●	●	4.0
11. Population Health Infrastructure Project	◐	●	○	◐	●	3.0
12. High Users	●	●	◐	●	●	4.5
13. HSP Scorecard Indicators	●	●	●	◐	◐	4.0

Appendix C: Interview Guide

- We would like to inform you that participation is voluntary; you can choose not to answer an interview question by saying “pass.”
- Answers will be kept anonymous; the study is primarily interested in themes that emerge across the interviews.
- You have the right to withdraw from the study at any time, during and after the interview.
- Do we have your consent to audiotape the interview? If consent is not provided, the interview can still proceed without being audiotaped.

Awareness, understanding and application of the concepts of population health

1. What does a population health approach look like from your perspective?
2. Do you think the health care system does enough to improve population health, and why?
 - What role do you see a health care organization playing with respect to intersectoral collaboration?
3. You’ve been nominated as someone who is making or has made demonstrable changes toward improving population health. Can you describe what you’ve done in this regard?

Impetus and hindrances—personal, organizational, system—for improving population health

4. What was the impetus for those changes—personal/organizational/system; extrinsic/intrinsic?
5. What stood in the way and what helped move those changes along?
6. To what extent have you or has your organization instituted permanent mechanisms for enhancing population health?
 - Programs and policies (embedding population health into ongoing operations)
 - Human resources (hiring, training for population health)
 - Leadership (having people with population health perspective on senior management team; incentives)
 - Mechanisms for community outreach and intersectoral collaboration

Role and value of population health information

7. When I refer to “population health information,” what does that mean to you?
8. Compared with other enablers, how important is information to the adoption of a population health approach in the formal health care system?
9. Do you have an analysis and reporting function within your organization that manages population health information (reporting on health status and equity, program evaluation)? If so, please describe it.
 - Is it a dedicated unit with dedicated staff?
 - How frequently do you receive information from them?
 - How is this information used within the organization?
 - Does it provide information on equity (stratification by outcomes/subpopulations)?
10. Can you provide examples of where population health information has impacted decisions? How?
11. What are the different types of population health information you rely on regularly?
12. What are the five key pieces of population health information deemed most important to your decision-making needs?
 - And at what geographical level?
13. Do you have thoughts on how to improve the usefulness of population health information?
 - Scope
 - Relevance
 - Reliability
 - Timeliness
 - Information presentation
 - Others

Lead users

14. We are organizing workshops involving lead users of population health information to come up with ideas on how to strengthen population health information in Canada.
 - Who do you see as innovators in the use of population health information that you would recommend for these workshops?

Appendix D: Workshop Guide

Date: March 26, 2013

Location: Port McNeill Room, Sheraton Vancouver Wall Centre, 1088 Burrard Street,
Vancouver, B.C.

Purpose: Review and discuss findings of the Population Health and Health Care study
Challenge participants to come up with innovative ideas for improving population
health information

Agenda

8 to 9 a.m.	Breakfast
9 to 9:15 a.m.	Welcome and Project Introduction Jean Harvey Director, Canadian Population Health Initiative, Canadian Institute for Health Information
9:15 to 9:30 a.m.	Purpose of the Day and Participant Introductions Tai Huynh, Project Consultant
9:30 to 10:15 a.m.	Project Findings, Part 1: Approaches and Perspectives on Population Health Among Senior Health Care Decision-Makers Across Canada Deborah Cohen
10:15 to 10:45 a.m.	Discussion on Findings All participants
10:45 to 11 a.m.	Coffee Break
11 to 11:30 a.m.	Project Findings, Part 2: Population Health Information Needs Among Senior Health Care Decision-Makers Across Canada Tai Huynh
11:30 a.m. to 12 noon	Discussion on Findings All participants
12 noon to 1 p.m.	Lunch
1 to 1:15 p.m.	Instructions for Afternoon Workshop Activities Tai Huynh
1:15 to 2 p.m.	Workshop Challenge: Each team to come up with five ideas that could be implemented in the next five years to address the needs of each of the three representative users Work in teams (x3)
2 to 3 p.m.	Presentations and Discussion of Ideas All participants
3 to 3:15 p.m.	Coffee Break
3:15 to 3:30 p.m.	Summary of the Day and Next Steps Cory Neudorf Assistant Professor, University of Saskatchewan, College of Medicine Chief Medical Health Officer, Saskatoon Health Region

Date: March 28, 2013

Location: Regent Room, Crowne Plaza Toronto Airport, 33 Carlson Court, Toronto, Ontario

Purpose: Review and discuss findings of our study

Challenge participants to come up with innovative ideas for improving population health information

Agenda

8 to 9 a.m.	Breakfast
9 to 9:15 a.m.	Welcome and Project Introduction Jean Harvey Director, Canadian Population Health Initiative, Canadian Institute for Health Information
9:15 to 9:30 a.m.	Purpose of the Day and Participant Introductions Adalsteinn Brown Director, Institute for Health Policy, Management and Evaluation Division Head, Public Health Policy, Dalla Lana School of Public Health Scientist, Keenan Research Centre, Li Ka Shing Knowledge Institute, St. Michael's Hospital
9:30 to 10:15 a.m.	Project Findings, Part 1: Approaches and Perspectives on Population Health Among Senior Health Care Decision-Makers Across Canada Deborah Cohen
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3 to 3:15 p.m.	Coffee Break
3:15 to 3:30 p.m.	Summary of the Day and Next Steps Jean Harvey

Persona Cards

Alex Analytics/Epidemiology Department Manager

Needs

Alex is a resource-constrained analytics/epidemiology department manager who doesn't quite have all the data he needs to produce reports on the health of the surrounding population.

Frustrations

- Lack of reliable data
- Lack of epidemiology staff
- Abundance of data and indicators about clinical care



“What we need is data that is current, granular and with more demographic characterization attached to it.”

Liz Regional Health Authority CEO

Needs

Liz is a busy regional health authority CEO who has made it her mission to reduce health inequities but is under constant pressure to deal with health care delivery issues (access, wait times) that are high priority for her board and government.

Frustrations

- “Tyranny of the urgent” cannibalizing time and energy
- Lack of population health indicators and targets on scorecard
- Difficulty building strong business case with the board for investing in population health



“Having public and population health people at the table is key. But it's hell getting them to set a target and time frame.”

Tom Deputy Minister of Health

Needs

Tom is a deputy minister of health who understands the importance of the social determinants of health but is having little traction engaging his minister and colleagues in other ministries in considering a long-term, inter-ministerial approach to health.



Frustrations

- Strong government focus on meeting public demands for more health care
- Other ministries approach collaboration with ministry of health with suspicion
- Upcoming election is putting pressure on the need to show immediate results

“ For population health initiatives, the evidence is often weak. When put up against medical evidence, the latter wins most of the time. ”

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