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Accelerating knowledge to action: the pan-Canadian cancer control strategy

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ABSTRACT

Background

In 2006, the federal government committed funding of $250 million over 5 years for the Canadian Partnership Against Cancer Corporation to begin implementation of the Canadian Strategy for Cancer Control (CSCC). The Partnership was established as a not-for-profit corporation designed to work actively with a broad range of stakeholders and organizations that had been engaged in the development of the CSCC and with the public more broadly. A policy experiment unto itself, the Partnership was the first disease-based organization funded at the federal level outside of government. It was charged with a mandate to enable transfer of knowledge and to catalyze coordinated and accelerated action across the country to reduce the burden of cancer.

Implementation

Implementation has involved establishing shared goals, objectives, and plans with participating partners. Knowledge management—incorporating pan-Canadian approaches to the identification of content, processes, technology, and culture change—was used to enable that work across the federated health care delivery system. Evaluation of the organization through independent review, the ability to achieve initiative-level targets by 2012, and progress measured using indicators of system performance was used to examine the effectiveness of the strategy and approach overall.

Discussion and Conclusions

Evaluation findings support the conclusions that Canada has made progress in achieving immediate outcomes (achievable in <5 years) associated with advancing its cancer control goals and that there is evidence that, with sustained effort, those goals will translate into a long-term (>25 years) impact on cancer. The mechanism of funding the Partnership to develop collaboration among stakeholders in cancer control to achieve coordinated action has been possible and has been enabled through the Partnership's knowledge-to-action mandate. Opportunities are available to further engage and clarify the roles of stakeholders in action, to clearly define outcomes, and to further quantify the economic benefits that have resulted from a coordinated approach. With the ongoing funding commitment to support coordinated action within a federated environment of health care delivery, there is opportunity to reduce the impact that cancer may have in the long term in Canada.

KEY WORDS

Cancer, cancer control, cancer strategy, knowledge management, knowledge transfer, collaboration, partnerships

1. BACKGROUND

For more than a decade, there has been a growing movement globally to support the development and implementation of cancer control plans designed to lessen the impact of cancer. In 2002, the World Health Organization urged all countries to develop comprehensive cancer control plans [1], and in 2005, the World Health Assembly passed a resolution on cancer prevention and control, calling on member states to "intensify action against cancer by developing and reinforcing cancer control programs" [2]. The 2011 United Nations Summit on Non-communicable Diseases, at which cancer was profiled as one of four major diseases, highlights the sustained focus on the burden of cancer globally.

In Canada, stakeholders interested in making substantial improvements in cancer control came together starting in 1999 to develop the Canadian Strategy for Cancer Control (CSCC) [3]. Through years of consultation, and with the input of more than 700 professionals, patients, and organizations, the CSCC was the first of its kind for Canada, providing an inclusive, integrated approach across the continuum of cancer control: primary prevention, screening, surveillance, research, and throughout the cancer journey of cancer care, post active treatment, and palliative and end-of-life care. The CSCC was developed recognizing the unique requirements of the federated health care environment in Canada; articulating a pan-Canadian approach; and working through networks to make research evidence and best practices easily accessible, transferable, and actionable.

In 2006, the federal government committed funding of $250 million over 5 years for the Canadian Partnership Against Cancer Corporation to begin the implementation of the CSCC. The Partnership was established as a not-for-profit corporation designed to work actively with a broad range of stakeholders and organizations that had been engaged in the development of the CSCC and with the public more broadly. A policy experiment unto itself, the Partnership was the first disease-based organization funded at the federal level outside of government. It was charged with a mandate to enable the transfer of knowledge and to catalyze coordinated and accelerated action across the country to reduce the burden of cancer.

The Partnership works with its partners to achieve four goals. Three are the goals of the CSCC that will be realized with a long-term commitment to cancer control efforts over 20–30 years:

- Decrease the risk of cancer developing
- Improve quality of life and experience for those living with cancer
- Decrease the likelihood of dying from cancer

The fourth goal is "to improve the efficiency and effectiveness of cancer control by catalyzing and enabling coordinated action." This final goal addresses the unique opportunity in a federated health care model to invest $50 million per year in areas that leverage the approximately $6 billion spent annually on delivery of cancer services by provincial and territorial programs, governments, and other health care organizations to catalyze and accelerate progress towards the common cancer control goals for Canada. With the Partnership's funding, organizations across the country reduce duplication and collaborate more effectively to advance cancer control efforts than if they were to work alone. Given that between 2006 and 2031, the cancer incidence in Canada is expected to rise to 280,000 new cases per year from 160,000 cases, and that deaths from cancer will increase to 107,000 annually from 68,000 [4], it is critical to the success of the work of the Partnership to motivate systems change with a shared vision of the improvements that need to be addressed today to ensure a reduced impact of cancer on Canadians tomorrow.

To enable the strategy and to support system change, the Partnership adopted a knowledge management approach. "Knowledge management" is the collection of processes that govern the creation, dissemination, and utilization of knowledge. The National Collaborating Centre for Methods and Tools identifies four interdependent core components of a knowledge management approach [5]:

- Content (the knowledge base itself, which includes both explicit and tacit knowledge)
- Processes (including the required exchange and implementation approach)
- Technology (as platform and enabler)
- Culture (making knowledge management practices second nature)

The role defined for the Partnership applies those principles and components of knowledge management to provide support and coordination across jurisdictional and organizational boundaries.

2. IMPLEMENTATION

2.1 Shared Goals, Objectives, and Plans

With the Partnership's role of putting knowledge into action, considerable attention was placed on developing clear plans with measurable outcomes and deliverables. In 2007, as the strategic plan was set, several immediate outcomes that could be achieved were drawn from the CSCC. Funding was based on an assumption that work would advance in each of the eight priority areas, which include prevention, screening, health human resources, cancer journey, guidelines, standards, surveillance, and research, and the two enabling functions of knowledge management and performance measurement. The Partnership board determined that success requires focus, and it approved initiatives likely to make an impact and to achieve measurable results within

the 5-year mandate. Selection of the initiatives was guided by a set of criteria, including

- addressing a key known gap.
- alignment of federal/provincial/territorial priorities.
- scale, with priority given to large-scale initiatives that included multiple jurisdictions.
- likelihood of measurable outcomes within a 5-year period.
- the likely long-term impact on the overall burden of cancer or on the capacity to address it.
- advancement of efforts in which a pan-Canadian approach is required.
- ability to measure how the initiative will affect short-term movement toward the intermediate and long-term outcomes.

Outcomes were defined (Table I) in terms of immediate (likely to be achieved within the initial 5-year mandate), intermediate (more than 5 years to see the effects), and long-term impacts (more than 25 years to see the effects).

2.2 Knowledge Management Approach

All of the Partnership's initiatives contain elements of knowledge management in their approach:

- **Content** is drawn from existing and new research evidence and also from the practice and policy experiences of various partners across Canada, helping to make those evidence-based or -informed approaches more widespread in other parts of the country. One example is the Coalitions Linking Action and Science in Prevention initiative, which brings together coalitions representing research, policy, and practice perspectives to advance large-scale multijurisdictional prevention initiatives [6].
- **Processes**—such as convening, brokering, and creating opportunities for exchange and dialogue among diverse sets of stakeholders (professional experts and researchers, system leaders and managers, policymakers, patients, and the public)—form a key part of all initiatives. Most use knowledge transfer and exchange forums and mechanisms, enabled both through in-person and virtual interactions, as means to create connections and to share expertise and experience; to synthesize evidence; and to broaden planning, implementation, and evaluation with stakeholders. In addition, embedding evidence at the point of use, such as structured synoptic reporting in the areas of pathology and surgery practice, was deployed to increase the adoption of evidence.
- **Common technology and information platforms** are core enabling features of the strategy.

  The knowledge management platform http://cancerview.ca is designed as a hub of tools, resources, evidence, and information developed to support pan-Canadian implementation of the strategy and to profile resources available from partners and stakeholders that can be leveraged and utilized by others. It also provides a place for online, virtual collaboration to support knowledge exchange and coordinated action.

  The System Performance report [7] provides a common information platform using a series of indicators and pan-Canadian analysis that help jurisdictions to understand their results in a pan-Canadian context. It was developed through engagement with partners to determine what is important strategically and also to discuss results collectively.

  To illuminate long-term impacts on both the disease burden and the economy, a cancer-risk management platform was developed to support those making decisions about cancer control by providing an interactive, micro-simulation modelling capability to assess the effects of changes in programs. The platform provides a common tool to ground decision-making, and it can used for analysis at both the national and the jurisdictional levels. For example, the cancer risk management platform was recently used to model the potential system impacts of implementing low-dose computed tomography screening for lung cancer.
- **Pan-Canadian culture change,** fostered so that it naturally occurs to people to look outside of their local jurisdiction for solutions to common issues or for ways to achieve common goals, is fundamental to the strategy. Cooperative involvement, trust, and incentives are three essential components that create a culture conducive to effective knowledge management [8]. Himmelman describes coalitions as the organization of organizations working together for a common purpose, with a continuum of strategies deployed depending on the nature of the effort: networking, coordinating, cooperating, and collaborating [9]. Two initiatives—the National Staging Initiative and the Colorectal Screening Network—are examples of this culture change. Table II highlights the details of how the work was executed across the federated health care environment of Canada. They represent initiatives with active participation from every province across Canada.

TABLE I Mapping immediate, intermediate, and long-term outcomes identified for example initiatives over the first five years of implementation of the strategy (at March 2012)

Initiative	*Outcome*			
	Immediate (<5 Years)	*Anticipated at March 2012*[a]	*Intermediate (>5 year)*	*Long-term (>25 years)*
Colorectal Screening Network	Improved quality of screening	Increased availability of screening, with increased participation rates	Enhanced population-based screening and prevention	Reduction in the expected number of cancer cases
Coalitions Linking Action and Science in Prevention	Access to evidence-based knowledge and research in screening and prevention	Evidence of practice and policy change reflecting increased efforts to prevent cancer and chronic disease		
Carex Canada	Capacity to answer real-time population-based questions about cancer risk factors and behaviour	Reporting on mapping of at least five known carcinogens (IARC priority) on a national basis		
Resources and leadership capacity-building in person-centred care available and adopted	Improved access to integrated patient care	More than six jurisdictions have identified target populations who are being screened for distress (6th vital sign) and who can access effective programs and services through professional, peer, or virtual navigation	Improved cancer experience for Canadians	Enhance the quality of life of those living with cancer
National Staging Initiative	Improved accuracy and completeness of information in cancer control	90%-Population-based collaborative stage data capture in 9 of 10 provinces; available for use	Enhanced integration of knowledge and research	
Develop a common platform of technology, tools, and strategies to support efficient and effective knowledge generation, exchange, and uptake to advance cancer control across Canada (http://cancerview.ca)		Cancerview.ca developed and supporting major efforts of the strategy, enabling the virtual work of more than 180 pan-Canadian groups and providing a central community of cancer information in Canada		
Build capacity to address health human resources challenges in Canada, including planning considerations	Improved coherence of health human resources coordination in cancer control	Online repository identifying and organizing innovative models of service delivery available through http://cancerview.ca		
System performance initiative to develop pan-Canadian indicators to measure and report on the Canadian cancer control system	Improved reporting on performance in the cancer control domain	Accepted national indicators for advancing cancer control being reported annually	Enhanced cancer control system	Lessen the likelihood of Canadians dying from cancer

[a] Based on results reported at end of 2011.
IARC = International Agency for Research on Cancer.

TABLE II Examples of two large-scale pan-Canadian initiatives, illustrating shared goals and responsibilities for delivery

Aspect	*National Staging Initiative*	*Colorectal Screening Network*
Gap	Collection and completeness of stage data capture vary across Canada, limiting surveillance and the assessment of the impact of cancer control interventions	Low rates of participation in colorectal cancer screening
Goal	90% Population stage data available for the four major cancers, captured according to the Collaborative Staging CSV2 standard Advance the adoption and use of electronic synoptic pathology reporting to improve the quality of pathology reporting and to increase the efficiency of data capture for staging	Increase participation in colorectal cancer screening Increase the number of established colorectal screening programs
Pan-Canadian Coordinated Effort	Establish a pan-Canadian goal Provide a mechanism for knowledge exchange and investigation of common issues Provide infrastructure for support and pan-Canadian input to standards development Overall project tracking and contract management	Convene and enable knowledge exchange, sharing of business plans, program design Coordinate the development of common quality determinants and approach to measurement of program impact
Provincial/organizational responsibility	Multi-year project implementation plans to improve registry and data capture practices and contribute to pan-Canadian goal Participate in pan-Canadian collaborative processes related to data quality, training, lessons learned from project implementation Accountable for deliverables through contracting mechanisms (Some provinces included responsibility for the capture of data from the Territories)	Identification of provincial lead for participation in the colorectal screening network Commitment to share experiences and resources and to adopt common metrics
Anticipated results[a]	90%-Population-based staging data capture will be achieved in 9 of 10 provinces in Canada. The final province has initiated the work, but will not meet the timeline by March 2012 In 7 of 10 provinces, the goal will be exceeded and include all diseases College of American Pathology checklist standards for reporting endorsed in Canada In 2 provinces, electronic synoptic pathology reporting successfully implemented	Set of quality assurance indicators collaboratively established. Increased participation in screening programs: self-reported data rose to >32% in 2012 from <20% in 2007 Screening programs announced in provinces, with 6 provinces operational and providing data on quality indicators

[a] Reflects anticipated final results at March 31, 2012.

3. EVALUATION

Evaluation is a key component of the strategy and its delivery, and to date, evaluation has occurred at two levels. The first is evaluation of the organization and the progress made in advancing the goals of the strategy so far. A second form of evaluation was conducted for specific initiatives and was, in many cases, published in the form of white papers and peer-reviewed publications. (Several of the latter type of evaluation are currently under way and are therefore not highlighted here.)

The most recent evaluation at the organizational level was completed in May 2010 for Health Canada [10], and it focused on two key questions:

- Has the Partnership, in carrying out the strategy, advanced public health objectives for cancer control in Canada? This evaluation included assessments against outcomes identified in Table I.

- Has the Partnership, as a not-for-profit corporation, been an effective tool for advancing the CSCC objectives?

The evaluation methodology used four lines of evidence: interviews with 43 key informants, a survey of 100 CPACC stakeholders, a document and file review, and an online literature review. Progress against targets set at initiation of the strategy and expected to be achieved by March 2012 was also assessed. In terms of overall progress across the cancer continuum, the system performance initiative provides a series of pan-Canadian indicators of health system performance.

3.1 Evaluation Results

The evaluation conducted for Health Canada by EKOS Research Associates identified several key findings, opportunities for improvements, and recommendations:

- Despite the fact that the review came relatively early in the lifecycle of the initiatives, the Partnership had made good progress with respect to the most of its immediate outcomes (Table I). Progress was slower for outcomes requiring more active engagement from practitioners and those responsible for delivering health services. Evidence also suggested that the Partnership was making progress toward achieving its intermediate and final outcomes. However, it was acknowledged that such progress needs participation and active engagement from all parties, particularly the jurisdictions responsible for health care delivery.
- There was also evidence that the Partnership had developed partnerships and collaborations with other stakeholders in the cancer control domain in Canada. However, one challenge was a lack of clarity and understanding among various stakeholders of the specific roles and responsibilities in their relationships with the Partnership and with the strategy. The understanding of the strategy on the part of the Partnership's stakeholders was seen as variable, depending on their relationship with the work. The closer the ties to the organization, the greater the awareness of the overall strategy.
- Robust methods of monitoring progress on strategies were in place, but an approach to measuring outcomes rather than outputs has to be developed.
- In terms of the knowledge mandate, the evaluation acknowledged that a key role of the Partnership is to disseminate knowledge and information. The evidence indicates a high level of satisfaction on the part of stakeholders with the credibility, accessibility, and timeliness of information provided by the Partnership.
- Although there is strong evidence of the synergies and costs savings resulting from activities, no quantifiable data on actual cost savings are available. Acquisition of such data should be considered in future.
- Finally, the current nongovernmental organization model was seen as the most appropriate approach for continuing to advance the strategy in a federated environment.
- Overall, the evaluation cited evidence that the health burden of cancer will continue to be significant in coming years, and with the variable and fragmented nature of cancer control in Canada, there is need for an organization such as the Partnership to act as a knowledge broker.

In terms of progress on the work, at the final fiscal quarter of the initial 2007–2012 mandate, of the 55 targets that had been set to be achieved with the strategic plan, a total of 51 had been fully achieved. The remaining targets are all well on track to being achieved. They include major initiatives such as staging, for which it is anticipated that 9 of 10 provinces (including data for the territories) will reach the population-based target set at the start of the program, and that the size and scale of progress is seen as a success. The annual system performance report also identifies measures of the progress that is being seen. A measure of stage capture included in the reports (both for 2009 and for 2011), reinforces the trend toward achievement of population-based staging data for the four major cancers and also extends beyond to include all diseases. Another example is the goal for colorectal screening, with rates of participation in screening having increased from less than 20% to more than 32%, and expansion of the availability of colorectal screening across the country [7].

4. DISCUSSION: MOVING FORWARD

A key milestone in the achievements of the CSCC, the Partnership, and all its partners and participants was the announcement in March 2011 of continued funding for the strategy during 2012–2017 at the same funding level of $250 million. This commitment by the federal government signals the ongoing need to actively manage the risk that cancer poses to Canada and to build on the successful efforts for coordinated action in cancer control. A new preliminary logic

model summarizes the approach and intended impacts of the continuing strategy (Figure 1).

What have been key contributors to the progress achieved? What adjustments should be considered as the system moves ahead based on all that has been learned?

Certain attributes of the system in Canada lend themselves to the success of this public policy experiment. Examples include the organization of cancer programs and services by province (and by chronic disease in the territories) and also the foundational surveillance infrastructure provided by cancer registries and reported through national organizations. Given Canada's large geography and relatively small population, with its small cancer clinical community (in the global context), collaboration is essential to effectiveness in advancing cancer control. Engagement and strategic alignment with leaders and organizational partners at all levels must be sustained.

Canada has had a unique opportunity to deploy a coordinated approach for advancing cancer control in a federated health environment. Although the Partnership has no legislative or policy authority levers, work has been advanced through and with the active participation of partners motivated to address the burden of cancer in new ways. Adopting an approach that uses knowledge management as a key enabler and fostering a culture that will support knowledge management at the systems level has allowed those who are ready to implement to help lead and guide efforts, and yet to bring other jurisdictions along so that they can reduce duplication when they are ready to initiate action. Based on the outcomes achieved in the first years of this strategy, sustained effort holds promise to forward the long-terms goals for cancer control, reducing the impact of cancer in years to come.

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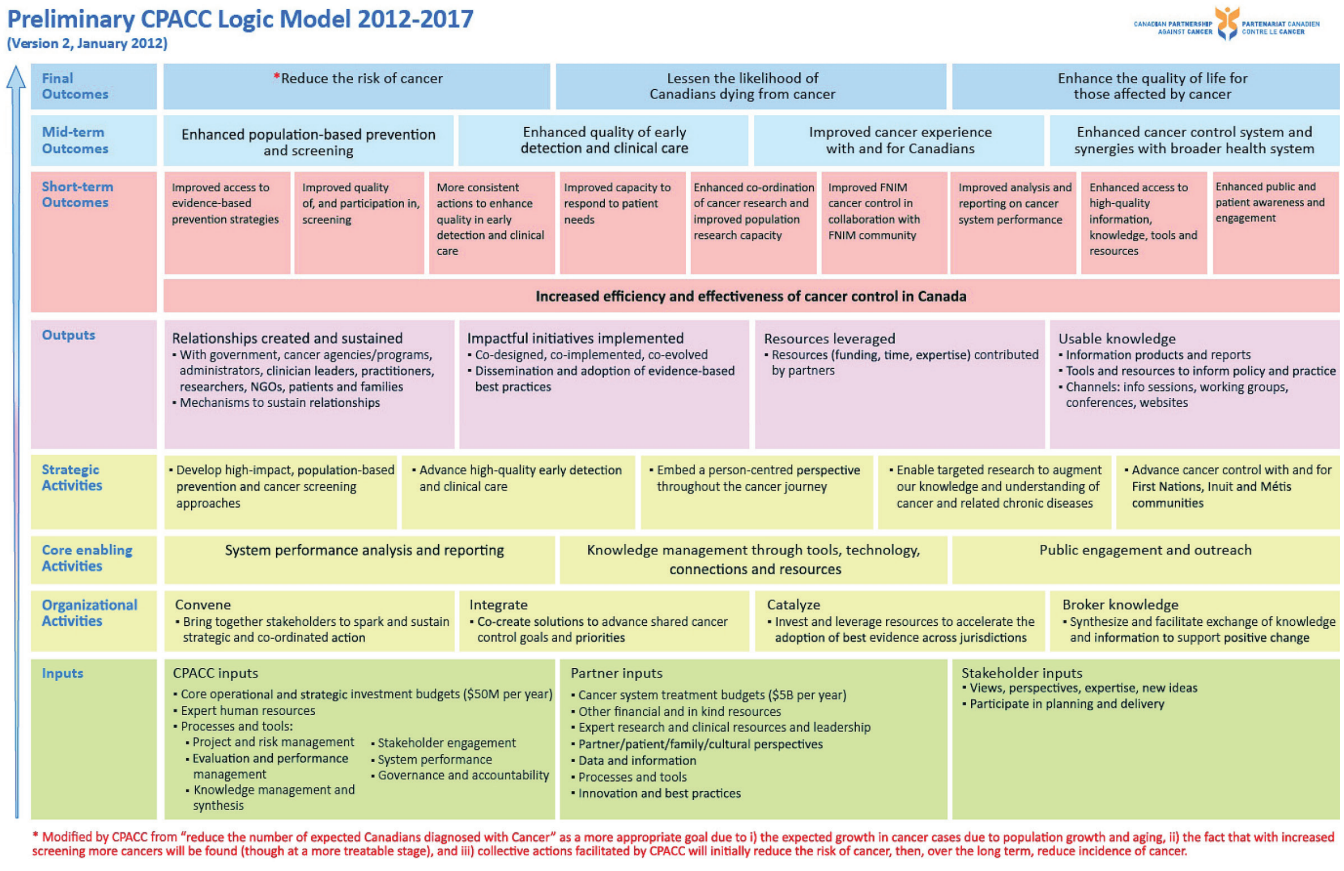

FIGURE 1 *Preliminary logic model for 2012–2017 for the Canadian Partnership Against Cancer Corporation.*

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6. CONFLICT OF INTEREST DISCLOSURES

The authors of this paper are members of the management team of the Canadian Partnership Against Cancer.

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