



TARGET 2020

A STRATEGY FOR
COLLABORATIVE ACTION
2015–2020



Members of the Canadian Cancer Research Alliance are motivated by the belief that, through effective collaboration, Canadian cancer research funding organizations can maximize their collective impact on cancer control and accelerate discovery for the ultimate benefit of Canadians affected by cancer.

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2015–2020

SEPTEMBER 2015

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FOREWORD



We are fortunate in Canada to be one of only a handful of countries around the world implementing a robust national cancer control strategy. The success of this strategy relies on collaboration amongst provincial and territorial cancer agencies, cancer charities, patients and caregivers, researchers, clinicians and governments to accelerate action on emerging evidence. With cancer affecting an estimated two in every five Canadians and costing governments approximately \$6 billion annually in healthcare expenditures it is incumbent on us to work together to identify and implement solutions to address this situation for the benefit of all Canadians, present and future. The Canadian Partnership Against Cancer (CPAC) was established by the Government of Canada with the mandate to implement the strategy across the continuum of cancer control.

The Canadian Cancer Research Alliance (CCRA) has its origins in Canada's cancer control strategy and has emerged to bring a new vision for a nationally coordinated research effort in cancer. CPAC has been a CCRA member dating back to the Partnership's inception, and since 2008 CPAC has funded and housed the CCRA Executive Office. Collaborative action by CCRA members over the years has demonstrated that through joint action large impactful initiatives are possible.

The Canadian Cancer Clinical Trials Network, for example, is a pan-Canadian initiative to improve patient access to trials and the efficiency and quality of clinical trials activities in Canada. The initiative started with initial seed funding from CPAC and has evolved to a multi-partner undertaking involving funders and cancer centres across the country. Connecting cancer patients with clinical trials may help to improve their chances of better treatment and outcomes, two key elements of Canada's national cancer strategy.

Another example is the Canadian Partnership for Tomorrow Project, a multi-partnered initiative where CPAC has invested significantly. This national population cohort involving over 300,000 volunteers, will provide valuable data to help our understanding of the causes of cancer and other chronic disease. The vision for both of these transformative initiatives would not have been realized in the absence of collaborative action by funders of cancer research.

Target 2020, the second shared strategy developed by CCRA members articulates a series of actions to address research priorities over the coming five years through coordinated and collaborative research efforts and investments. The results of this research will accelerate cancer control as they are applied and translated into practice and policy. Through these contributions research is helping to fulfil the vision of Canada's cancer control strategy.

CPAC is proud to be a collaborator and enabler of this strategy for cancer research in Canada. By working together we will achieve our collective goal of having fewer people develop cancer, more people successfully treated, and there is a better quality of life for people during treatment and beyond.

Shelly Jamieson

CEO, Canadian Partnership Against Cancer

MESSAGE FROM CCRA

Cancer is the leading cause of death in Canada and a disease that affects us all. Accelerating and increasing the impact of research to improve cancer prevention and treatment for Canadians is a strong motivator for collaboration among the Canadian Cancer Research Alliance (CCRA) member organizations. For over a decade, CCRA has provided a forum for funders of research in Canada to identify and establish collaborations to more effectively advance cancer research and cancer control. An increased understanding of shared priorities and goals, and the opportunity to work collaboratively, have set the stage for joint strategic action.

CCRA's 2010 strategic plan provided, for the first time, a vision for shared action by members in a number of areas addressing priorities that could be met most effectively through engagement of multiple funding organizations. The benefits for increased impact by working together were demonstrated by the outcomes of this strategic plan (summarized in the plan's final report; refer to reference 4). The benefits extended beyond new initiatives and funding opportunities to include less tangible

outcomes such as building and strengthening the Canadian cancer research community. For example, the highly successful biennial Canadian Cancer Research Conference, which has its origins in the 2010 strategy, plays an important role in this by connecting new and established researchers across the cancer research continuum.

Target 2020: A Strategy for Collaborative Action, 2015–2020, articulates priorities to maximize the impact of shared targeted investment and action by funders of cancer research in Canada. *Target 2020* is the result of opportunities and needs identified by the CCRA members and the wider research community and builds on the momentum of the previous strategy. The strategy focuses on five thematic areas across the cancer continuum and provides a framework for collaborative activity. The themes and corresponding objectives are described in detail throughout this document. Each strategic item will be implemented by the accountable lead agencies and participant organizations described herein.

Several of the thematic areas addressed in this strategy reach beyond cancer such as, for example prevention and health services research, and for this reason we are engaging regional and national organizations outside of CCRA and the cancer arena where there are common interests. Similarly, some of the clinical innovation strategies will be very directly relevant to, and embedded in, clinical cancer care. Working together on shared priorities and working collectively to advance solutions in the complex and intersecting health research and care landscapes will be more efficient and lead to more impactful outcomes.

We gratefully acknowledge the hard work of the many people involved in developing this plan, particularly the CCRA Board members. We also acknowledge the Canadian Partnership Against Cancer for its leadership role in supporting the work of the CCRA, including the funding and housing of the CCRA Executive Office. And finally, as we move to implementation, we look forward to working with all of our CCRA colleagues and other participating organizations to achieve the outcomes for cancer prevention and control described in this strategy.

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Christine Williams



Robin Harkness

EXECUTIVE SUMMARY

The Canadian Cancer Research Alliance (CCRA) is a unique coalition of cancer research funding organizations and affiliated partners working together to enhance collaboration and strategic coordination of research. With the success of the CCRA's *Pan-Canadian Cancer Research Strategy* (2010), a first for funders of cancer research in Canada, CCRA members agreed to develop and implement a new shared strategy. *Target 2020: A Strategy for Collaborative Action, 2015–2020* will build on the first strategy and is intended to accelerate research and maximize the impact of investments in research for the benefit of Canadians living with, and affected by, cancer.

Target 2020 supplements the activities of individual CCRA member organizations through new shared initiatives aimed at addressing gaps and at strengthening Canada's cancer research enterprise. Creation of this new strategy was informed by CCRA member priorities, consultation with the research community, funding initiatives and

emerging trends in science, policy and cancer care. Transformative initiatives requiring coordinated action by multiple funders form the foundation for this new strategy. Six thematic goals emerged, and for each there are supporting objectives, strategies, and tactics. Objectives and key outcomes for each of the thematic goals are:

◆ Discovery

To enhance and optimize the value of discovery research through collaborative opportunities.

Key Outcome:

- New joint funding initiatives involving discovery-based research are launched; eligibility of discovery research within existing funding opportunities sponsored by CCRA member organizations is promoted.

◆ Clinical innovation

To improve and expedite the translational pipeline and advance personalized medicine research and its application through collaboration.

Key Outcomes:

- Funding base of the Canadian Cancer Clinical Trials Network (3CTN) is expanded and a sustainability plan with stakeholders and funding partners is implemented.
- A business plan for a pan-Canadian network of genomic and molecular diagnostic labs is implemented.
- Critical activities of the Canadian Tissue Repository Network (CTRNet) remain available to the cancer research community.

◆ Prevention

To implement recommendations of the *Prevention Research Framework*, and to promote collaborative opportunities to use population platforms to promote prevention research.

Key Outcomes:

- Funding opportunities to promote prevention research and its translation, to promote collaboration, and to build capacity are launched.
- Funding mechanisms are implemented to support research undertakings using data and samples from the Canadian Partnership for Tomorrow Project (CPTP); awareness, access and use of the CPTP platform will be promoted.

◆ Patient experience

To identify the research gaps and collaborative opportunities in cancer survivorship and end-of-life research.

Key Outcome:

- Strategic survivorship, and palliative and end-of-life research frameworks are developed and launched.

● Health services

To support health system efficiency and effectiveness by improving health services research capacity, knowledge integration, and innovation.

Key Outcome:

- A health services research plan expanding on existing infrastructure is implemented.

● Core activities

To demonstrate accountability by reporting on research investments made by member organizations, and to demonstrate the link between research investment, system readiness and patient outcomes.

Key Outcomes:

- Investments in and the impact of cancer research are reported.
- CCRA continues to host the biennial Canadian Cancer Research Conference (CCRC).

As cancer is but one part of the larger health research landscape, the implementation of this strategy involves engagement with organizations beyond the CCRA membership. Working in a coordinated approach with other organizations on shared priorities will increase our effectiveness in achieving the goals set out in this strategy.

It is important for CCRA members to remain responsive to emerging issues. For this reason the collective activities of CCRA are not restricted to the initiatives outlined in this strategy. CCRA members will remain amenable to opportunities for collaboration to address new and emerging issues.

Target 2020 provides a vision for action by funders of cancer research in Canada. It is a framework to address priorities requiring coordinated investment in order to accelerate the impact of cancer research on the health of Canadians.

1. INTRODUCTION

The Canadian Cancer Research Alliance (CCRA) is a unique coalition of cancer research funding organizations and affiliated partners working together to enhance collaboration and strategic coordination of research. With two out of five Canadians expected to develop cancer during their lifetime, and one out of four Canadians expected to die from cancer,¹ cancer research funding organizations have an obligation to coordinate their activities and collaborate to support transformative research programs not possible by a single organization. Coordinative action will accelerate the impact of research to benefit those living with and affected by cancer.

Since its inception in 2003 (Figure 1), CCRA has grown from 21 members to 35 members representing Canadian federal government research funding programs/agencies, provincial government funders, national and provincial charities, and provincial cancer agencies (refer to inside back cover for list of members). CCRA was created with the express purpose of fostering the development of partnerships among cancer research funders and promoting the development of national research priorities. In this capacity, CCRA serves as the coordinating voice for cancer research in Canada. By working together, CCRA members strive to maximize the collective impact of their investments in Canadian cancer research.

FIGURE 1
A BRIEF HISTORY OF CCRA

1999	<ul style="list-style-type: none"> The Canadian Strategy for Cancer Control (CSCC) is formed, heralding a new beginning for cancer control in Canada.
2002	<ul style="list-style-type: none"> The Action Plan for the CSCC, an integrated, comprehensive and pan-Canadian approach to cancer control, which included recommendations for cancer research from the Research Advisory Group, is released.
2003	<ul style="list-style-type: none"> The Research Advisory Group becomes the Canadian Cancer Research Alliance (CCRA) to reflect an expanded membership and a stronger pan-Canadian voice.
2005	<ul style="list-style-type: none"> The first annual meeting of the CCRA was held with 21 member organizations, with CIHR-ICR providing the CCRA Executive Office function. Members agreed to financially support their first joint project, an environmental scan of cancer research investments in Canada.
2006	<ul style="list-style-type: none"> The Canadian Partnership Against Cancer (CPAC) is established as an independent, not-for-profit corporation funded by the federal government through Health Canada to implement the CSCC.
2007	<ul style="list-style-type: none"> CCRA recommends funding of two large partnered projects to CPAC: (1) A population health laboratory, The Canadian Partnership for Tomorrow Project (CPTP), a 300,000-person prospective cohort built on five nodes across Canada, and (2) a translational research initiative, designed to establish a roadmap for biomarker development built on four nodes across Canada. CCRA joins the International Cancer Research Partnership (ICRP), an alliance of cancer organizations working together to enhance global collaboration and strategic coordination of research. CCRA releases its first cancer research investment report. The report documented investments made in 2005 by 19 research funding organizations. The report garners front page coverage in <i>The Globe and Mail</i> and Dr. Philip Branton is invited to provide a commentary to <i>The Lancet Oncology</i> about the findings.
2008	<ul style="list-style-type: none"> CPAC assumed the role of supporting and housing the CCRA Executive Office. The CCRA functioned as the Research Advisory Group of CPAC.
2010	<ul style="list-style-type: none"> The first-ever Pan-Canadian cancer research strategy is released. The strategy served as a plan for collaborative action by Canada's cancer research funders. Over 90% of the actions identified in the strategy are successfully completed.
2011	<ul style="list-style-type: none"> The first Canadian Cancer Research Conference was held in Toronto. Based on the success of the first conference, it has become a biennial event.
2012	<ul style="list-style-type: none"> A strategic framework for collaborative action in the area of cancer prevention research is released to help identify needs and opportunities for cancer risk identification and prevention research in Canada.
2014	<ul style="list-style-type: none"> The Canadian Cancer Clinical Trials Network is launched. This initiative, which stems from a recommendation by CCRA, aims to increase enrollment in cancer clinical trials in academic centres across Canada.
2015	<ul style="list-style-type: none"> <i>Target 2020</i> is launched, representing the second strategy for collaborative action by CCRA members.

THE CANCER RESEARCH FUNDING LANDSCAPE

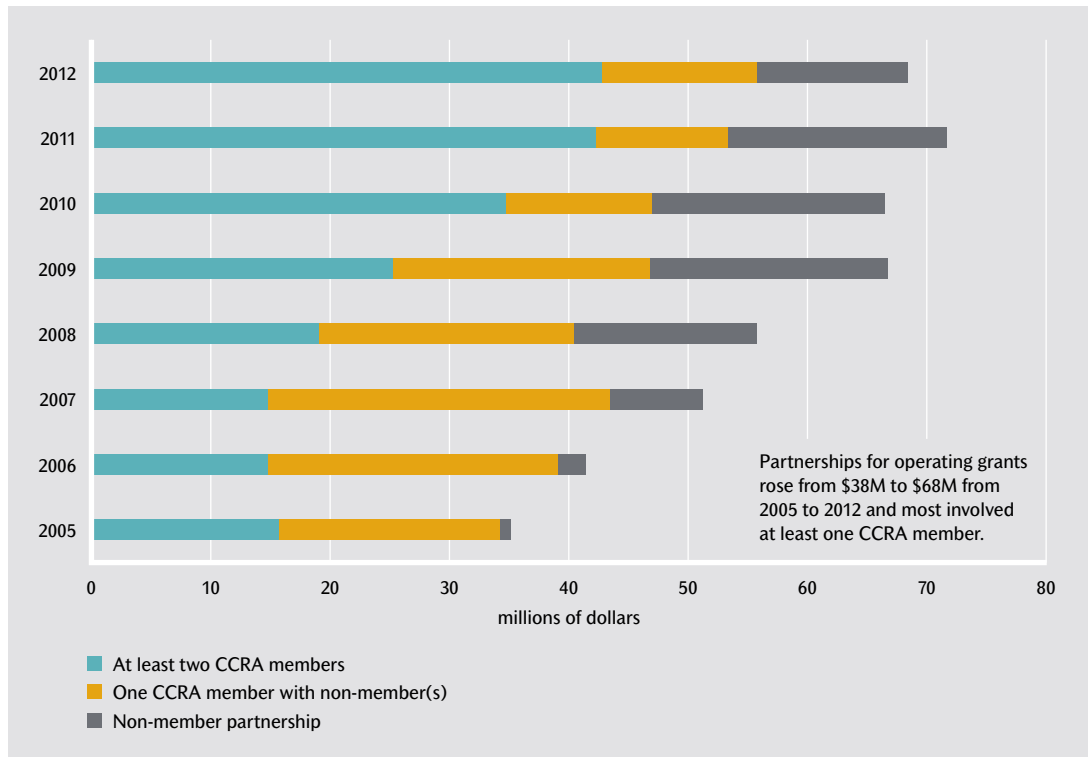
Since 2008, when the first Cancer Research Funding Survey was published, CCRA has been reporting on the nature and amount of investment in cancer research in Canada, providing valuable insights into where and how research funds are dispersed. The 2015 report² describes investments made in 2012 by over 40 funding organizations that collectively provided over \$540M for research that year.

The investment reports have been instrumental in identifying funding gaps and highlighting needs and opportunities for new shared investment and action. They also have been useful in showing shifts in the funding landscape in response to targeted investment through new research initiatives by CCRA member agencies. For example, following the formation of the CCRA, there has been an increase in both

the absolute and relative amounts of cancer research funding supported through inter-agency partnerships (Figure 2). Furthermore, the most recent survey data show that some areas of research funding identified as gaps in the first investment reports have benefitted from increased investment, notably ovarian, pancreatic and prostate cancers.

There has also been a shift to greater translational research (Figure 3), primarily in the area of laboratory based research in the treatment domain. This shift has been accompanied by a reduction in biology (basic discovery) research, reflecting the many initiatives of the past decade to enhance the translation of discovery findings into application.

FIGURE 2
CANCER RESEARCH INVESTMENT IN OPERATING GRANTS
BY TYPE OF FUNDING PARTNERSHIP, 2015–2020

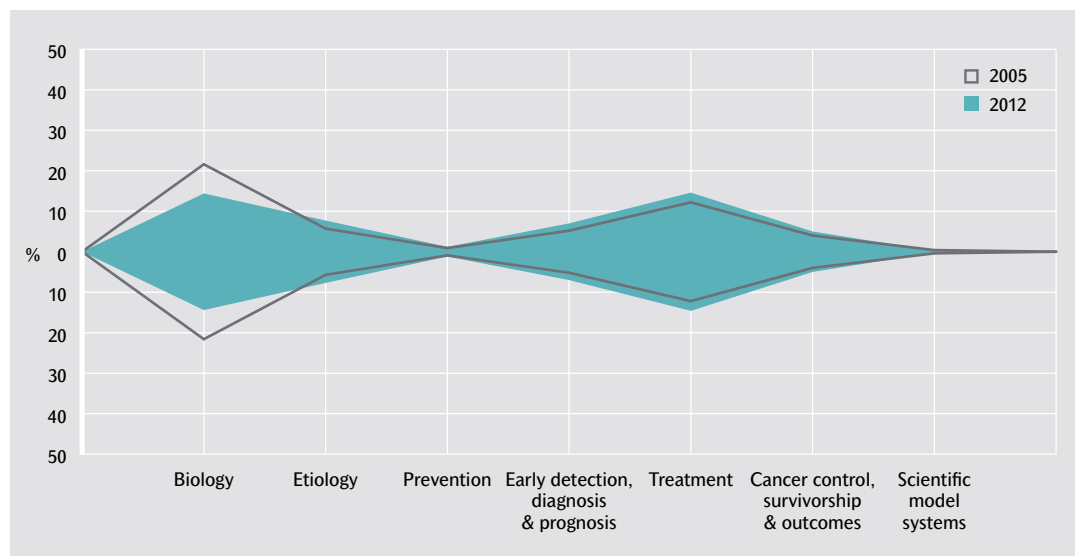


COLLABORATIVE ACTION THROUGH THE PAN-CANADIAN CANCER RESEARCH STRATEGY

In 2010, the members of CCRA embarked on a bold endeavour with the release of the *Pan-Canadian Cancer Research Strategy*,³ the first collaborative framework to guide cancer research investment in Canada. This milestone achievement provided a collective vision for Canadian cancer research, identified numerous priority “action items” for joint investment, and launched a new era of collaboration among research funders. In the years following

the launch of the first strategy, over 90% of the action items identified in the 2010 strategy were successfully completed, and in some cases the outcomes of these actions led to new initiatives being launched.⁴ With this success, CCRA members committed to the creation of a new strategy that will build on collaborative investments and define new actions for maximum impact on cancer control.

FIGURE 3
DISTRIBUTION OF CANCER RESEARCH INVESTMENT BY CSO* CATEGORY, 2005 AND 2012



* The Common Scientific Outline (CSO) is an internationally used classification system, which organizes cancer research into seven broad areas of scientific interest.

TARGET 2020: BUILDING ON SUCCESS

The new strategy, *Target 2020*, draws on opportunities emerging from CCRA's first research strategy, identification of shared research funding priorities and the realization that by working together, several priority areas for investment will be addressed most effectively. As a first step in developing the strategy, CCRA members were polled on (i) their organization's strategic priorities; (ii) current and planned funding initiatives; (iii) emerging trends in science that have the potential to lead to transformative shifts in the funding landscape, scientific progress and/or the adoption of innovation in health care; and (iv) large initiatives of interest requiring multiple funding partners. Recurring themes were identified in the member responses and these were further refined through numerous discussions of the Strategy Steering Committee, CCRA Board, CCRA members, open consultations convened at the 2013 Canadian Cancer Research Conference (CCRC), and consultation with opinion leaders external to CCRA providing perspectives from hospital foundations, health services researchers and industry.

Guiding principles taken from the CCRA Statement of Purpose⁵ were foundational in defining the *Target 2020* goals, objectives, strategies and tactics. These principles are the following:

- **Partnerships:** To foster the development of partnerships amongst cancer research funding agencies in Canada.
- **National Research Priorities:** To promote the development of national cancer research priorities and strategies.
- **Accountability:** To report back to donors and the public on the nature and impact of the investment in cancer research funding in Canada.
- **Cancer Control:** To work together to achieve the overarching goals of effective and timely cancer control in Canada.

The new strategy prioritizes goals in five thematic domains for collaborative action: discovery, clinical innovation, prevention, patient experience and health services. A sixth goal centres on sustaining and further developing core enabling activities of the CCRA that support its members, demonstrate accountability and contribute to building a connected and dynamic cancer research community. The thematic goals and objectives are presented in Figure 4.




Target 2020 is a means to address priorities requiring action by more than one funding agency that can serve as a compass for planning by funders. This document articulates a high level strategy for 2015–2020 that builds on past successes, takes advantage of emerging opportunities and looks forward with new initiatives. Each objective is supported by one or more strategies that are described in the following sections. Underlying each strategy are a number of tactics, also described, that are to be undertaken by multiple organizations. Strategies and tactics touch on all aspects of the cancer research continuum from prevention to palliation and every CCRA member organization sees some aspect of itself in this shared strategy.

Transdisciplinary training and career development are cross-cutting themes across all areas of the research continuum. Capacity building activities have been specifically identified in the prevention and health services research strategies (see following sections). However, supportive activities are not limited to these thematic areas as there will be continued initiatives in training and career development in all areas of the strategy.




Recognizing that cancer research is just one part of the larger health research landscape, this strategy reaches beyond the CCRA members to embrace non-member organizations with shared strategic objectives. Altogether, the process engaged the efforts of more than 40 organizations, including the Canadian Centre for Applied Research in Cancer Control (ARCC), the Canadian Health Services and Policy Research Alliance (CHSPRA), the CIHR Institute of Health Services and Policy Research (CIHR-IHSPR), the CIHR Institute of Population and Public Health (CIHR-IPPH), and the National Alliance of Provincial Health Research Organizations (NAPHRO).

Target 2020 is designed to help CCRA members advance and support a vibrant and coordinated cancer research enterprise in Canada. The outcomes of the strategy will benefit the Canadian cancer research community and ultimately those affected by cancer.

FIGURE 4
TARGET 2020 GOALS AND OBJECTIVES

 Discovery	 Clinical Innovation	 Prevention
GOALS		
<p>Foster a vibrant discovery research community that is internationally competitive and contributes to cancer control worldwide.</p>	<p>Enable an integrated, internationally-linked translational and personalized medicine research community to deliver transformative research that improves patient outcomes and reduces cancer-related mortality.</p>	<p>Develop and sustain a coordinated primary prevention research community that contributes to a reduction in cancer incidence in Canada.</p>
OBJECTIVES		
<p>To enhance and optimize the value of discovery research through collaborative opportunities.</p>	<p>To improve and expedite the translational pipeline and advance personalized medicine research and its application through collaboration.</p>	<p>(1) To implement recommendations of the CCRA Prevention Research Framework, and (2) to promote collaborative opportunities to use population platforms to promote prevention research.</p>



 Patient Experience	 Health Services	 Core Activities
GOALS		
Develop opportunities for a strengthened and integrated cancer survivorship research community that facilitates improvements in the daily experience and outcomes of cancer patients and their families throughout the cancer journey.	Support and strengthen a health services research community that is well-connected to provincial cancer decision-makers and contributes to improvements in the access, sustainability, and cost-effectiveness of cancer care across Canada.	Strive to ensure that the cancer research system is well-recognized by patients, donors and taxpayers, and the health care system for its importance in contributing to a reduction in the cancer burden in Canada.
OBJECTIVES		
To identify the research gaps and collaborative opportunities in cancer survivorship and end-of-life research.	To support health system efficiency and effectiveness by improving health services research capacity, knowledge integration and innovation.	To demonstrate accountability by reporting on research investments made by member organizations, and to demonstrate the link between research investment, system readiness and patient outcomes.



2. STRATEGIES AND TARGETS

1. DISCOVERY STRATEGY & TACTICS

Strategy 1.1: Maintain strong investment in high quality, discovery-based research that will improve cancer outcomes. In particular, institute directed/strategic research funding opportunities in the following areas: i) hard-to-treat cancers; ii) metastatic disease; iii) mechanisms of resistance; and iv) cancer stem cells.

Benefit of this Strategy

Maximizing the impact of discovery research by promoting partnerships and leveraging infrastructure and technology platforms will support innovative discovery-based research which is critical to the scientific pipeline.

Background

Advances through research come from both discovery (new knowledge generation) and subsequent application. Discovery research is “sometimes naïvely perceived as an unnecessary luxury that can simply be replaced by applied research.” Discovery and applied research are, however, interdependent and part of a continuum—their integration is crucial to “problem-solving, innovation, and product development.”⁶

From 2005 to 2012, while the overall investment in cancer research increased, not all areas of investment kept pace with this increase. There was a decrease in the proportion of total Canadian cancer research investment in cancer biology and an increase in funding for treatment/translational research. While much of the latter research remains laboratory based, discovery scientists in Canada have voiced concerns that future innovations in cancer prevention and treatment are imperiled by inadequate funding of basic cancer biology/discovery research. There are concerns that decreases in funding will adversely affect the discovery research capacity in Canada and reduce the country’s competitiveness and influence on future directions of cancer research within the global arena. CCRA members agreed that discovery research needed to be identified as a specific goal within this new strategy in order to highlight its importance and enhance the funding environment.

Expected Outcomes of this Strategy

- New collaborative funding initiatives involving discovery-based research will be developed and launched.
- Mechanisms will be implemented to facilitate and promote the use of existing and future infrastructure and technology platforms.
- Discovery research eligibility within funding opportunities sponsored by CCRA member organizations will be promoted.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATE
1.1.1 Ensure that appropriate language is included within relevant RFAs from CCRA organizations, highlighting the value and applicability of basic discovery research to the funding opportunities.	TFRI	ACF, AIHS, BTFC, C ¹⁷ , CARO, CBCF, CCO, CRS, FRQS, GC, KFOC, OCC, OICR, PCC, QBCF	2015–2020
1.1.2 Develop a web portal through the CCRA website that provides access and awareness of available technology platforms across the country, with a particular focus on supporting new investigators. a. Conduct an initial asset map b. Establish portal and process for information updates. c. Enable access, in part, through the CIHR/CCS-supported Young investigator meeting at the biennial Canadian Cancer Research Conference	CIHR-ICR, CCS, CCRA Executive Office	C ¹⁷ , GC, NRC, OICR, TFRI	2017
1.1.3 Establish mechanisms to link smaller research teams with larger ones to leverage available infrastructure, and increase the regional and/or disease-type research representation on pan-Canadian teams.	CIHR-ICR, CCS	AIHS, BCSC, C ¹⁷ , CARO, CBCF, CCMB, GC, NPCC, NRC, OCC, OICR, PCC, QBCF, SCA, TFRI	2015–2020
1.1.4 Continue and/or initiate new partnerships among CCRA members to support RFAs and other initiatives that involve discovery-based research aimed at improving cancer outcomes, for example in hard-to-treat cancers.	CIHR-ICR, CCS, TFRI	AIHS, BCSC, C ¹⁷ , CBCF, CCMB, CRS, GC, NRC, OCC, OICR, NPCC, PCC, QBCF, SCA	2015–2020



2. CLINICAL INNOVATION STRATEGIES & TACTICS

Strategy 2.1: Improve cancer clinical trials outcomes and recruitment rates through support and optimization of the Canadian Cancer Clinical Trials Network (3CTN).

Benefit of this Strategy

The 3CTN pan-Canadian network of trial centres will strengthen academic-sponsored cancer clinical trials and improve patient access to clinical trials leading to changes in practice and improved patient outcomes.

Background

Clinical trials are drivers of medical innovation and as such are valuable components of the health care system. Canada has an international reputation for conducting clinical trials that have contributed to the development of curative therapies and the introduction of new treatment modalities for many cancers. In recent years the clinical trials enterprise in Canada has come under threat for a variety of reasons, as documented in reports released by the Senate of Canada⁷ and CCRA.⁸ In identifying the issues facing cancer clinical trials in Canada, the CCRA report articulated four recommendations to address the challenges.

One recommendation was the creation of a pan-Canadian cooperative program, or network, to facilitate the initiation and conduct of cancer clinical trials in Canada that builds upon the strengths of existing clinical trials groups. The CCRA recommendation resulted in the creation and launch in 2014 of the Canadian Cancer Clinical Trials Network (3CTN), a pan-Canadian initiative that will strengthen academic-sponsored cancer clinical trials capacity, improve patient access, increase trial activity and efficiency, and limit trial costs. To realize the goals of the network, which include a 50% increase to clinical trial recruitment within four years, sustained funding of the initiative is required. This strategy is targeted at securing and consolidating required funds from a variety of sources to support and sustain 3CTN beyond 2018.

Expected Outcomes of this Strategy

- Funding base of 3CTN will be expanded to include competitive funding sources.
- 3CTN sustainability plan will be developed in collaboration with stakeholders and funding partners.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATE
2.1.1 Advance 3CTN as the centerpiece of CCRA's clinical innovation strategy, including raising awareness among CCRA members and other stakeholders.	OICR	ACF, C ¹⁷ , CBCF, CCMB, CCS, CIHR-ICR, CPAC, FRQS, RMB, NSHRF	2015–2020
2.1.2 Explore and apply for alternate sources of funding to augment funding secured from federal, provincial and charitable sector funders.	OICR	CCRA members and other funders	2015–2020
2.1.3 Engage government both provincial and national, independent of SPOR,* as well as funders, including philanthropy to sustain 3CTN beyond the initial four-year plan and to ensure clinical research becomes an integral part of innovative cancer care in Canada. * SPOR is CIHR's Strategy for Patient-Oriented Research, a coalition of federal, provincial and territorial partners focused on integrating research into care. For more information, see http://www.cihr-irsc.gc.ca/e/41204.html .	OICR	ACF, C ¹⁷ , CBCF, CCMB, CCS, CIHR-ICR, CPAC, FRQS, RMB, NSHRF	2015–2018

Strategy 2.2: Establish a pan-Canadian network of molecular diagnosis and pathology hubs supporting translational and personalized medicine and build capacity to sustain the network.

Benefit of this Strategy

A national network of certified genomic and molecular diagnostic laboratories supporting cancer clinical trials will facilitate and accelerate the translation of quality, cost-effective tests improving patient care.

Background

In May 2014, the NCIC Clinical Trials Group hosted a workshop of clinical trial experts to understand what the genomics and other molecular diagnostics needs are/ will be to support large scale personalized medicine clinical trials in the next decade. The current capabilities and capacity of established and emerging genomics and molecular diagnostics laboratories in Canada were also explored. This workshop identified strong interest in creating more formal linkages between laboratories that offer molecular diagnostic services in order to develop common quality standards, support large scale clinical research (and eventually clinical service delivery) and collaborate on new technology development, validation and standards.

In parallel, a number of CCRA member organizations identified this as a topic area of importance for personalized medicine. This led to the inclusion of a strategy to create a robust national platform of certified genomic and molecular diagnostics research labs linked to academic cancer clinical trials groups and 3CTN to accelerate personalized medicine in Canada. It was recognized that such a pan-Canadian infrastructure platform would not only enable research so that Canada can continue to be an international leader in practice changing clinical trials, but would also increase opportunities for pharmaceutical trials in Canada and accelerate translation of high quality, cost effective tests into clinical practice to serve patient care.

Expected Outcomes of this Strategy

- A plan articulating the vision, goals, operations and funding for a national network will be developed and presented to the CCRA Board and stakeholders.
- A national genetic and molecular diagnostic laboratory network as described in the final plan will be launched.

TACTIC	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATE
2.2.1 Create a working group of CCRA members and experts in the field to undertake an environmental scan for other similar initiatives in Canada and internationally, and to identify the vision for such a network, its value proposition and how it could be funded.	CIHR-ICR, CPAC, TFRI	CAPCA, CCS, FRQS, GC, NRC, OICR Public/patient representative: Patrick Sullivan	2017

Strategy 2.3: Improve the quality of biorepositories in Canada by sustaining the activities of the Canadian Tissue Repository Network (CTRNet).

Benefit of this Strategy

The activities of CTRNet will ensure that critical biobanking research resources, associated harmonized quality standards and training remain available to the Canadian cancer research community.

Background

“...the limited availability of carefully collected and controlled, high-quality human biospecimens annotated with essential clinical data and properly consented for broad investigational use...has been repeatedly identified by the scientific community as a leading obstacle to progress in post-genomics cancer research.”⁹

“CTRNet is recognized as a world lead in biobanking and is ensuring that Canadian-funded biobanks invest their limited resources in a coordinated fashion in order to capitalize on the best available science in the fight against cancer.”¹⁰

With funding from the CIHR-ICR, CTRNet was established in 2004 to facilitate research by improving the quality and consistency of human biospecimens through the creation of a virtual web-based tumour bank network. This is being accomplished by improving researchers’ access to tumour materials contained in existing biobanks, detailing and harmonizing biobanking standards across Canada, and ensuring quality processes are in place and well utilized by participating biobanks through education and training. CTRNet includes six charter member biorepositories that have contributed expertise and effort to co-develop CTRNet’s programs and tools: BC Cancer Agency Tumour Tissue Repository, Alberta Cancer Research Biorepository, Manitoba Tumour Bank, NCIC Clinical Trials Group, Ontario Tumour Bank, and the Réseau de Recherche sur le Cancer du Fonds de Recherche du Québec – Santé.

The banking of biological materials and related data potentially hold the key to future scientific breakthroughs in terms of drug discovery and clinical and translational medicine. Core support for CTRNet expires on September 30, 2015. A concerted effort is required to ensure long-term sustainability for this crucial national resource.

Expected Outcome of this Strategy

- A review of CTRNet will be completed and funding sources supporting the long-term vision of the Network will be identified.

TACTIC	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATE
2.3.1 Convene an international expert panel to review the CTRNet business plan, and following the review identify funding sources among CCRA members and others to support the Network.	CIHR-ICR, TFRI	ACF, BTFC, CCMB, CCS, CPAC, CRS, FRQS, OICR	2015



3. PREVENTION STRATEGIES & TACTICS

Strategy 3.1: Increase the number of prevention researchers in Canada by providing opportunities for training and capacity building.

Benefit of this Strategy

Developing and implementing prevention research career support opportunities will build and strengthen Canada's prevention research capacity.

Background

Prevention research was identified as a priority for investment and was the focus of the first action item identified in the inaugural five-year *Pan-Canadian Cancer Research Strategy*.³ Work was undertaken under the leadership of CPAC and CCS to develop a more specific cancer prevention research plan based on input from a broad range of stakeholders. In the resulting report, *Cancer Prevention Research in Canada: A Strategic Framework for Collaborative Action*¹¹ released in April 2012, ten priorities for prevention and risk research in Canada were identified.

At present, cancer risk and prevention research forms a small proportion (10%)¹² of the overall investment in cancer research in Canada. While a lack of operating grant programs focused on prevention may be a partial explanation, there are also limited numbers of Canadian researchers focused on prevention. The cancer prevention research framework recommended that CCRA members support capacity building programs to not only bring new entrants to the field but “encourage existing researchers in Canada to apply their research acumen to cancer prevention.”¹¹

In 2014, CCS in partnership with CBCF established a joint funding opportunity to support capacity development in cancer prevention research. Further work is needed to enhance the prevention research capacity across the entire spectrum of cancers and thereby strengthen the prevention research field in Canada.

Expected Outcomes of this Strategy

- Funding opportunities to collaboratively build capacity will be developed and launched.
- Funding opportunities, available resources and activities to build engagement and collaboration among prevention researchers across Canada will be promoted.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATES
3.1.1 Invite CCRA members to participate in the newly created CCS prevention network in order to build engagement and collaboration.	CCS	CBCF, CCMB, QBCF, RMB	2015
3.1.2 Enhance the general awareness of funding opportunities in prevention research, and highlighting prevention research as an area of interest in existing RFAs being released by member organizations. Develop standard language for use in RFAs to particularly leverage use of CPTP and the CCS prevention network.	CCS	CBCF, CCO, CIHR-ICR, CIHR-IPPH, CPAC, CRS	2015–2016
3.1.3 Develop and share collaborative funding opportunities among CCRA members to build capacity.	CIHR-ICR, CCS, CIHR-IPPH	AIHS, CBCF, CCO, CRS, MSFHR, QBCF	2015–2020
3.1.4 Provide leadership to the creation of a prevention symposium and satellite meetings at CCRC to build capacity and awareness among the Canadian cancer research community. Promote the CCRC new investigator’s satellite meeting to prevention research scientists.	CCS, CIHR-ICR	CBCF, CCRA Executive Office	2015

Strategy 3.2: Increase collaborative funding opportunities to support prevention research as described in the 2012 *Prevention Research Framework*.

Benefit of this Strategy

Increased collaboration to enhance grant funding will ensure prevention and risk reduction research priorities are addressed and better integrated with practice and policy priorities.

Background

The ongoing need to support cancer prevention research and to continue the work on the recommendations articulated in the framework are the motivations for this strategy for the 2015 to 2020 period. In 2010, the latest year for which cancer risk and prevention research investment data are available, 10% of Canada's cancer research investment was in the area of cancer risk and prevention.¹² While the investment grew from the 2005 to 2010 period, much of this increased investment was due to major infrastructure funding designed to support large platforms for epidemiological research. Intervention research (involving human subjects), at \$5.3M in 2010, represented only 1% of the overall cancer research investment.

As noted in the Framework document, investment in intervention research must be linked to its appropriate translation into health care and health policy to have the greatest value. Furthermore, the benefits of prevention intervention research for cancer has large areas of overlap with prevention of other chronic diseases, and interactions with other chronic disease agencies should be pursued to maximize the potential pool of funding dollars to invest.

Recent efforts such as the CCS and CIHR-ICR partnered prevention research grants program are geared towards supporting and accelerating cancer prevention intervention research and the application of new knowledge. Further investment is needed by the CCRA membership to continue to make progress in this area.

Expected Outcomes of this Strategy

- Collaborative approaches will be implemented to fund more prevention intervention research, including its translation.
- Joint opportunities for collaborative action with other chronic disease research funding agencies will be developed to reduce exposure to risk factors.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATES
3.2.1 Facilitate collaborative approaches to prevention intervention and health economics by: <ul style="list-style-type: none"> a. Highlighting intervention research as a priority within prevention research grant competitions; b. Exploring joint efforts around common risk factors in prevention research with other chronic disease research funding agencies; c. Integrating the Canadian Centre for Applied Research in Cancer Control (ARCC) into the CCS prevention network and encouraging more research into the health economic outcomes of cancer prevention. 	CCS	CBCF, CCO, CIHR-ICR (facilitate with other institutes as appropriate, e.g., IGH and IPPH), CPAC, MSFHR, SCA	2015–2020
3.2.2 Foster knowledge synthesis and translation by: <ul style="list-style-type: none"> a. Ensuring targeted funding calls designed to address critical research questions are informed by knowledge synthesis of existing research studies to identify key unanswered research questions; b. Ensuring members' efforts to translate research knowledge into practice and policy are based on current evidence/systematic reviews. 	CCS	AIHS, CCO, CPAC, MSFHR, TFRI	2015–2020
3.2.3 Provide new/continued research grant opportunities and other funding platforms that actively integrate practice and policy partnerships.	CCS	AIHS, CIHR-ICR, CCO, CPAC, PHAC, RMB	2015–2020

Strategy 3.3: Ensure access to and use of the Canadian Partnership for Tomorrow Project (CPTP) population laboratory.

Benefits of this Strategy

Promoting the use of data and biosamples curated within the CPTP cohort platform will further research into the causes of cancer and other chronic diseases generating knowledge to influence policy and practice.

Background

Acting on the recommendation from CCRA in 2007, CPAC approved funding to create CPTP¹³ as a multi-partnered prospective population cohort study. CPTP is a long-term research platform recruiting everyday Canadians who agree to share their health and lifestyle information over their adult lives. By studying and comparing the data, researchers can explore and understand regional, national and international patterns and trends and find the answers to some of the most challenging questions about the etiology of cancer and other chronic diseases.

This “population laboratory” is composed of five regional cohorts – BC’s Generations Project, Alberta’s Tomorrow Project, the Ontario Health Study, Quebec’s CARTaGENE, and the Atlantic PATH – and it is currently supported by a number of CCRA members and other partners.

Although each region has evolved differently and is at a different stage in the development of their respective initiatives, collectively, as of October 2014, they have:

- Recruited and consented over 300,000 participants aged 35 to 69 (approximately 2% of the Canadian population in the age bracket);
- Gathered extensive core questionnaire data on these participants’ health and lifestyle;
- Collected a significant number of biological specimens (~125,000 venous blood samples as well as urine, saliva, blood spots and toe nail clippings).

Data and samples are collected and stored in a distributed model across all five regions. All regions intend to maintain and further enhance the data and bio-sample repositories over time and to link this core information to timely health system data to gather information about participants’ health outcomes. Plans are now being developed to engage the research community in making use of the platform through a research application process, beginning in mid-2015.

To support sustaining the platform and the research that will take advantage of this unique national resource, significant investments from relevant funding agencies will be required from 2015 onwards. This will include funding for CPTP leadership and governance, core infrastructure support, and grants for research to ensure maximal value is derived. CCRA organizations will need to work collaboratively to leverage the significant investments and efforts made to date in building the population laboratory

to facilitate its use for research and to orient its activities such that its impact on cancer and chronic diseases care is optimized.

Expected Outcomes of this Strategy

- Funding mechanisms will be implemented to support collaborative research undertakings using CPTP data and samples.
- Awareness, access and use of the CPTP platform by researchers will be increased through promotion by stakeholders.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATES
<p>3.3.1 Facilitate collaborative research opportunities to sustain, enhance and use the assets of CPTP.</p> <p>a. Develop, launch and support joint Calls for Proposals aimed at addressing research questions of interest to more than one organization or of a national/ international scope.</p> <p>b. Ascertain the opportunities to integrate CPTP with other related platforms or within relevant national translational health research networks.</p> <p>c. Position the CPTP platform within the thematic rubric of the CIHR Environments and Health Signature Initiative.</p>	CPAC	ACF, AIHS, CCMB, CCO, CCS, CIHR-ICR, CIHR-IPPH, GC, GQ, NSHRF, OICR, PHAC, RMB	2015–2020
<p>3.3.2 Engagement of the research community in accessing the CPTP platform.</p> <p>a. Hold CPTP plenary/symposium and information sessions at the CCRC. Focus on practical issues related to utilization/access and status of the database's development in terms of cancer cases, etc.</p> <p>b. Hold CPTP information sessions and symposium/poster session on research utilization at the other appropriate venues beyond the CCRC (conferences, workshops, research meetings, etc.).</p> <p>c. Promote CPTP national and international access via CCRA members' websites, CCRA website, and other available electronic (e.g., webinars) and promotional mechanisms.</p>	CPAC	ACF, AIHS, CCO, CCS, CIHR-ICR, CIHR-IPPH, GQ, NSHRF, OICR, PHAC	2015–2020



4. PATIENT EXPERIENCE STRATEGIES & TACTICS

Strategy 4.1: Assess survivorship research in Canada and prepare a survivorship research framework that proposes actions to address gaps and builds on existing opportunities. Implement recommendations made in the report.

Benefits of this Strategy

A national cancer survivorship research framework will identify research needs and opportunities important to supporting the population of cancer survivors.

Background

“...the concept that cancer survivorship is a unique phase of the cancer control continuum has been widely accepted. Among the benefits and responsibilities that follow from this is the need to develop a research agenda that is specific to cancer survivorship and, in order for the research to have relevance and impact, to implement policies that stem from the research findings. However, to date, a comprehensive framework for survivorship research that is evidence based and encompasses translation of research into policy and practice has yet to be articulated.”¹⁴

Survivorship research is identified as a critical component of the cancer research continuum and a number of CCRA members have indicated that they need a better understanding of the key gaps in this research area as well as evidence-based recommendations on how they can collaborate to significantly advance this research and improve quality of life and cancer outcomes for survivors. Cancer survivors are a growing and diverse population and the health care system is not readily organized to deal with their needs.

Since the publication of the first pan-Canadian cancer research strategy,³ the survivorship research field has expanded and gained momentum. From 2005 to 2010, the investment in cancer survivorship research rose from \$10.2M to \$15.8M, and the number of principal investigators in the area also increased.¹⁵ The Canadian Cancer Survivorship Research Consortium, comprised of researchers and clinicians, was formally launched in April 2014 (<http://www.ccsrc.ca/>) with the objective

of developing “a strong body of cancer survivorship knowledge in Canada by creating an effective Canadian research community, building research teams and projects and effectively transferring of knowledge so that it is developed into survivorship programs.”¹⁶ The time is ripe for the cancer research funding

community to take an organized approach to determining how best to collaborate to advance the cancer survivorship research field.

Expected Outcome of this Strategy

- Strategic survivorship research framework will be developed and launched.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATES
4.1.1 Prepare a research strategic framework building on the report of Grunfeld et al ¹⁴ incorporating the following: <ul style="list-style-type: none"> a. Updated analysis of survivorship research investment; b. An analysis of the current research capacity and expertise across the country; c. Synthesis of relevant literature (publications and grey literature), which addresses definitional issues, and age, gender, and cancer site-specific considerations, and identifies research on models of care with a specific focus on health care transitions, barriers/facilitators to research implementation/knowledge translation and other rate limiting factors (e.g., researcher capacity, receptor/system capacity, etc.), and recommendations for collaborative action; d. Mechanism to involve the broader community, including survivors, research funders, researchers, the care community, and decision-makers in the development of the framework; e. Mechanism to involve the broader community (as above) in review of the draft framework and resulting recommendations. 	ACF, CPAC	BTFC, C ¹⁷ , CAPCA, CBCF, CCMB, CCO, LLSC, NSHRF, OCC, QBCF, PCC, SCA Public/Patient Representative: Diana Ermel	2015–2017
4.1.2 Develop a plan for addressing the recommendations identified in the report.	ACF, CPAC	BTFC, C ¹⁷ , CBCF, CCMB, CCO, LLSC, NSHRF, OCC, QBCF, NPCC, PCC Public/Patient Representative: Diana Ermel	2017–2018

Strategy 4.2: Assess palliative, including end-of-life, research in Canada and prepare a palliative and end-of-life research framework that proposes actions to address gaps and build on existing opportunities. Implement recommendations made in the report.

Benefits of this Strategy

A national research framework for palliative and end-of-life research will provide a road map to support evidence-based policy and care decisions for the benefit of Canadians.

Background

Palliative and end-of-life care (PEOLC) cancer research in Canada represents about 1% of the overall investment in cancer research.¹⁷ The area was significantly enhanced by strategic funding provided by the Canadian Institutes of Health Research (CIHR) during the 2003 to 2009 period. Designed to build and enhance research capacity and infrastructure, this CIHR initiative leveraged support from nine CIHR institutes and branches, Health Canada, three provincial cancer agencies and four charities to invest \$16.5M over six years to support 10 New Emerging Teams (NETs), 19 Pilot Project grants, one Career Transition Award, one Interdisciplinary Capacity Enhancement

grant and one Strategic Training Initiative in Health Research (STIHR). CIHR's *Palliative and End-of-Life Care Initiative: Impact Assessment Report*,¹⁸ completed in 2009, reported that PEOLC research increased sixty-fold; publications nearly doubled, with almost 40% with international co-authors; and NET PIs collaborated with 50% more investigators than Canada's average. The report also outlined that the NET's and STIHR were successful training grounds for students and young investigators. The authors of the report, however, expressed concern that a significant portion of the capacity created would be lost without "support to develop the young research community to the next level of CIHR competitiveness". The recommended next steps were mechanisms to support: (i) part-time release for health-system based research clinicians; (ii) networks; and (iii) small feasibility studies and practice/system-oriented evaluation research.

The current state of general support for, and productivity of, the PEOLC research community is unknown. Some centres conducting PEOLC research are highly successful, although this is largely in those jurisdictions that also have access to sources of local funding and/or significant investigator support (e.g., Alberta, Manitoba).

There is a need in this relatively nascent field for longer term investments in infrastructure and mechanisms for ongoing capacity building and networking

opportunities. Only by supporting palliative and end-of-life care cancer research can we assure that patients and their families, regardless of where they live in Canada, will benefit from evidence-based care designed to optimize their quality of life and quality of death.

Expected Outcome of this Strategy

- Strategic palliative and end-of-life care research framework will be developed and launched.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATES
4.2.1 Prepare a research strategic framework incorporating the following: <ul style="list-style-type: none"> a. Updated analysis of palliative/EOL research investment; b. Follow-up survey of researchers funded through the CIHR Palliative/EOL initiative to follow stages of careers and identify success factors and barriers to continued research activity; c. Synthesis of relevant literature (publications and grey literature); d. Mechanism to receive input from the broader community on the draft framework. 	CIHR-ICR, CPAC	BTFC, C ¹⁷ , CBCF, CCMB, CCO, CCS, NSFHR, NPCC, PCC Public/Patient Representative: Patrick Sullivan	2015–2017
4.2.2 Plan or convene a forum or meeting for Canada’s broad, interdisciplinary palliative/EOL research community. Investigate the feasibility of this meeting being part of the National Palliative Care Research Center’s annual retreat (U.S.) or integrated within the Canadian Cancer Research Conference (part of the program or a separate event held the day before/after).	CIHR-ICR, CPAC	BTFC, CCMB, CCO, CCS, MSFHR, PCC Public/Patient Representative: Patrick Sullivan	2017–2018



5. HEALTH SERVICES STRATEGIES & TACTICS

Strategy 5.1: Develop funding opportunities and methods to enhance research capacity and identify mechanisms that will improve the interface between researchers and adopters within health care systems.

Benefits of this Strategy

Increasing capacity to undertake health services research at a pan-Canadian scale will provide the underlying evidence required to successfully address the challenges related to the sustainability and evolution of cancer services and healthcare systems.

Background

The sustainability of the health system and cancer control services is a growing concern across Canada as we face challenges with capacity, cost, quality, and health service delivery. In addition, redressing health disparities among vulnerable populations remains of concern and continues to be an important need. Tasked with providing data and analysis that will lead to improvements in the health care systems and ultimately the health of Canadians, health services research received a small proportion, approximately 2%, of the total \$540M invested in cancer research in Canada in 2012.²

Increasing Canada's capacity to undertake health services research goes beyond funding and exploring specific questions, extending to the ability and capacity to do health services research. Embedding applied cancer research in clinical cancer programs will enhance research capacity and contributes to an integrated knowledge translation approach involving decision-makers and knowledge users from start to finish. Building on existing national infrastructure and capabilities will be required to address health services research needs across Canada including questions related to system sustainability.

The Canadian Health Services and Policy Research Alliance (CHSPRA), an alliance of funders, training centres, professional groups and associations, has recently developed a framework¹⁹ that identifies a foundational pan-Canadian strategic direction for its members to guide investment, activity and collaboration in a coordinated manner. Cancer-related health services research questions are part of this larger picture, therefore CCRA will coordinate with CHSPRA to develop a cancer-specific plan.

Expected Outcomes of this Strategy

- A collaborative pan-Canadian health services research plan involving the Canadian Centre for Applied Research in Cancer Control (ARCC) and CCRA members will be developed and implemented.
- A collaborative plan will be developed with CHSPRA on strategic issues of mutual interest highlighted in the CHSPRA strategic plan.¹⁹ A CCRA-specific action plan will be developed to address a cancer-relevant subset of issues.

TACTICS	LEAD AGENCY(IES)	PARTNER AGENCIES	COMPLETION DATES
5.1.1 Expand capacity in health services research by building on existing infrastructure and capacity (e.g., ARCC) with a national vision that includes supporting researchers and developing trainees who are embedded in the cancer agencies, and leveraging this talent through a pan-Canadian network.	CAPCA	ACF, AIHS, BCCA, BCSC, C ¹⁷ , CBCF, CCMB, CCO, CCS, FRQS, MSFHR, NSHRF, OICR, PCC, RMB, SCA, SHRF Public/Patient Representative: Patrick Sullivan	2015–2017
5.1.2 Form a strategic collaboration with CHSPRA to leverage their strategy in recognition that major issues for cancer health services research are part of a larger whole. Select a subset of tactics and apply these to the cancer context.	CAPCA	CCO, CCS, CIHR-IHSPR	2015–2017



6. CORE ACTIVITIES STRATEGIES & TACTICS

Strategy 6.1: Demonstrate the research value proposition using a common framework, language, and reporting conventions (including but not limited to the impacts of investment in discovery research, trainee awards, and health services research).

Benefit of this Strategy

Determining return on investment for cancer research (i.e., research value statement) will provide data for planning and demonstrate accountability to funders, donors and the public.

Background

Assessing the value of the CCRA to its member organizations, its activities and outputs, and its role in facilitating collaborative research funding will be a key focus of new work for the Executive Office within this strategic plan. This information will be important to improving its activities and outputs and helping shape the way that the Alliance conducts its future work. This process evaluation will encompass surveys with members (current and some previous) as well as other key stakeholders (decision makers and researchers). A focus group is also being considered as a method for generating in-depth feedback on the investment reports.

We will also strive to determine the extent to which changes in the research funding landscape, especially collaborative funding among CCRA members, has been enhanced and has contributed to important knowledge outputs. Methodologies such as data mining, bibliometrics, and case studies will be used to assess CCRA's short-term impacts.

Another tactic for this strategy is to facilitate the use of a common framework and metrics by CCRA member organizations. Approaches to assessment planning, identifying researchers (disambiguation), and collecting research outputs in ways that are harmonized with other international organizations, including the International Cancer Research Partnership (ICRP), will be useful for all CCRA organizations as they plan and undertake their own research impact assessments and look to assess their progress against international benchmarks.

Expected Outcome of this Strategy

- A comprehensive report on the impact of the research alliance and its value will be developed and published.

TACTICS	LEAD/PARTNER AGENCIES	COMPLETION DATES
6.1.1 Develop an evaluation framework for CCRA, which will assess both process outcomes and short-term impacts, including bibliometric indicators.	All CCRA Members supported by CCRA Executive Office and liaison with NAPHRO	2017
6.1.2 Facilitate the use of common framework/metrics among CCRA member organizations in order to harmonize efforts at assessing research impacts.	All CCRA Members supported by CCRA Executive Office	2015–2020

Strategy 6.2: Continue to provide annual reports on cancer research investment in Canada through the Canadian Cancer Research Survey.

Benefit of this Strategy

Analysis and reporting on cancer research investment provides information on funding trends, gaps and informed decision making, helps identify needs for collaboration and new initiatives, and tracks the impact of historical CCRA decisions.

Background

Since its inception, the CCRA has worked to gain a greater understanding of the cancer research funding landscape in Canada. An environmental scan initiated in 2005 has evolved into a comprehensive multi-year database of over 15,000 research projects funded by more than 40 organizations with annual reporting, known as the Canadian Cancer Research Survey (CCRS). This resource is unique in the world given the breadth of organizations involved and the variety of funding programs captured. The reports present the research investment by areas of science, cancer sites, and geographic indicators and have helped the CCRA identify gaps in research funding, monitor changes in funding over time, and identify prospective opportunities for collaboration.

The information has also allowed individual organizations to assess their comparative role within the larger cancer research landscape, make more informed decisions about strategic priorities, and bolster evidence to advocate for augmented provincial commitments to cancer research.

In addition to routine reporting, coding conventions have been developed to monitor research investment in the following areas: cancer risk and prevention, childhood and adolescent cancers, early translation, survivorship, and palliative and end-of-life care. These analyses have provided useful benchmarking data as well as revealing the impact of strategic investments, or the need thereof.

The CCRA is committed to continuing the CCRS and expanding its reporting as information needs emerge over the 2015 to 2020 timeframe. The database will also be mined as one source of the new work to be undertaken on demonstrating the research value proposition.

Expected Outcome of this Strategy

- Annual cancer research investment reports will be published.

TACTICS	LEAD/PARTNER AGENCIES	COMPLETION DATES
6.2.1 Publish annual reports on the cancer research investment in Canada.	CCRA Executive Office supported by all CCRA Members and other participating research funders	2015–2020
6.2.2 Prepare investment reports on specific areas of research and/or specific cancers to support other CCRA strategic priorities as needed.	CCRA Executive Office supported by all CCRA Members and other participating research funders	2015–2020

Strategy 6.3: Showcase Canadian cancer research through organizing and hosting the biennial Canadian Cancer Research Conference.

Benefit of this Strategy

The biennial CCRC provides an opportunity to showcase excellence in research and to foster collaboration and growth within the Canadian cancer research community.

Background

In its 2010 pan-Canadian Cancer Research Strategy, the CCRA identified a need for a national, general cancer research conference. The first such conference was convened in 2011, followed by a second one in 2013; each was attended by about 1000 delegates. The conferences are self-financed through a combination of sponsorship support from CCRA members and others, and from registration fees. The conference spans the entire research spectrum, from basic discovery research to policy research, and covers all tumour sites. The primary goals of the conference are to showcase the breadth and excellence of Canadian cancer research, to promote exchange scientific information in Canada across the research spectrum, to encourage coordination and collaboration among the research

community, and to provide the opportunity for researchers, cancer patients and survivors, and the public to connect. Furthermore, the CCRC also provides opportunities for funding agencies to connect with their research communities, promote new or existing programs, and host workshops.

Conferences have included a Community Forum which provided opportunities for the research community, cancer patients and survivors, and the public to engage and interact and a Careers in Cancer Research Development Program (2013) to provide mentorship opportunities for researchers at all stages of their careers, with a special focus on new principal investigators and senior postdoctoral fellows.

With these successes, the CCRA plans to continue hosting and organizing biennial conferences in 2015, 2017 and 2019.

Expected Outcome of this Strategy

- Conferences will be held in 2015, 2017 and 2019.

TACTIC	LEAD/PARTNER AGENCIES)	COMPLETION DATES
6.3.1 Plan and host biennial conferences.	All CCRA Members supported by CCRA Executive Office	2015, 2017, 2019

3. NEXT STEPS







The strategies and tactics in this plan support six thematic goals and objectives. The plan touches on all aspects of the cancer research continuum and as a result, points of intersection between goals, strategies and expected outcomes are found throughout as illustrated in Figure 5. This shared strategy aims to facilitate working collectively and identifies new areas for collaboration to address shared priorities and gaps.

Target 2020 sets a direction for CCRA members and partner organizations for the remainder of this decade. This strategy

- builds on accomplishments from the first CCRA strategy³ (e.g., prevention research),
- builds on existing assets (e.g., CPTP) and addresses sustainability of assets (e.g., CTRNet),
- further supports the research enterprise (e.g., discovery research),
- addresses gaps (e.g., survivorship research), and
- introduces new initiatives (e.g., in health services research).

Implementation of the strategy and progress on tactics will be reviewed annually by CCRA members to ensure anticipated outcomes are achieved (Figure 6). While the strategy proactively describes a plan for Canada's cancer research funders to 2020, it will remain responsive to new initiatives and opportunities as they emerge. The flexibility to harness members to collaboratively address new and emerging issues quickly is critical to maximize the impact of investments in research for the benefit of those living with and affected by cancer.

FIGURE 6
TARGET 2020 TIMELINE

THEMATIC GOAL	STRATEGY	TACTIC	2015	2016	2017	2018	2019	2020	
 Discovery	1.1 Maintain strong investment in high quality, discovery-based research that will improve cancer outcomes. In particular, institute directed/strategic research funding opportunities in the following areas: i) hard-to-treat cancers; ii) metastatic disease; iii) mechanisms of resistance; and iv) cancer stem cells.	1.1.1						●	
		1.1.2			●				
		1.1.3							●
		1.1.4							●
 Clinical Innovation	2.1 Improve cancer clinical trials outcomes and recruitment rates through support and optimization of the Canadian Cancer Clinical Trials Network (3CTN).	2.1.1						●	
		2.1.2							●
	2.1.3					●			
	2.2 Establish a pan-Canadian network of molecular diagnosis and pathology hubs supporting translational and personalized medicine and build capacity to sustain the network.	2.2.1			●				
2.3 Improve the quality of biorepositories in Canada by sustaining the activities of the Canadian Tissue Repository Network (CTRNet).	2.3.1	●							
 Prevention	3.1 Increase the number of prevention researchers in Canada by providing opportunities for training and capacity building.	3.1.1	●						
		3.1.2		●					
		3.1.3							●
		3.1.4	●						
	3.2 Increase collaborative funding opportunities to support prevention research as described in the 2012 <i>Prevention Research Framework</i> .	3.2.1							●
		3.2.2							●
		3.2.3							●
	3.3 Ensure access to and use of the Canadian Partnership for Tomorrow Project (CPTP) population laboratory.	3.3.1							●
3.3.2								●	
 Patient Experience	4.1 Assess survivorship research in Canada and prepare a survivorship research framework that proposes actions to address gaps and builds on existing opportunities. Implement recommendations made in the report.	4.1.1			●				
		4.1.2			●	●			
	4.2 Assess palliative, including end-of-life, research in Canada and prepare a palliative and end-of-life research framework that proposes actions to address gaps and build on existing opportunities. Implement recommendations made in the report.	4.2.1			●				
		4.2.2			●	●			
 Health Services	5.1 Develop funding opportunities and methods to enhance research capacity and identify mechanisms that will improve the interface between researchers and adopters within health care systems.	5.1.1			●				
		5.1.2							●
 Core Activities	6.1 Demonstrate the research value proposition using a common framework, language, and reporting conventions (including but not limited to the impacts of investment in discovery research, trainee awards, and health services research).	6.1.1			●				
		6.1.2							●
	6.2 Continue to provide annual reports on cancer research investment in Canada through the Canadian Cancer Research Survey.	6.2.1							●
		6.2.2							●
	6.3 Showcase Canadian cancer research through organizing and hosting the biennial Canadian Cancer Research Conference.	6.3.1	●		●		●		

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ABBREVIATIONS

ACF	Alberta Cancer Foundation	FRQS	Fonds de recherche du Québec – Santé
AIHS	Alberta Innovates-Health Solutions	GC	Genome Canada
ARCC	Centre for Applied Research in Cancer Control	GQ	Génomique Québec
BCCA	BC Cancer Agency	ICRP	International Cancer Research Partnership
BCSC	Breast Cancer Society of Canada	KFC	The Kidney Foundation of Canada
BTFC	Brain Tumour Foundation of Canada	LLSC	The Leukemia & Lymphoma Society of Canada
C¹⁷	C ¹⁷ Research Network	MSFHR	Michael Smith Foundation for Health Research
CAPCA	Canadian Association of Provincial Cancer Agencies	NAPHRO	National Alliance of Provincial Health Research Organizations
CARO	Canadian Association of Radiation Oncology	NBCN	New Brunswick Cancer Network
CBCF	Canadian Breast Cancer Foundation	NBHRF	New Brunswick Health Research Foundation
CCMB	CancerCare Manitoba	NCI	National Cancer Institute (U.S.)
CCNS	Cancer Care Nova Scotia	NET	New Emerging Teams
CCO	Cancer Care Ontario	NPCC	National Pancreatic Cancer Canada Foundation
CCRA	Canadian Cancer Research Alliance	NRC	National Research Council of Canada
CCRC	Canadian Cancer Research Conference	NSHRF	Nova Scotia Health Research Foundation
CCRS	Canadian Cancer Research Survey	OCC	Ovarian Cancer Canada
CCS	Canadian Cancer Society	OICR	Ontario Institute for Cancer Research
3CTN	Canadian Cancer Clinical Trials Network	PCC	Prostate Cancer Canada
CHSPRA	Canadian Health Services and Policy Research Alliance	PEOLC	Palliative and End of Life Care
CIHR	Canadian Institutes of Health Research	PHAC	Public Health Agency of Canada
CIHR-ICR	Canadian Institutes of Health Research – Institute of Cancer Research	QBCF	Quebec Breast Cancer Foundation (Fondation du cancer du sein du Québec)
CIHR-IHSPR	Canadian Institutes of Health Research – Institute of Health Services and Policy Research	RMB	Research Manitoba
CIHR-IPPH	Canadian Institutes of Health Research – Institute of Population and Public Health	SCA	Saskatchewan Cancer Agency
CPAC	Canadian Partnership Against Cancer	SHRF	Saskatchewan Health Research Foundation
CPTP	Canadian Partnership for Tomorrow Project	STIHR	Strategic Training Initiative in Health Research
CRS	Cancer Research Society	TFRI	The Terry Fox Research Institute
CSO	Common Scientific Outline		
CTRNet	Canadian Tissue Repository Network		

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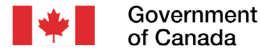
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