ANALYSIS OF CCS’S 2006-2011 INVESTMENT IN CANCER RISK REDUCTION AND PREVENTION RESEARCH

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EXECUTIVE SUMMARY

INTRODUCTION

One of the four priority strategic directions outlined within the Canadian Cancer Society’s (CCS) nationwide strategic plan is to lead and drive excellence in cancer risk reduction and prevention (End 1) research in Canada to reduce cancer incidence rates. As indicated in the plan, the desired results include increased capacity and a relative increase in funding for cancer risk reduction and prevention research. End 1 research refers to research that reduces the risk of cancer and can be accomplished anywhere along the research continuum from identifying factors that affect the risk of cancer at the individual or population level to inventions that lead to action.

To help inform this strategic direction, the Canadian Cancer Society Research Institute (CCSRI) has conducted an analysis of CCS’s 2006-2011 investment in End 1 research. The following key questions guided the analysis:

- What has been the scope of CCS’s actual investment in End 1 research?
- How has the scope of CCS’s investment in End 1 research changed from year to year? Has it increased or decreased over time?
- In what areas of End 1 research has CCS made the greatest investment?
- How many End 1-related projects and researchers have been funded by CCS? Is CCS helping to build capacity in this research area?

The analysis includes data from CCS 2006-2011 fiscal years and focuses specifically on three general areas including total End 1 research investment, number of End 1 research individual investments (i.e. research grants, training awards, and career awards), and number of End 1 research principal investigators funded. It should be noted that the analysis will be updated annually to include current CCS investment data as it becomes available.

CCSRI also conducted a data analysis in which it used data from the CCRA special report on investment in cancer risk and prevention research to compare CCS’s 2005-07 investment in cancer risk and prevention research to other CCRA member organizations’ 2005-07 investment. Given the 2005-07 timeframe, however, the analysis did not capture more recent cancer risk and prevention investment.

1 As outlined in the CCS nationwide strategic plan, there are three “Ends”, or long-term goals, guiding the mission of the CCS. End 1 is focused on reducing cancer incidence; End 2 is focused on reducing cancer mortality rates; and End 3 is focused on improving the quality of life (QOL) for Canadians living with and beyond cancer.
prevention initiatives and activities. As such, CCSRI decided to conduct a secondary analysis including more current CCS investment data, which is outlined here.

To provide a complete and accurate account of the scope of CCS investment in End 1 research from 2006-2011, the analysis includes both CCSRI and Division programs and initiatives related to End 1 research including:

- CCSRI/NCIC\(^2\) research grants
- CCSRI/NCIC career and training awards
- Prevention Initiative research grants and training awards
- Canadian Cancer Etiology Research Network (CCERN)
- Propel Centre for Population Health Impact (Propel)
- NCIC Clinical Trials Group (CTG)
- Canadian Breast Cancer Research Alliance (CBCRA)
- Canadian Prostate Cancer Research Initiative (CPCRI)
- Canadian Tobacco Control Research Initiative (CTCRI)
- Occupational Cancer Research Centre (OCRC) (Ontario Division (CCS-OD))
- Canadian Cancer Society Chair in Population Cancer Research (Nova Scotia Division (CCS-NS))
- Canadian Cancer Society / UBC Chair in Cancer Primary Prevention & Cancer Prevention Centre (British Columbia/Yukon Division (CCS-BCY))

**SELECTED KEY FINDINGS (2006-2011)**

- During the 2006-2011 timeframe, CCS invested 13.5% of its total research portfolio in End 1 research. CCS investment in End 1 research relative to its total research investment fluctuated over the years from 15.5% in 2006 to a low of 11.5% in 2009 and back up to a high of 16.7% in 2011. The year-by-year increase since 2009 coupled with the advent of the Prevention Initiative suggests that CCS is now well positioned to sustaining a relative increase in funding for End 1 research going forward.

\(^2\) In 2009, the Canadian Cancer Society integrated the operations of the National Cancer Institute of Canada (NCIC), creating the Canadian Cancer Society Research Institute. Due to the historical nature of the data NCIC is referenced.
CCS’s End 1 research investment includes a mixture of investments made through different programs or levels of the organization. Although, the bulk of CCS’s End 1 research investment was made through CCSRI/NCIC during the 2006-2011 timeframe (75%), Division investments increased significantly to their highest point in 2011 accounting for 34% of CCS’s overall investment in End 1 research in that year. CCS investment in multi-partner initiatives (CBCRA, CPCRI, and CTCRI) decreased over the 2006-2011 timeframe as program partnerships were phased out.

CCS investment in End 1 research from 2006-2011 was made through a number of different funding mechanisms. During this timeframe, the majority of CCS’s End 1 research investment was made through research grants (49%) followed by major programs (38%), career awards (11%), and training awards (2%). On a year-by-year basis, CCS’s investment in research grants dropped while its investment in major programs remained fairly consistent. It should be noted that the bulk of CCS End 1 research grants were funded through CCSRI/NCIC’s open investigator-initiated grants competitions. CCSRI/NCIC’s funding levels remained fairly consistent from 2006-2011, which suggests that the decrease in End 1 research grants was more likely due to the competitiveness of End 1 research grants during this time period than strategic funding decisions made by CCSRI/NCIC. Partly as a result of this, CCS established the Prevention Initiative in 2009, which implements targeted funding mechanisms for End 1 research. Career awards represented a relatively small investment until 2011 when they increased significantly over previous years due to an increased investment by the CCS-BCY Division in the Canadian Cancer Society / UBC Chair in Cancer Primary Prevention & Cancer Prevention Centre. Training awards represented a fairly small investment across all the years.

The greatest proportion of CCS’s End 1 research investment from 2006-2011 was related to tobacco (38%) followed closely by cancer etiology (36%), healthy living (17%) and environmental exposure to carcinogens (O&E) (9%). On a year-by-year basis, CCS’s investment in research related to healthy living and O&E generally increased whereas its investment in cancer etiology generally decreased. CCS investment in tobacco research remained fairly consistent across all the years, which suggests that it remains an important area of research for CCS.

CCS’s End 1 research investment was most heavily concentrated in the provinces of Ontario, Quebec and British Columbia. This investment distribution mirrors that of CCS’s total research portfolio and the Canadian cancer risk and reduction prevention research landscape.

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3 The CPCRI partnership formally ended on January 31, 2009; the CTCRI partnership formally ended on June 30, 2009; the CBCRA partnership formally ended on March 31, 2010.
4 As reported in the Canadian Cancer Research Alliance’s report on Investment in Cancer Risk and Prevention Research, 2005-2007.
CCS funded a total of 279.7 individual investments (i.e. research grants, training awards, career awards, fellowships, etc.) related to End 1 research from 2006-2011; however, on a year-by-year basis, individual investments dropped from a high of 105.4 in 2007 to a low of 37.9 in 2011. This drop in individual investments can be explained by the phasing out of the CTCRI program partnership as well as the suspension of CCSRI/NCIC’s training awards program. It is important to note that the number of individual investments reached its lowest point in 2011 just as CCS’s investment in End 1 research reached its highest point. This suggests that CCS is beginning to concentrate its End 1 research investment in a fewer number of larger projects and initiatives.

A total of 197 unique principal investigators involved in End 1 research were funded by CCS from 2006-2011. On a year-by-year basis, the number of CSS supported End 1 research principal investigators dropped from a high of 63 in 2006 to a low of 34 in 2010 and 2011. This drop came mostly as a result of the decreased number of End 1 research grants funded through CCSRI/NCIC’s open investigator-initiated grants competitions. Interestingly, as with individual investments, the number of unique principal investigators related to End 1 research funded by CCS dropped to its lowest point in 2011 just as its overall investment in End 1 research reached its highest point. This suggests a shift in CCS’s End 1 research investment from research grants to other funding mechanisms such as career awards or major programs.

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5 Principal investigators counted only once across all years.