

# Canada's Investment in Cancer Survivorship Research, 2005–2016

## CANADIAN CANCER RESEARCH SURVEY

Since 2005, CCRA members have prioritized the quantification of Canada's cancer research funding. To that end, the CCRA's Canadian Cancer Research Survey (CCRS) was created, a database that has evolved over time to track the research investments made by over 40 organizations.

The CCRS is estimated to cover about 60–80% of the research investments made in Canada through peer-reviewed processes. Data are updated and corrected annually and will vary from previously published reports. Investment numbers may differ from those reported by contributing organizations because of methodological conventions like budget proration.

## THIS REPORT

This brief report provides an overview of the level and nature of research investment in cancer survivorship made by Canadian research funding organizations. Page 3 of this report presents annual investment data, while page 4 shows the proportion of the investment by key attributes for 2016 (graphs) and for the three four-year periods (tables). Data were coded to the classification below.

### RESEARCH FOCUS

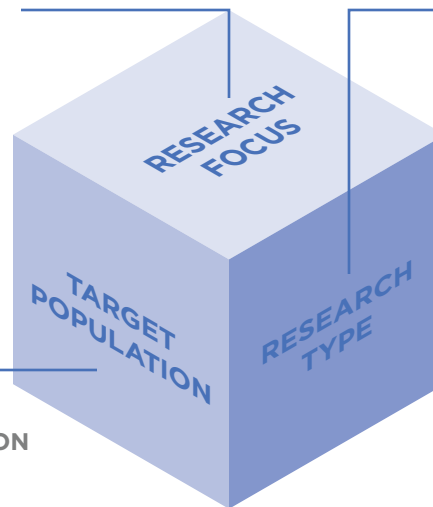
- Physiological effects
- Psychological effects
- Quality of life
- Social needs/social support
- Economic sequelae
- Care delivery, access and quality
- Thanatological issues

### RESEARCH TYPE

- Model systems
- Descriptive
- Intervention
- Prediction/assessment
- Knowledge synthesis
- Other support

### TARGET POPULATION

- Patients
- Family/caregivers



By 2020, it is estimated that there will be close to two million cancer survivors in Canada. The cancer survivor population is diverse—there are many kinds of cancer and people are diagnosed at different stages and receive different treatments. Treatment outcomes and long-term effects can be further complicated by the patient's age and pre-existing health conditions. As an initiative of *Target 2020*, CCRA's current strategic plan, a pan-Canadian research framework for cancer survivorship research was released in 2017 to help prioritize research investment in this area.



### Investment Trend

From 2005 to 2016, \$211M was invested in cancer survivorship research and this represented nearly 4% of the overall cancer research investment for the decade. The investment climbed steadily from 2005 to 2015, dipping slightly in 2016 to \$24M. The proportion of the investment from targeted programs also dipped in 2016. One in five dollars of the total cancer survivorship research investment in the last four-years, 2013-16, was focused on children and adolescents.



### Major Funders

Of the 42 organizations tracked in the CCRS, 39 had some level of investment in cancer survivorship research over the 12 years. Much of the investment (61%) was made by three organizations: Canadian Institutes of Health Research (CIHR), Canadian Cancer Society (CCS), and Canadian Breast Cancer Foundation (CBCF).



### Research Focus

From the first to the latest four-year period, there were substantial increases in the investments in physiological effects (\$28M), care delivery, access and quality (\$9M), and, to a lesser extent, quality of life (\$2M). Four types of physiological issues accounted for most of the investment in 2013-16: cardiotoxicity/vascular issues (16%); urinary, sexual and/or reproductive disorders (10%); cognitive and/or neurological issues and neuropathy (10%); and pain (5%).



### Researchers

There were 284 nominated principal investigators (PI) who received one or more award/grant focused on survivorship over the 12 years. 180 nominated PIs with funded research in the 2013-16 period and a large percentage (45%) were working in institutions in Ontario.



### Investment by Funding Sector

Collectively, funders within the federal government represented a consistent 46% of the cancer survivorship research investment for all three periods. The investment by organizations within the charitable sector grew 50% from the first to the latest period and, in 2013-16, this sector represented 38% of the cancer survivorship research investment, a much higher proportion than the 26% the sector represented for the overall cancer research investment.



### Investment by Cancer Site

Breast cancer research represented 41% of the site-specific cancer survivorship research over the 12 years. The largest increased investment from the first to the third time period was found for prostate cancer (\$9M), breast cancer (\$8M), leukemias (\$6M), and oral cancers (\$2M). Together, prostate and breast cancer survivors represent about 40% of all cancer survivors.



### Research Type

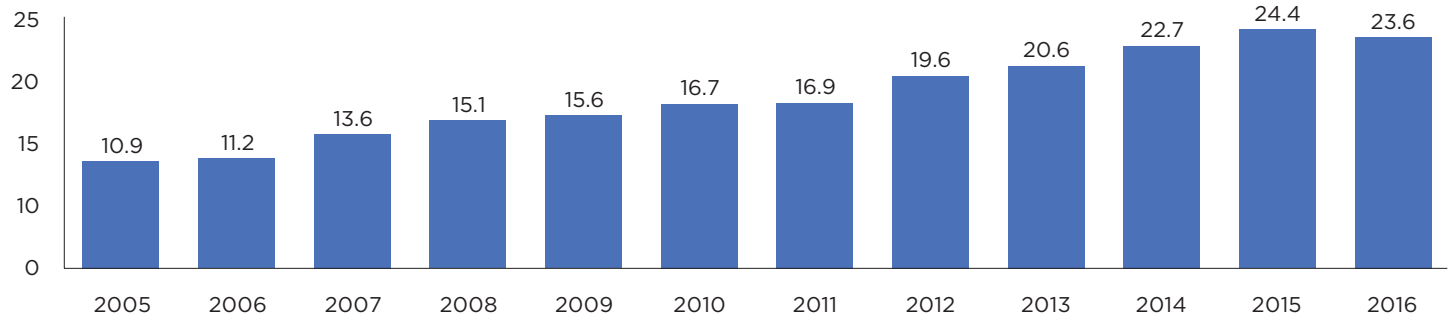
The research investment changed from the first to the latest four-year period in terms of type of research. The most significant shifts: \$22M more was invested in intervention research, \$11M more in prediction/assessment research and \$10M more in descriptive research in the 2013-16 period.



### Trainees

Although most trainees are supported from diverse sources like provincial or institutional programs, internships or operating grants, a small group of trainees receive awards through the grant peer-review process. Regional investment in trainee awards for cancer survivorship research was highest in the 2013-16 period whereas national investment showed a decrease.

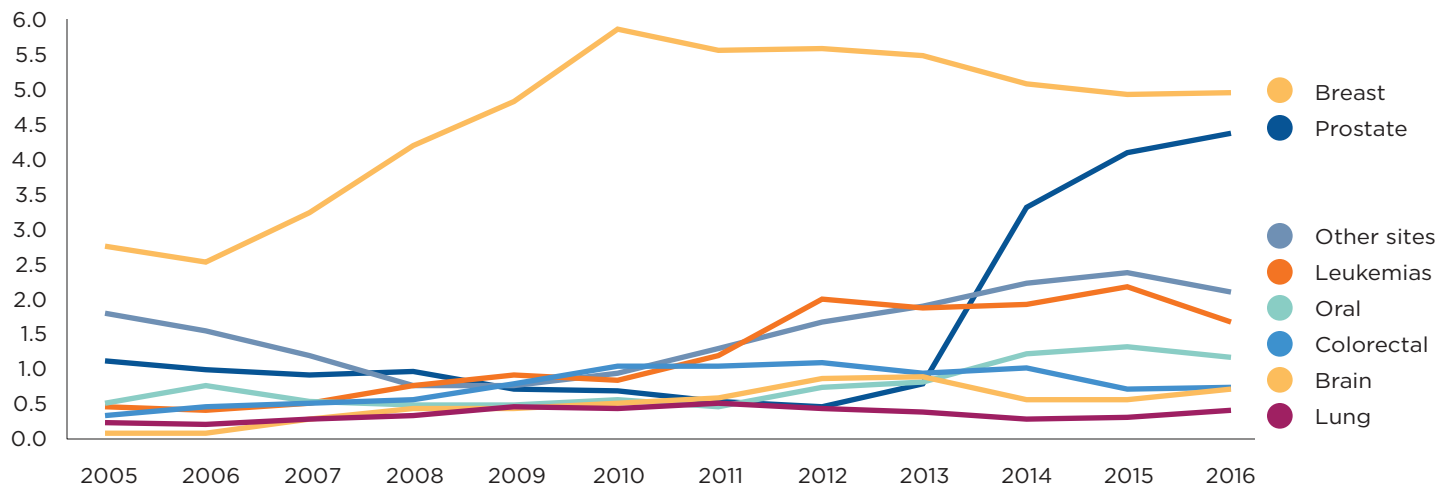
### Annual Investment (\$M)



### Investment by Funder (\$M)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CIHR	4.6	4.5	4.5	4.7	4.8	6.6	6.1	7.5	8.2	8.6	8.7	7.8
Prostate Cancer Canada	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	2.4	3.4	3.9
CCS	2.4	2.7	2.8	2.6	2.6	2.5	2.4	3.4	3.5	3.0	2.7	2.7
CBCF	0.8	0.6	1.2	1.8	2.0	2.2	2.0	2.0	2.1	1.8	1.4	1.3
Public Health Agency of Canada	0.2	0.2	0.3	0.4	0.5	0.5	0.7	0.7	0.9	1.2	1.3	1.2
Fonds de recherche du Québec - Santé	0.3	0.4	0.4	0.3	0.3	0.3	0.6	0.8	0.9	0.8	0.9	0.9
Alberta Innovates	0.5	0.8	0.9	1.1	1.2	0.9	0.9	0.6	0.4	0.3	0.4	0.5
Other	2.0	2.1	3.6	4.2	4.2	3.6	4.3	4.5	4.2	4.6	5.6	5.3

### Investment by Cancer Site (\$M)



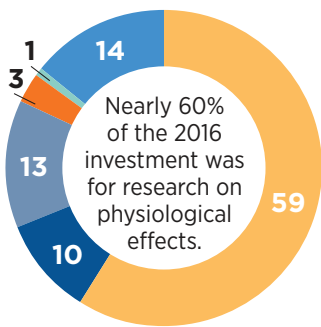
**Program Type (%)**



- Targeted
- Other

	2013-16	2009-12	2005-08
Targeted	29	19	14
Other	71	81	86

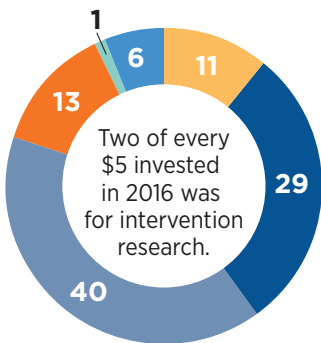
**Research Focus (%)**



- Physiological effects
- Psychological effects
- Quality of life
- Social needs/social support
- Economic sequelae
- Care delivery, access and quality
- Thanatological issues

	2013-16	2009-12	2005-08
Physiological effects	55	49	44
Psychological effects	11	17	18
Quality of life	15	15	22
Social needs/social support	3	2	3
Economic sequelae	1	2	3
Care delivery, access and quality	15	15	11
Thanatological issues	0	1	0

**Research Type (%)**



- Model systems
- Descriptive
- Intervention
- Prediction/assessment
- Knowledge synthesis
- Other support

	2013-16	2009-12	2005-08
Model systems	10	9	12
Descriptive	30	38	34
Intervention	38	28	26
Prediction/assessment	15	11	6
Knowledge synthesis	1	2	1
Other support	6	12	21