

Canada's Research Investment in Palliative and End-of-Life Cancer Care, 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 palliative and end-of-life cancer care 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

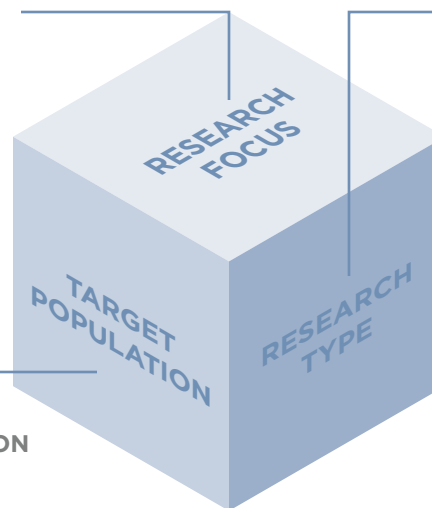
- Physiological effects
- Psychological effects
- Quality of life
- Social needs/social support
- Economic sequelae
- Care delivery, access and quality
- Thanatological issues

RESEARCH TYPE

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

TARGET POPULATION

- Patients
- Family/caregivers



Understanding the amount and nature of the research investment in palliative and end-of-life cancer care has been important to many of the CCRA members and targeted funding has been allocated to address the need to enhance research capacity. As an initiative of *Target 2020*, CCRA's current strategic plan, a pan-Canadian research framework for palliative and end-of-life care research was released in 2017 to help prioritize research investment in this area.



Investment Trend

From 2005 to 2016, the investment in palliative and end-of-life cancer care research was variable, with a significant drop in years 2015 and 2016. Over the twelve years, \$77M was invested in this area of research and this represented 1.3% of the overall cancer research investment.



Major Funders

Of the 42 organizations tracked in the CCRS, 33 had some investment in palliative and end-of-life cancer care research. The investments by 11 organizations, however, accounted for 91% of the 12-year investment. Canadian Institutes of Health Research (CIHR) had the highest level of funding each year, with a cumulative total of \$37M, but this investment dropped significantly in 2015. The Canadian Cancer Society (CCS) represented 23% of the 2016 investment and 19% of the 12-year investment.



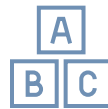
Research Focus

In terms of research focus, there was an increased investment in care delivery, access and quality from the first to the latest four-year period. While CIHR and CCS were the leading funders in this area, the increase was due to new investments by Alberta Innovates, Prostate Cancer Canada, and Fonds de recherche du Québec – Santé (FRQS).



Researchers

There were 137 nominated principal investigators (PI) who received one or more award/grant focused on palliative and end-of-life cancer care over the 12 years. This represented 4% of the total number of cancer researchers. Of these, 60% (N=81) had received funding in 2013–16 and were working at institutions located in nine provinces.



Investment Focused on Children/Adolescents

The absolute and relative proportion of the palliative and end-of-life cancer care research focused on children/adolescents dropped from the first to the latest four-year period. This investment represented 4% of the overall investment in palliative and end-of-life cancer care research over the 12-year period.



Targeted Investment

Investment from targeted programs represented 19% of the 12-year investment, with 64% from the CIHR and 32% from the CCS. There was very little targeted investment after 2009.



Physiological Effects

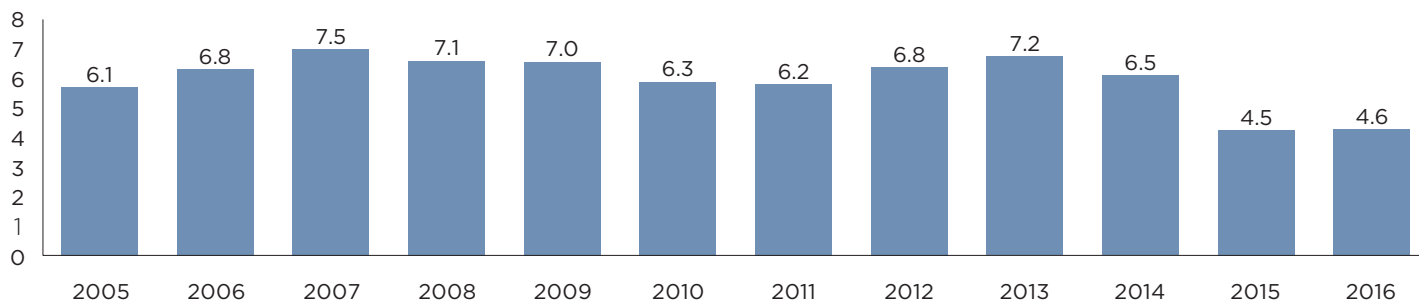
Research on cachexia/anorexia/chemosensory disturbance (grouped into one group) and pain were the physiological effects that had the highest investments in all three four-year periods.



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. There were 76 trainees granted awards for palliative and end-of-life cancer care research over the 12-year period. The amount invested in trainee awards fell from the first to the third period, from \$3.2M in 2005–08 to \$1.6M in 2013–16.

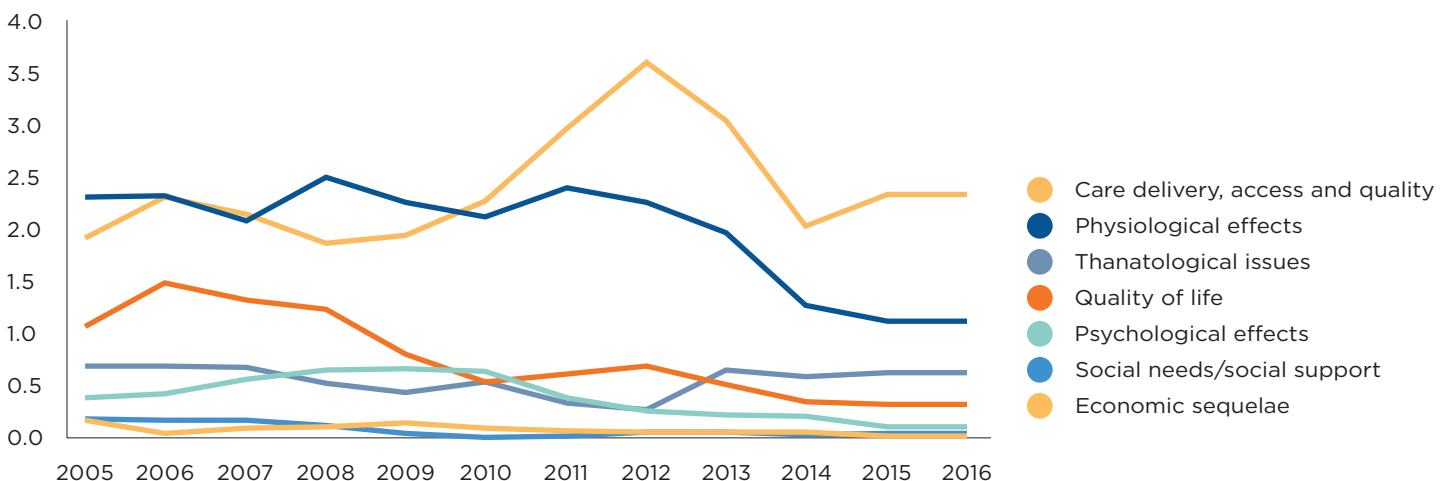
Annual Investment (\$M)



Investment by Funder (\$M)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CIHR	3.19	3.71	4.13	3.82	3.17	2.55	2.85	3.04	3.27	3.02	1.90	1.85
CCS	1.38	1.49	1.59	1.43	1.25	0.98	0.96	1.19	1.14	1.07	0.71	1.04
Alberta Innovates	0.23	0.23	0.35	0.28	0.16	0.09	0.21	0.16	0.39	0.44	0.45	0.37
Canada Research Chairs Program	0.19	0.19	0.19	0.19	0.19	0.23	0.27	0.27	0.27	0.27	0.27	0.37
Canadian Breast Cancer Foundation	0.19	0.12	0.06	0.00	0.03	0.17	0.27	0.41	0.47	0.34	0.26	0.08
Michael Smith Foundation for Health Research	0.01	0.11	0.21	0.23	0.19	0.13	0.27	0.37	0.43	0.29	0.00	0.00
Social Sciences and Humanities Research Council	0.01	0.05	0.12	0.22	0.35	0.34	0.27	0.20	0.17	0.05	0.14	0.11
Canadian Partnership Against Cancer	0.00	0.00	0.00	0.19	0.78	0.67	0.00	0.00	0.00	0.00	0.00	0.00
Fonds de la recherche du Québec - Santé	0.13	0.11	0.11	0.14	0.15	0.10	0.05	0.11	0.17	0.24	0.11	0.12
Ontario Institute for Cancer Research	0.15	0.22	0.21	0.10	0.09	0.16	0.19	0.16	0.14	0.03	0.00	0.00
Alberta Cancer Foundation	0.12	0.13	0.18	0.16	0.08	0.08	0.09	0.08	0.10	0.16	0.15	0.10
Other funders	0.53	0.43	0.35	0.32	0.60	0.79	0.80	0.85	0.68	0.64	0.55	0.55

Investment by Research Focus (\$M)



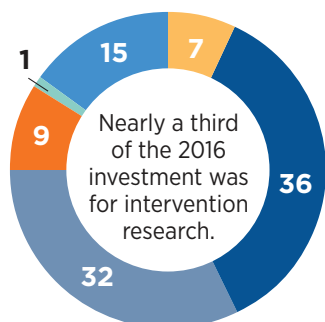
Program Type (%)



- Targeted
- Other

	2013-16	2009-12	2005-08
Targeted	8	10	36
Other	92	90	64

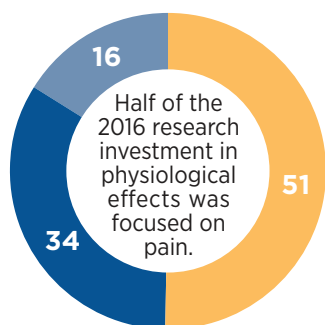
Research Type (%)



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

	2013-16	2009-12	2005-08
Model systems	13	21	6
Descriptive	39	39	38
Intervention	24	15	17
Prediction/assessment	7	7	6
Knowledge synthesis	2	2	1
Other support	15	16	33

Physical Symptoms (%)



- Pain
- Cachexia/anorexia/chemosensory disturbance
- Bone density/osteoporosis/spine integrity/skeletal events
- Fatigue/insomnia
- Delirium
- Other

	2013-16	2009-12	2005-08
Pain	44	28	35
Cachexia/anorexia/chemosensory disturbance	44	56	32
Bone density/osteoporosis/spine integrity/skeletal events	2	7	3
Fatigue/insomnia	1	1	7
Delirium	0	1	9
Other	9	6	13