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TRENDS IN CANCER RESEARCH FUNDING IN CANADA

Aim of Presentation

- Current funding trends
  - Sources of funds, types of support, research areas, cancer sites, changes over time
- Noteworthy Canadian cancer research accomplishments
- Trends that may affect future research funding

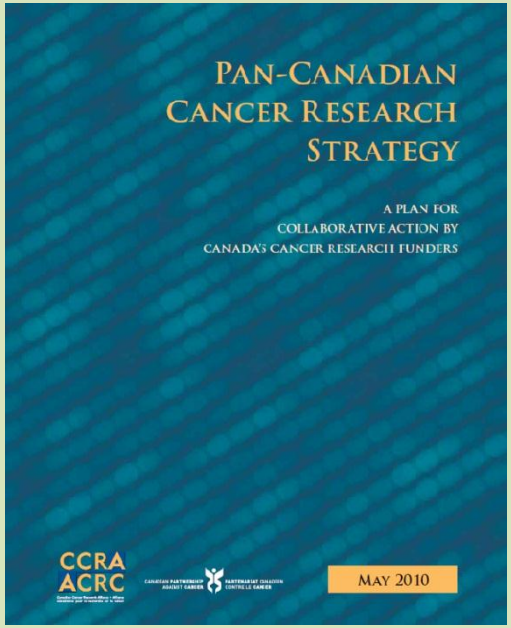
Canadian Cancer Research Alliance (CCRA/ACRC)

- 34 members (government and NGO cancer research funders) coordinating voice for cancer research in Canada (CPAC funded)

- Purpose:
  - foster the development of partnerships amongst cancer research funding agencies in Canada
  - promote the development of national cancer research priorities and strategies
  - report back to donors and the public on the nature and impact of the investment in cancer research funding in Canada
  - work together to achieve the overarching goals of effective and timely cancer control in Canada

Canadian Cancer Research Alliance (CCRA)

http://www.ccra-acrc.ca



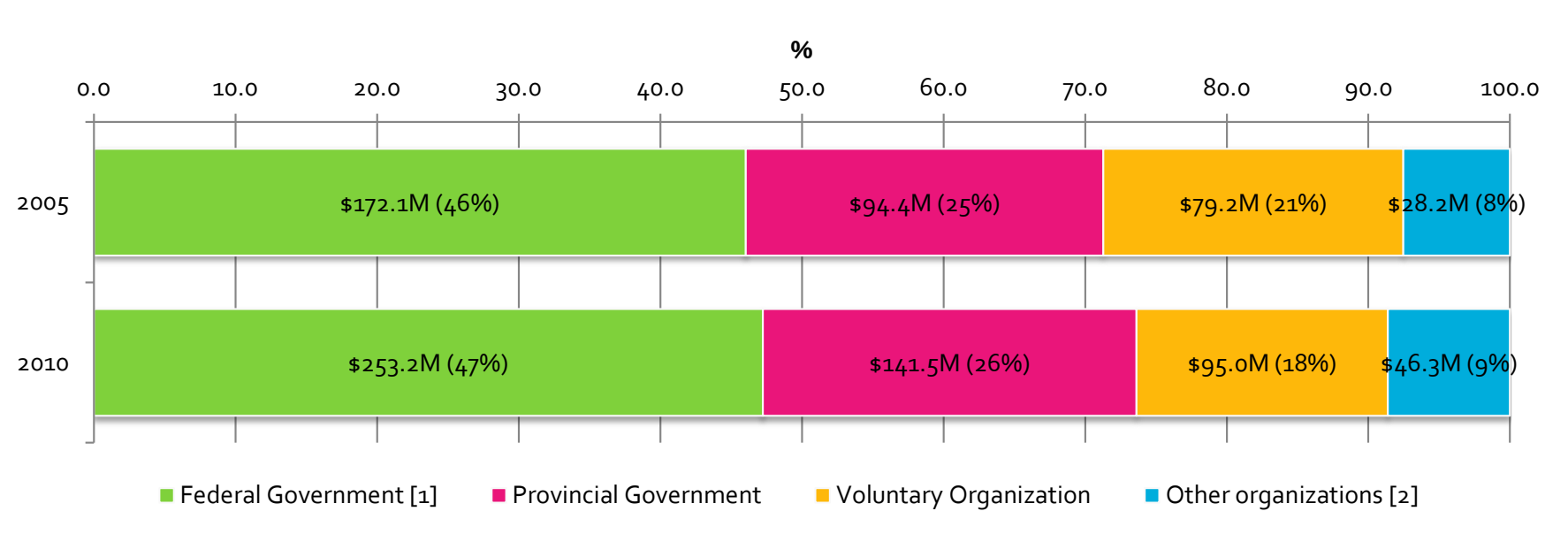
Canadian Cancer Research Survey

- Inventories cancer research investment in Canada by governmental and voluntary organizations (44% of total national funding)
- Assists in the identification of significant gaps and potential opportunities in cancer research
- Helps inform the activities of the pan-Canadian cancer research strategy
- Classifies projects in 7 broad categories based on Common Scientific Outline (CSO), used by the International Cancer Research Partnership (ICRP)

Overall Investment
2010 Highlights

- $536.1M total invested by the 40 organizations tracked in the survey.
- +43% change in investment 2005 to 2010 (+31% inflation-adjusted).
- Largest overall funder was Canadian Institutes of Health Research (CIHR) at $136.9M
  - Followed by the Ontario Institute for Cancer Research (OICR) at $49.9M.
- Strategic investment by the governments of Ontario and, to a lesser extent, Alberta, helped propel the 50% growth in provincial government investment over the 6-year period. There was an infusion of cancer research investment in Atlantic Canada from organizations within the federal government and voluntary sector.
- The single largest funder in the voluntary sector remained the Canadian Cancer Society (CCS), with an investment of $41.7M.
  - 11/15 voluntary organizations tracked in the survey had higher research investments in 2010 compared to 2005.

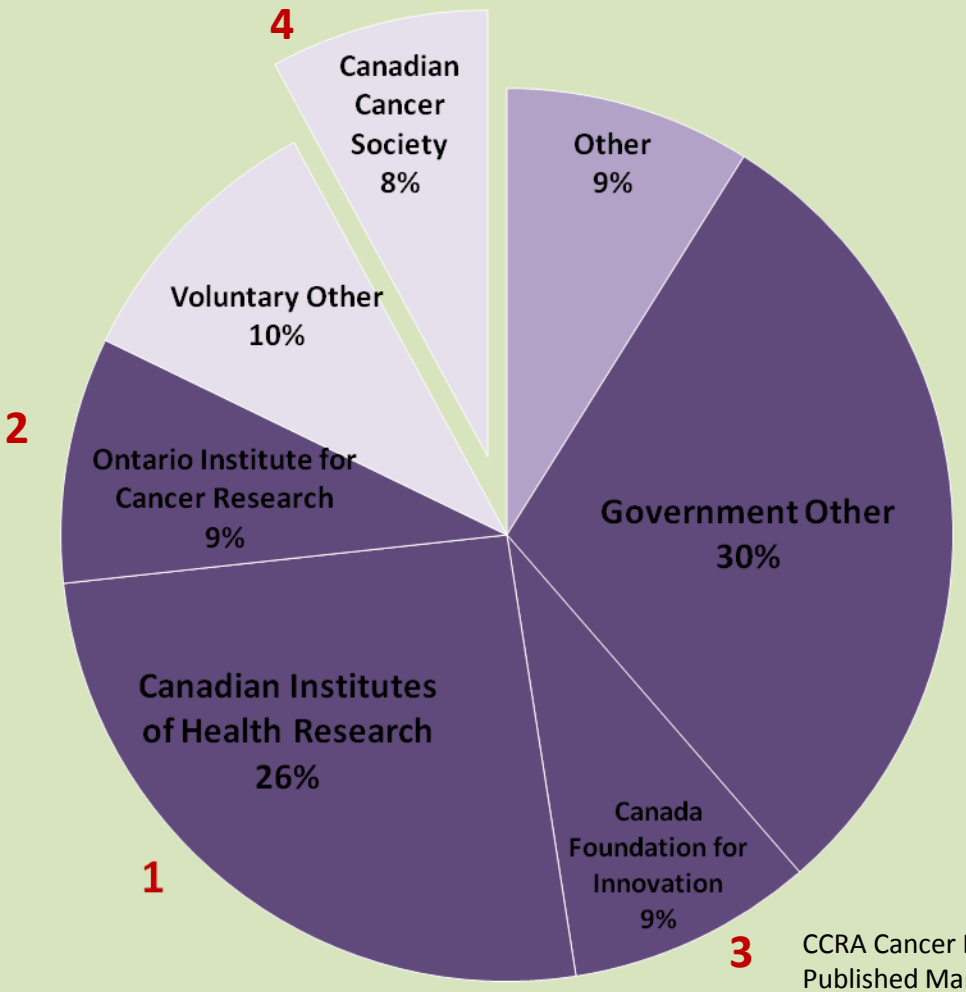
Distribution of 2005 & 2010 Investment By Funding Sector



[1] This figure does not include estimates of the federal Indirect Costs Program.

[2] Represents other partnered/leveraged funding.

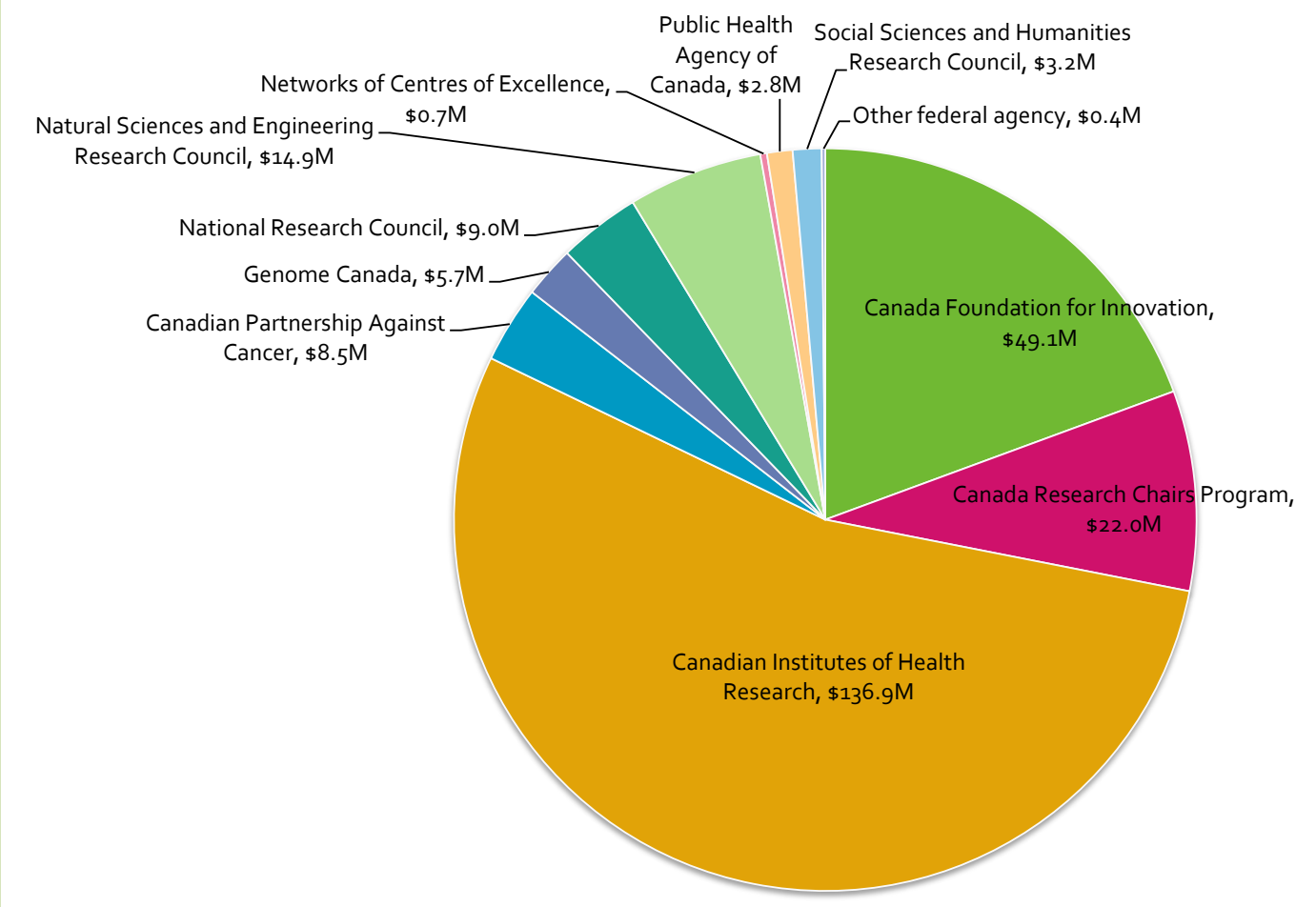
2010 Canadian Cancer Research Investment ($536M) By Sector



74% government
18% voluntary
9% partnered/leveraged

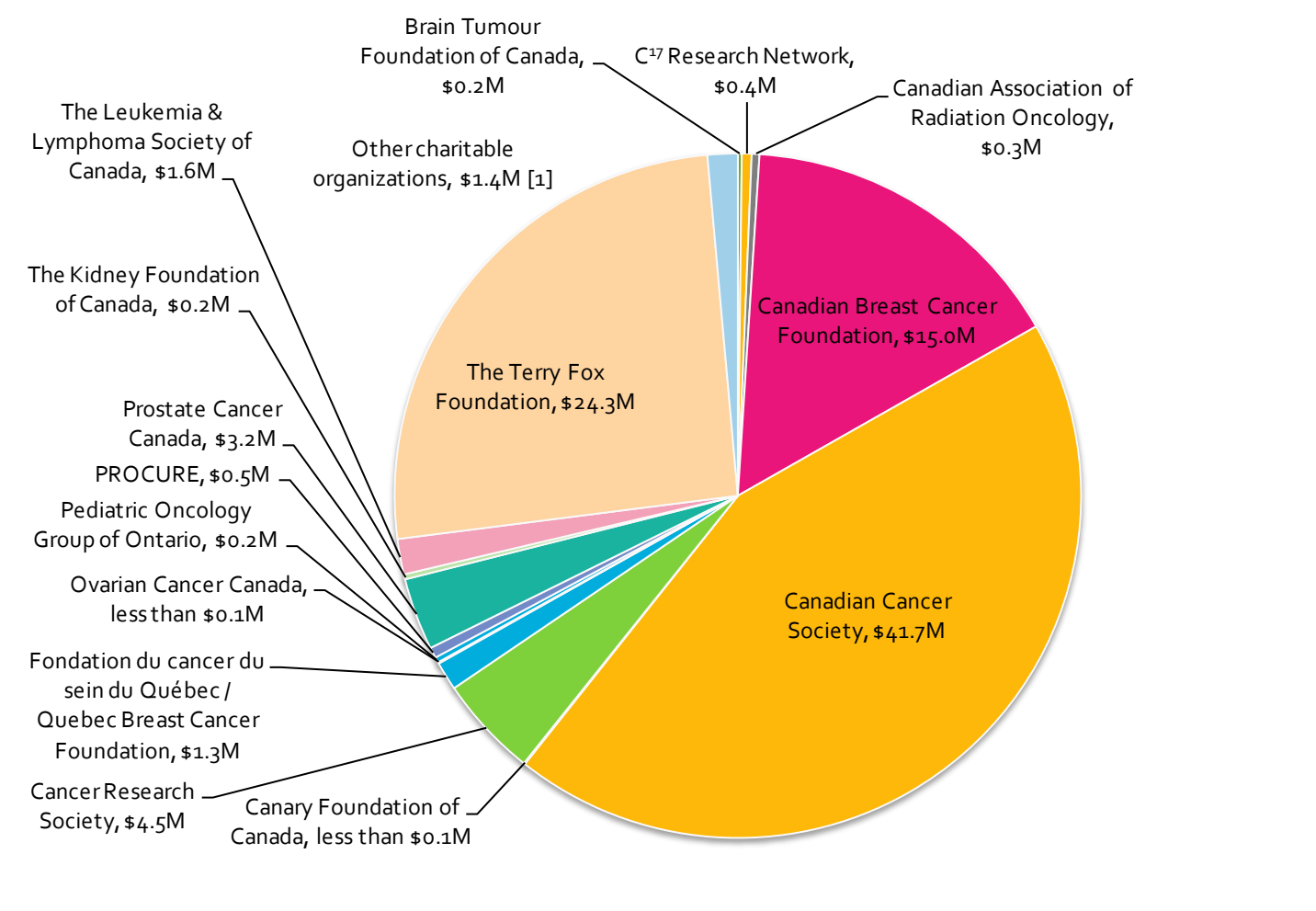
CCRA Cancer Research Investment in Canada 2010
Published March 2013

Distribution Of 2010 Federal Government Investment ($251.5m) [1]



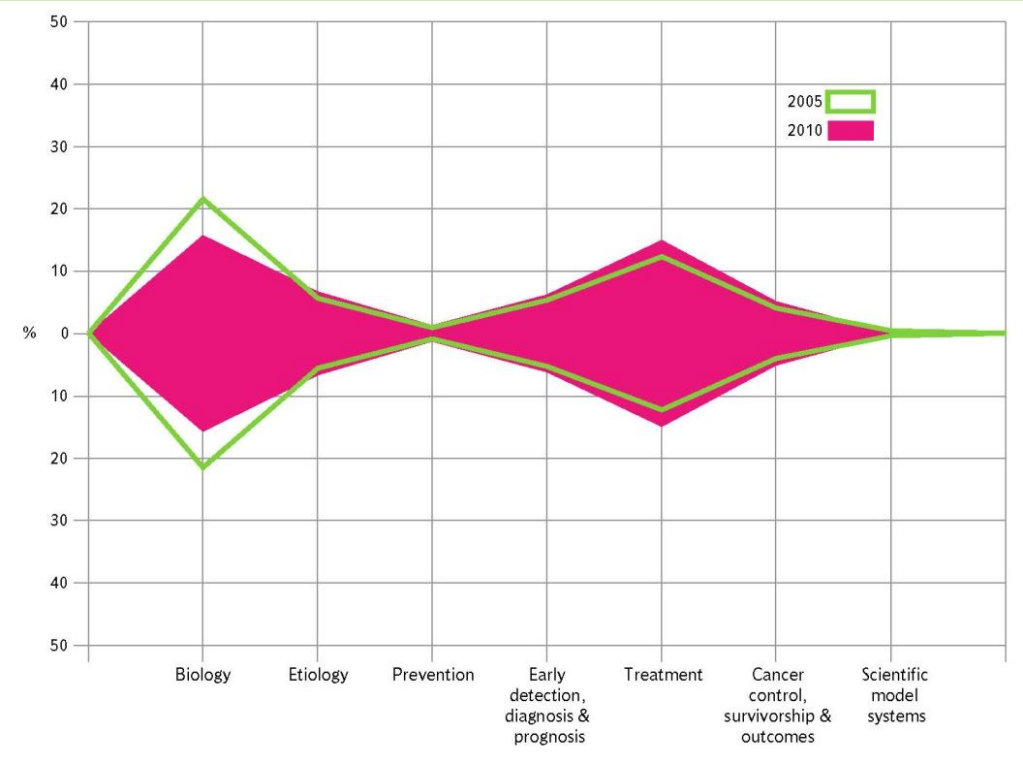
[1] This figure does not include estimates of the federal Indirect Costs Program.

Distribution Of 2010 Voluntary Sector Investment ($95.0m)



[1] Other charities are groups that do not participate in the CCRS, but that contribute monies to the research funding programs of CCRS participating organizations.

Distribution Of Cancer Research Investment By CSO Category 2005&2010



	Biology	Etiology)	Prevention	Early detection, diagnosis & prognosis	Treatment	Cancer control, survivorship & outcomes	Scientific model systems
Proportion of investment in 2005 (%)	43.1	11.3	1.7	10.5	24.5	8.1	0.8
Proportion of investment in 2010 (%)	31.5	13.3	2.6	12.3	29.8	10.3	0.2
2005 investment ($M)	161.1	42.2	6.5	39.2	91.6	30.2	3.0
2010 investment ($M)	168.6	71.5	13.7	66.1	160.0	55.0	1.2
Percent change in investment from 2005 to 2010	4.6	69.4	110.2	68.5	74.7	82.0	-61.7

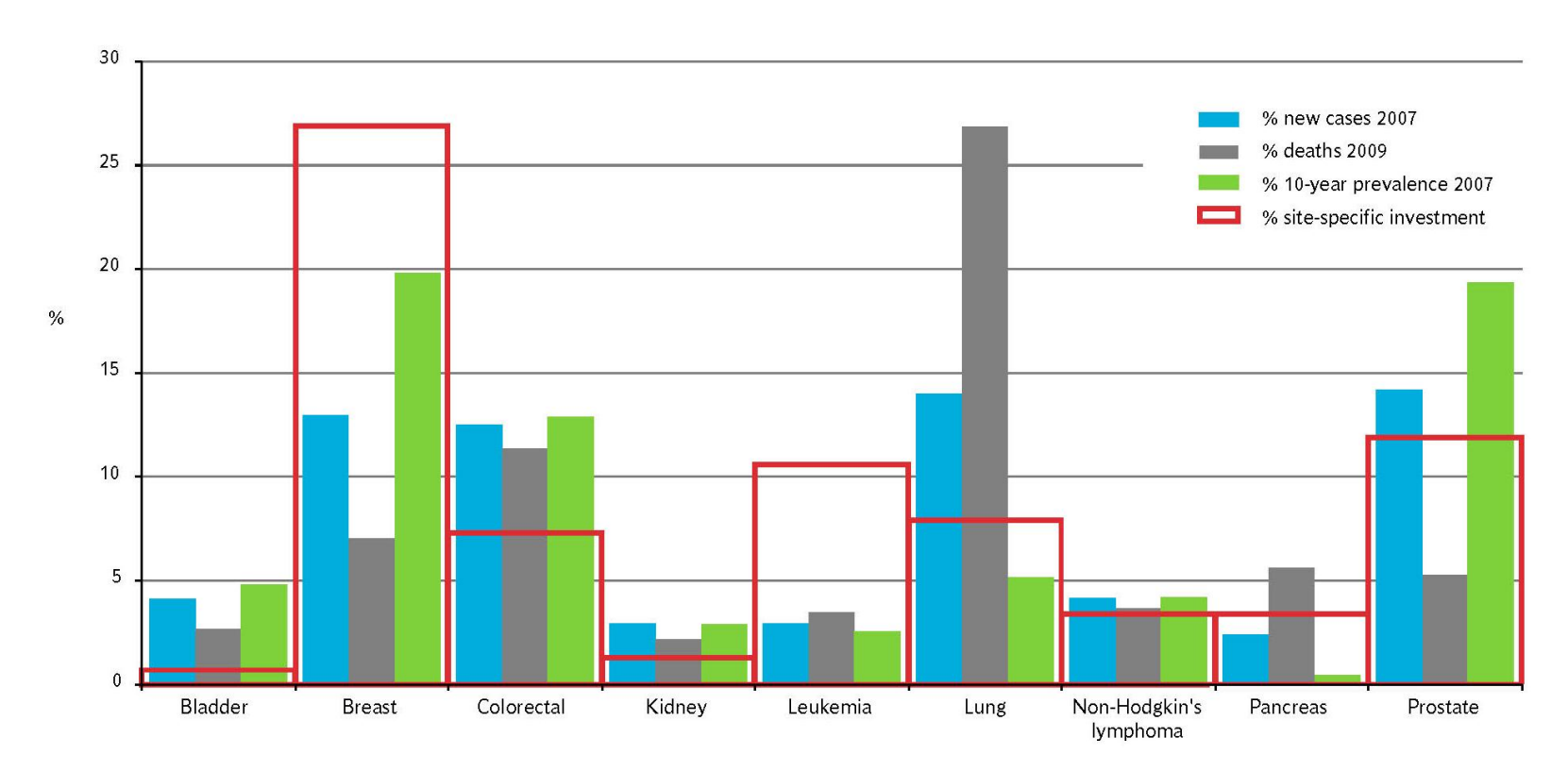
Types of Research/CSO

- 2010 investment by 7 Common Scientific Outline (CSO) categories:

✓	$168.6 M	Biology
✓	$ 71.5 M	Etiology
✓	$ 13.7 M	Prevention
✓	$ 66.1 M	Early detection, diagnosis & prognosis
✓	$ 160.0 M	Treatment
✓	$ 55.0 M	Cancer control, survivorship &
✓	$ 1.2 M	Scientific model systems

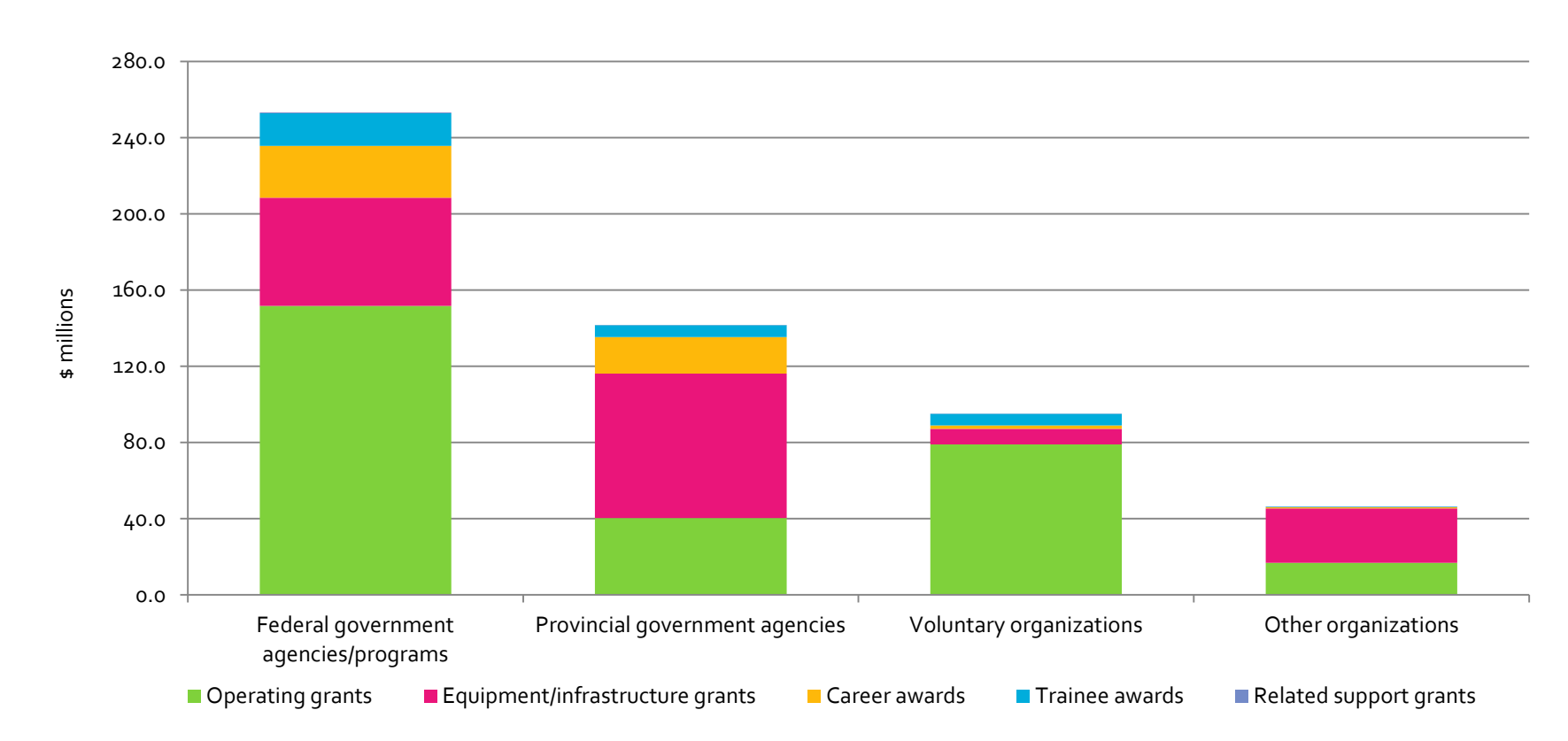
- >60% of the 2010 investment was inBiology(32%) &Treatment (30%).
- The highest percent change in investment from 2005 to 2010 was in Prevention (largely prevention intervention research).

Distribution of 2010 Site-specific Cancer Research Investment by New Cancer Cases [1], Cancer Deaths [2] and 10-year Prevalence [2]for Selected Sites [4]



[1] Source for new cancer cases: CANSIM Table 103-0550 New cases for ICD-O-3 primary sites of cancer (based on the July 2010 CCR tabulation file), by age group and sex, Canada, provinces and territories, annual. Canadian Cancer Registry – 3207.
[2] Source for cancer deaths: CANSIM Table 102-0522 Deaths, by causes, Chapter II: Neoplasms (C00 to D48), age group and sex, Canada, annual (number). Vital Statistics - Death Database – 3223.
[3] Represents site-specific prevalence for patients diagnosed with cancer since 1997 who were alive on January 1, 2007. Data are available from Canadian Cancer Society's Steering Committee on Cancer Statistics, *Canadian Cancer Statistics, 2011* (Toronto: Canadian Cancer Society, 2011).
[4] Represents cancers with the highest combined proportions of new cases and deaths.

2010 Cancer Research Investment By Funding Mechanism For Each Funder Sector ($536.1m)



CCS's Notable Canadian Cancer Research Advances 2012

1. Genetics of triple negative breast cancer (Aparicio)
2. Genetics of childhood medulloblastoma(Taylor)
3. Improving survival in rare pancreatic tumours(CTG)
4. Chemotherapy in Hodgkin's lymphoma (CTG)
5. Barriers to palliative care referral (Zimmermann)
6. Natural product in sea sponges to prevent cachexia (Gallouzi)
7. Thioridazine and its role in stem cells and leukemia (Bhatia)
8. Genetic/protein interaction in childhood sarcoma (Nielson)
9. Vitamin D and cMyc protein (White)
10. Mefloquinine's impact on AML cells (Schimmer)

Recent Changes & Trends in the Canadian Cancer Research Funding Landscape
(Courtesy of Dr. Christine Williams, CCSRI)

- CIHR reforms to the 'open suite' of programs and peer review system
- Individual CCRA member organizations undergoing strategic planning
- CCRA undergoing a renewal of its strategic plan
- 'Shifts' in funding
  - basic biomedical to more translational/clinical research
  - open grant programs to more strategic funding
  - more large team/consortia funding
  - growing need for partnered funding
- Outsourcing of industry R&D to academic labs
- Emphasis on commercialization/ROI

Gotay Predictions

- More emphasis on knowledge translation
- More emphasis on endpoints, results chains
- Priorities increasingly shaped by stakeholders
- Innovative partnerships
- New technologies will drive topics, data collection, interventions