

Cancer Research in Australia 2016 to 2018

Opportunities for strategic research investment



Highlights 2016 to 2018

Funding to cancer research projects and programs

- ▶ This review identified more than \$252 million in funding to 589 individual research projects in the years 2016 to 2018.
 - ▶ The Australian Government is providing 74% of the identified funding (\$187 million).
- ▶ 95% of the identified research projects are being supported by a single funding source.

Tumour-site specific research

- ▶ Research funding to lung cancer, colon & rectum cancer, lymphoma and cancers of the pancreas, oesophagus, mouth and oropharynx, kidney, stomach, bladder, myeloma and bone and connective tissue was low compared with their burden on the Australian population (see Figure 1).

Research categories

- ▶ Almost two thirds of funding is to the combined research categories of Biology (28%) and Treatment (36%) (see Figure 2).
- ▶ Etiology, Prevention and Cancer Control, Survivorship and Outcomes Research receive 10%, 2% and 6% of funding, respectively.

Translational Research

- ▶ Translational research projects and programs in the categories of Clinical, General, and Patient-oriented, each receive less than 10% of funding in 2016-2018 (see Figure 3).

Research collaborations

- ▶ 81% of research projects and programs have one or more named collaborators (see Figure 4).
- ▶ Of those projects with named collaborators, only 4% have named international collaborators.

Review of cancer research funding

This review provides a national summary of funding awarded up to July 2015, for cancer research projects and research programs for 2016 to 2018. Findings from this review provide Cancer Australia with evidence to inform its strategic priorities in cancer research and future investment.

This review of funding to cancer research projects and programs was made possible by co-operation and provision of data by major funders of cancer research in Australia. These funders together provided 90% of funding to cancer research projects and research programs in Australia 2006 to 2011.

Cancer Australia

Cancer Australia was established by the Australian Government in 2006 to provide national leadership in cancer control to improve outcomes for Australians affected by cancer, their families and carers.

Cancer Australia's functions, specified in *The Cancer Australia Act*, include overseeing a dedicated budget for research into cancer and guiding scientific improvements in cancer prevention, treatment and care.

Research funding compared with burden of disease

The funding to research projects and programs investigating specific tumour sites does not always correlate well with the burden of disease (DALYs).

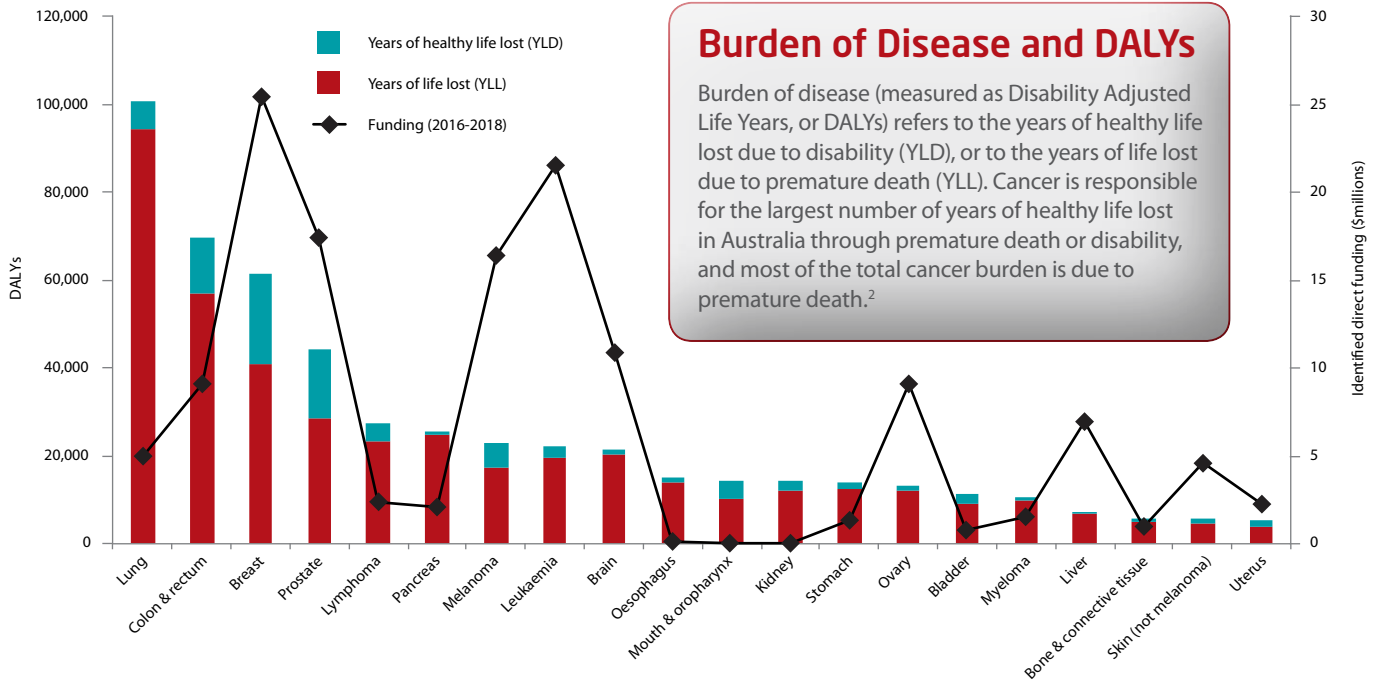


Figure 1. Funding to specific tumour sites 2016-2018 versus burden of disease (DALYs)

Funding to cancer research categories - Common Scientific Outline

In proportional terms Etiology, Prevention, and Cancer Control, Survivorship and Outcomes Research receive the lowest levels of funding.

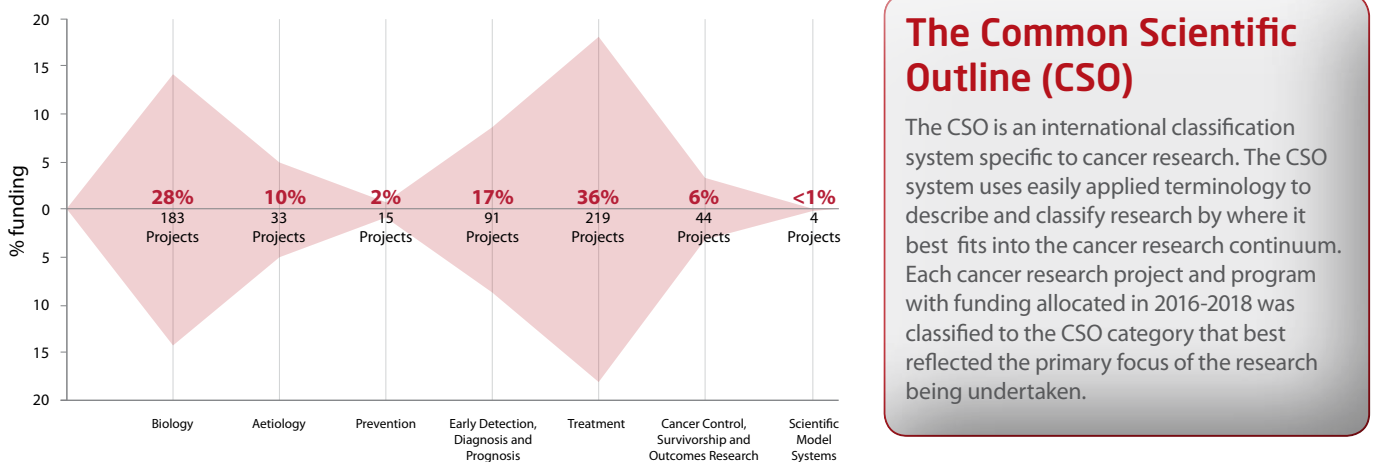


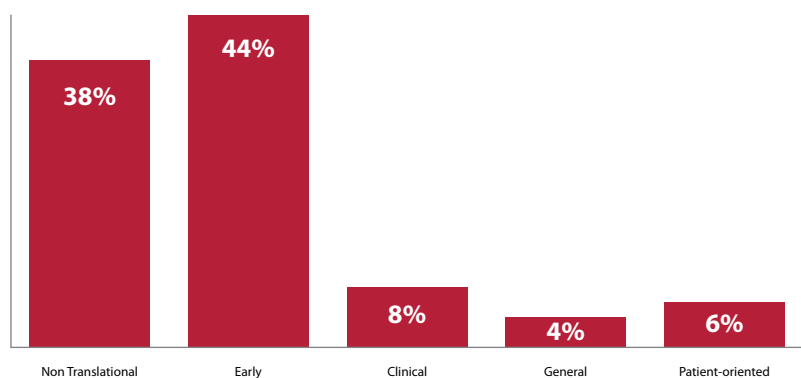
Figure 2. The national pattern of cancer research funding in 2016 to 2018

Funding to cancer research categories - translational research

The five Translational Research Categories identified by the International Cancer Research Partnership include:

- ▶ *Not Translational* – basic research;
- ▶ *Translational/Early* – the translational process that follows fundamental discovery and precedes definitive, late-stage trials;
- ▶ *Translational/Clinical* – research at the clinical application end of the translational spectrum;
- ▶ *Translational/General* - research where difficulty in separating early and late translation/clinical research;
- ▶ *Translational/Patient-oriented* – research focussed on needs in the area of patient care and survivorship.

Research projects and programs in the Clinical, General, and Patient-oriented categories of translational cancer research each receive less than 10% of funding.



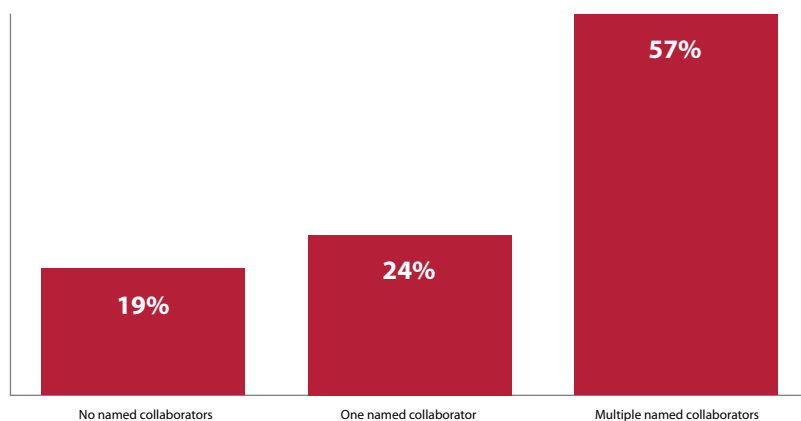
Translational Research Codes

The National Cancer Institute has developed a set of translational research classifications across the research spectrum. The International Cancer Research Partnership has used these definitions to inform development of a Translational Research coding scheme which identifies translational elements within specific CSO sub-categories³. Five translational categories have been identified.

Figure 3. Percentage of funding to cancer research projects and programs classified by translation categories

Research collaborations

In 2016 to 2018, 81% of projects have one or more named collaborators.



Research Collaborations

For the review of research funding, funders provided details of collaboration for each cancer research project. Collaborators included in this review were defined as all named chief investigators except for the primary investigator. An absence of a named collaborator did not necessarily equate with a lack of collaboration in the conduct of the research.

Figure 4. Percentage of cancer research projects classified by number of collaborators

Opportunities for future strategic investment in cancer research

Targeted research investment – by tumour site

That some tumour sites received proportionally lower levels of direct funding despite their observed burden of disease may reflect a small research workforce for these tumours. Research funding investment could be prioritised for these cancers which have a high impact and burden of disease to deliver improvements in cancer care and outcomes.

Given the increasing research focus on genetic and epigenetic factors which are common across tumour types, there is an opportunity to accelerate discoveries across a wide range of cancer sites by fostering of funding which supports research activity across multiple tumour sites.

Targeted research investment – by research category

It is estimated that more than one third of all cancers are preventable.⁴ Prevention offers the most cost-effective long-term strategy for control of cancer across the population. Several modifiable lifestyle factors, which can reduce the risk of cancer, have health benefits beyond cancer in the prevention of chronic diseases, such as cardiovascular diseases, chronic respiratory diseases and type 2 diabetes.⁴ Prevention or health services research joint funding initiatives by funders of research in different chronic diseases could build both molecular and behavioural evidence to reduce risk of cancer and other chronic diseases.

With a growing recognition that cancer survivorship needs to shift towards a chronic disease model of care, fostering survivorship and outcomes research can support development of better approaches to addressing the medical, functional and psychosocial consequences of

cancer and its treatments on survivors, and the workforce and service implications of an increasing number of people requiring survivorship care.

Translational Research

Translational research bridges the gap between basic research and the clinic in order to facilitate the transition of knowledge and discovery into therapeutics. Translational cancer research investment facilitates patient-focused research to improve the treatment and support of people affected by cancer. Rapid increases in understanding of cancer from recent technological advances has led to recognition that specific attention must be paid to the types of research activities needed to move these findings towards clinical testing and application, with translational research becoming a focus for many cancer research funding agencies.

Fostering research in the clinical, general and patient-oriented categories of translational research could facilitate bridging of the gap between new knowledge gained through research undertaken in the not translational and early translation categories and its rapid implementation into practices and policies in the health system.

Research collaborations

Collaborations in research support the sharing of knowledge and skills, as well as enhancing the efficient use of available infrastructure and resources. Collaborations can build research capacity and critical mass, bring together the best minds to expedite research and accelerate the achievement of improved cancer outcomes, and can limit potential duplication of research effort. Research funders could continue to foster research collaboration by developing and implementing funding models which value and reward collaborations.

References

1. Cancer Australia 2014. Cancer Research in Australia: an overview of funding to cancer research projects and research programs in Australia 2006-2011, Cancer Australia, Surry Hills, NSW.
2. Australian Institute of Health and Welfare & Australasian Association of Cancer Registries. 2012. Cancer in Australia: an overview, 2012. Cancer Series no. 74. Cat. no. CAN 70. Canberra: AIHW.
3. Methodology for identifying translational research using the Common Scientific Outline", ICRP (2015).
4. Cancer Australia 2015. Lifestyle Risk Factors and the Primary Prevention of Cancer. Cancer Australia, Surry Hills, NSW.

To view the full report *Cancer Research in Australia: an overview of funding to cancer research projects and programs in Australia 2006 to 2011* visit canceraustralia.gov.au