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.
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).

**Burden of Disease and DALYs**

Burden of disease (measured as Disability Adjusted Life Years, or DALYs) refers to the years of healthy life lost due to disability (YLD), or to the years of life lost due to premature death (YLL). Cancer is responsible for the largest number of years of healthy life lost in Australia through premature death or disability, and most of the total cancer burden is due to premature death.²

**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.

**The Common Scientific Outline (CSO)**

The CSO is an international classification system specific to cancer research. The CSO system uses easily applied terminology to describe and classify research by where it best fits into the cancer research continuum. Each cancer research project and program with funding allocated in 2016-2018 was classified to the CSO category that best reflected the primary focus of the research being undertaken.
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.

![Graph showing percentage of funding to cancer research projects and programs classified by translation categories](image)

**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.

![Graph showing percentage of cancer research projects classified by number of collaborators](image)

**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 that one third of all cancers are preventable. 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. 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


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