aamri

Association of Australian Medical Research Institutes

THE AAMRI REPORT 2022

Australian Medical Research Institutes and the early days of the COVID-19 pandemic: a snapshot of the sector in 2020

CONTENTS

Cover images clockwise from right: Bionics Institute; Menzies School of Health Research; Kirby Institute; Ear Science Institute; Doherty Institute.

ABOUT AAMRI

The Association of Australian Medical Research Institutes (AAMRI) is the national peak body for medical research institutes. Our mission is to achieve positive outcomes for health and medical research in Australia. Our role is to represent organisations with a central focus on health and medical research through advocacy, information provision, relationship building and member services[1]. In 2023 we will celebrate 30 years of AAMRI's achievements and milestones.

AAMRI represents 58[2] member organisations across Australia that include independent medical research institutes as well as university- and hospital-based institutes with a central focus on health and medical research. AAMRI's medical research institute members work on a broad spectrum of human health issues such as preventive health, chronic disease, mental health, immunology and the health of Aboriginal and Torres Strait Islander peoples. Their research ranges from fundamental biomedical discovery through to clinical research and the translation of research findings from bench to bedside. Together, they aim to drive innovation in healthcare to improve the lives and livelihoods of people in Australia and globally.

Baker Institute

1 https://aamri.org.au/about-us/what-we-do/
2 At the time of data collection there were 58 members.

AAMRI'S MEMBERS IN 2022: 58 MEDICAL RESEARCH INSTITUTES

AAMRI would like to welcome one new institute that has joined since the last member report in 2020, the Institute for Respiratory Health (WA).[3]

ANZAC Research Institute
ADRI Asbestos Diseases Research Institute
Monash University | ARMI Australian Regenerative Medicine Institute
Baker Heart & Diabetes Institute
Bionics Institute
Black Dog Institute
BHVI
Burnet Institute Medical Research. Practical Action.
Centenary Institute life saving research Cancer. Inflammation. Cardiovascular.
Centre for Cancer Biology
Centre for Eye Research Australia
Children's Cancer Institute
Children's Medical Research Institute Jeans for Genes
Doherty Institute
Ear Science Institute Australia
Garvan Institute of Medical Research
Griffith University Griffith Institute for Drug Discovery Queensland, Australia
Hanson Institute
Harry Perkins Institute of Medical Research
HRI Heart Research Institute
Hudson Institute of Medical Research
HMRI Hunter Medical Research Institute
ihmri illawarra health and medical research institute
Ingham Institute Applied Medical Research
IBAS Institute for Breathing and Sleep
institute for Respiratory Health
Griffith University Institute for Glycomics Queensland, Australia
Kirby Institute
Kolling Institute Bridging Medical Research and Health
Lions Eye Institute

3 Since the production of this report, AAMRI has been pleased to welcome the South Australian immunoGENomics Cancer Institute (SAiGENCI) (SA) as an additional member.


mater
research


Melanoma
Institute Australia


UNIVERSITY of TASMANIA
MENZIES
Institute for Medical Research


menzies
school of health research


MONASH
University
MONASH
BIOMEDICINE
DISCOVERY
INSTITUTE


murdoch
children's
research
institute


NARI
NATIONAL
AGEING
RESEARCH
INSTITUTE
Bringing research to life


NeuRA
Discover. Conquer. Cure.


Olivia
Newton-John
Cancer Research Institute


ory
gen


perron
institute
for neurological and
translational science


Peter Mac


QIMR Berghofer
Medical Research Institute


QUEENSLAND
eye
INSTITUTE


THE UNIVERSITY of ADELAIDE
ROBINSON
RESEARCH
INSTITUTE


SAHMRI
South Australian Health &
Medical Research Institute


SVI
St Vincent's Institute
MEDICAL RESEARCH


TELETHON
KIDS
INSTITUTE
Discover. Prevent. Cure.


THE
FLOREY
INSTITUTE OF NEUROSCIENCE & MENTAL HEALTH


The
George
Institute
for Global Health


Australian
National
University
THE JOHN CURTIN
SCHOOL OF MEDICAL
RESEARCH


The
Westmead
Institute
FOR MEDICAL RESEARCH


TRI
TRANSLATIONAL RESEARCH INSTITUTE
AUSTRALIA


MONASH
University
TURNER
INSTITUTE FOR
BRAIN AND
MENTAL HEALTH


Victor Chang
Cardiac Research Institute


WEHI
brighter together


WESLEY MEDICAL
RESEARCH
THE WESLEY HOSPITAL | ST. ANDREW'S WAR MEMORIAL HOSPITAL
THE SUNSHINE COAST PRIVATE HOSPITAL | ST. STEPHEN'S HOSPITAL


WOOLCOCK
LEADERS IN BREATHING & SLEEP RESEARCH

WELCOME FROM PROFESSOR KATHRYN NORTH AC, AAMRI PRESIDENT

Welcome to the AAMRI Report 2022. This report, based on 2020 data, provides a valuable snapshot of the workforce, financial position, research translation activities and competitive grant successes of medical research institutes in Australia. It is also our first report to capture data during the early days of the COVID-19 pandemic.

In 2020, our health and medical research sector contributed directly to the national pandemic response, while navigating challenges faced by charities and businesses across the country. These challenges include how to retain staff with falling revenue, how to maintain the health and safety of staff and students and how to maintain business continuity – including research activities – in a rapidly changing environment.

Throughout the COVID-19 pandemic, it was wonderful to witness the extraordinary research efforts and outcomes made by our members in fundamental areas such as epidemiology, testing, treatment and public health advice, which undoubtedly contributed many positive impacts to navigate our community through the pandemic.

Data collection and analysis for this report, which is produced every two years, were conducted by AAMRI, and involves significant effort by many people from across our sector.

I want to thank all our members and their dedicated staff who contributed data for such a critical piece of work for the sector.

A NOTE ABOUT DATA COLLECTED FOR THIS REPORT

Financial and research translation data refer to either the calendar year of 2020, or the financial year 2020–2021 for those MRIs that have a standard financial reporting period. Of the AAMRI members providing data for this report, there were 34 MRIs (68%) with a 2020 calendar year reporting period and 16 MRIs (32%) with a 2020–21 financial year reporting period.

NHMRC grant funding data refers to total grant funding received for financial reporting period by the organisations performing the research, rather than the organisation administering the NHMRC grant, which is often a university. Publicly available data for NHMRC expenditure by sector indicates only the administering organisations and underrepresents the expenditure for grants to the MRI sector because many MRIs administer their grants through an affiliated university.

MRFF data in this report is also represented by performing institute.

Commercialisation data collected by AAMRI corresponds to the financial reporting year of the institute and is either calendar year 2020 or the financial year 2020–2021.

MEDICAL RESEARCH INSTITUTES IN AUSTRALIA: WHO THEY ARE AND WHAT THEY DO

THE AUSTRALIAN MEDICAL RESEARCH INSTITUTE WORKFORCE

Perron Institute

A dynamic workforce committed to improving human health

Medical research institutes bring together researchers, corporate leadership and support services staff into a diverse and exciting workplace of professionals who are committed to medical research and better health outcomes for everyone.

Research staff and students are supported by professional services teams with a diverse set of skills in areas such as business development, education, information technology, finances, and people and culture (human resources).

Figure 1: Staff, students, researchers and professionals with a broad range of expertise make up the medical research institute workforce[4].

42%
Research staff

Includes:

Researchers at all career stages including junior postdoctoral staff to mid-career scientists through to senior medical researchers

Technical staff (research laboratory)

19%
Research students

Includes:

PhD and research Masters students (higher degree research students)

17%
Professional services staff

Includes:

Professional staff in MRI services such as people and culture (human resources), IT, finance, business development

Executive staff

21%
Other staff and students

Includes:

International staff and students

Visiting staff, including researchers and clinician-researchers

Undergraduate students on short-term research placements

RESEARCHERS COMPRISE **60%** OF THE MRI WORKFORCE

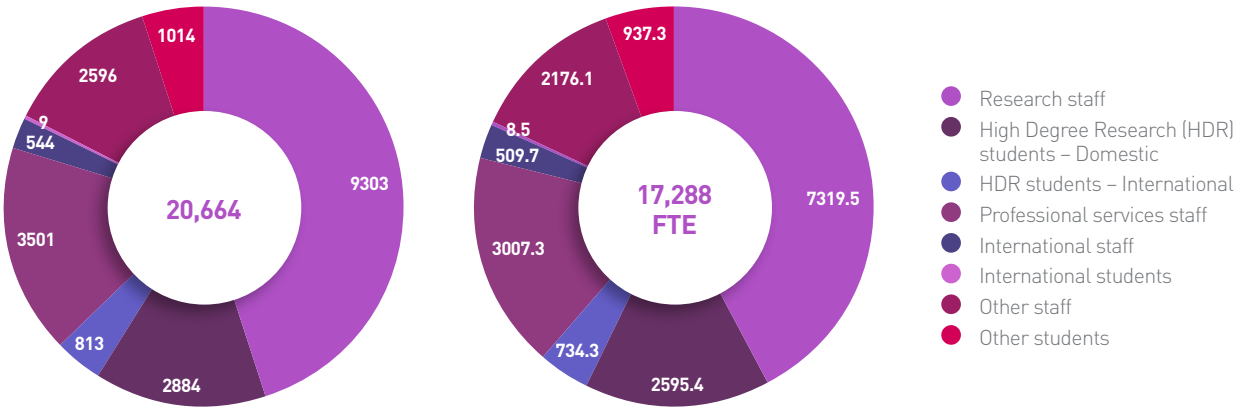
4 Proportions of each workforce category represent the sector as at 1 July, 2021.

Australia's medical research institute sector has more than 20,000 staff and students, including 13,000 researchers.

The total medical research institute sector workforce grew by 4% in the last two years[5], while the independent medical research institute workforce increased by 7.5% in the same period[6].

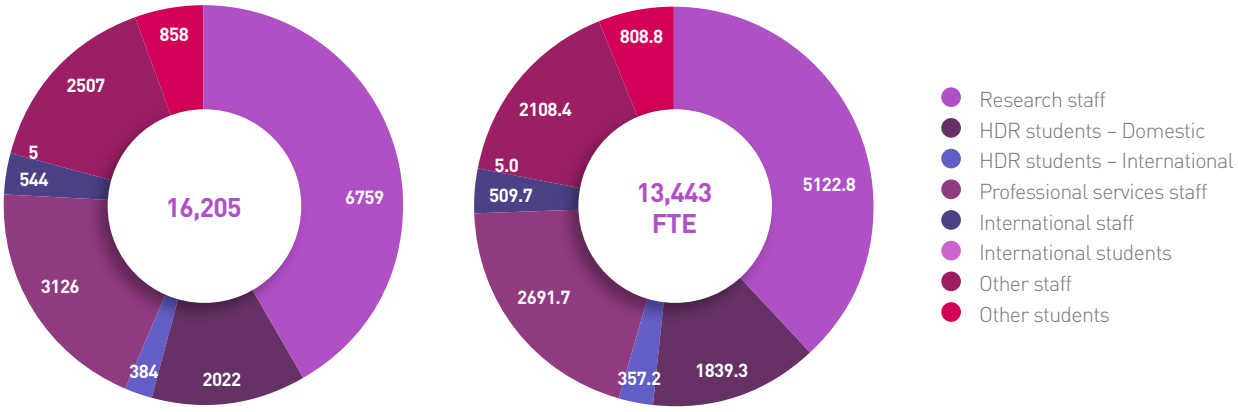
Figure 2: The medical research institute workforce as at 1 July 2021, by personnel category[7].

ALL MEDICAL RESEARCH INSTITUTES



Total MRI workforce (headcount) **Total MRI workforce (FTE)**

INDEPENDENT MEDICAL RESEARCH INSTITUTES



Total independent MRI workforce (headcount) **Total independent MRI workforce (FTE)**

5 By full time equivalent (FTE). Data for the MRI workforce includes all AAMRI members (independent and non-independent MRIs): 56 (of 56) institutes (2019), 56 (of 58) institutes (2021).
6 By full time equivalent (FTE). Data includes 43 (of 44) independent institutes.
7 AAMRI data includes 56 (of 58) institutes (43 of 44 independent institutes) by headcount or FTE, as indicated. Definitions of workforce categories are given in the Appendix. Please note that Peter MacCallum Cancer Centre has been included as an independent institute for the purposes of this report.

Women represent 60% of the medical research institute workforce and hold only 44% of senior positions.

Gender inequality has been recognised widely throughout the science, technology, engineering, mathematics and medicine (STEMM) workforce, with women more likely to exit the workforce as careers progress. AAMRI is committed to advancing gender equity, diversity and inclusion (GEDI) in the medical research sector.

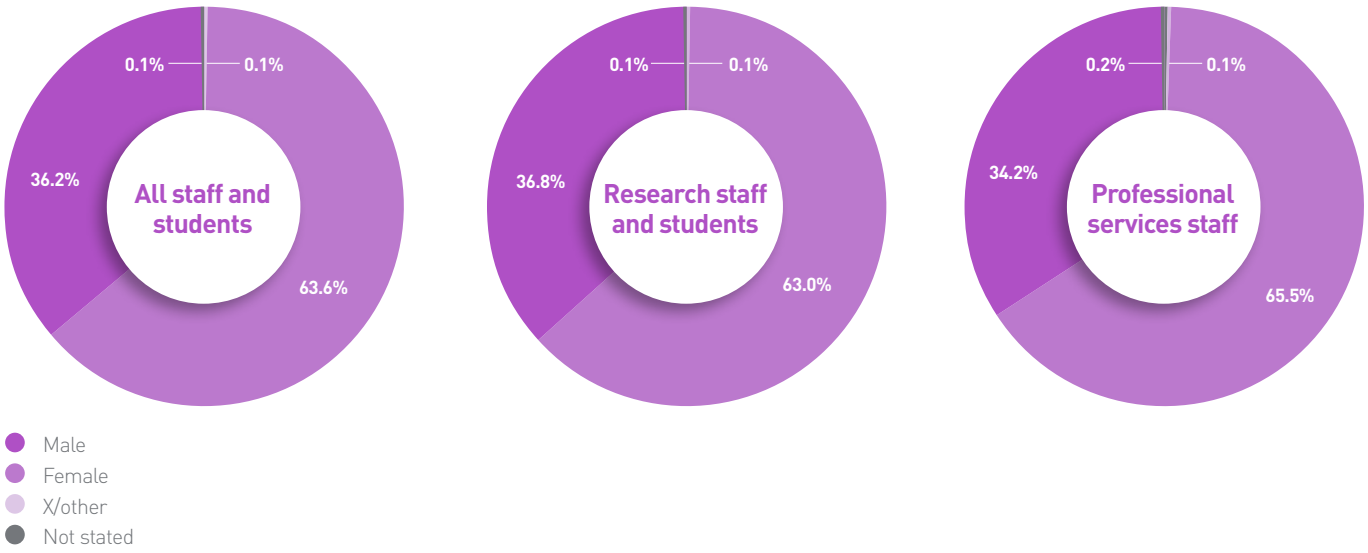
In December 2021, AAMRI launched our five-year strategy and action plan which sets out a path to advance gender equity, diversity and inclusion in the medical research institute sector in focussing on four priority areas[8]:

1. Redefining measures of success and merit for greater diversity and inclusion.
2. Enabling mechanisms for gender equity in advancement and promotion.
3. Addressing sexual harassment and promoting safe workplaces.
4. Addressing inequities in health research.

A key component of the AAMRI GEDI strategy is tracking progress towards equity in our medical research institute workforce through data collection and analysis.

AAMRI conducted a study of gender balance in the medical research institute workforce for the first time in 2018[9] and reports on the progress every two years.

Figure 3: Gender balance in the medical research institute workforce at 1 July, 2021.

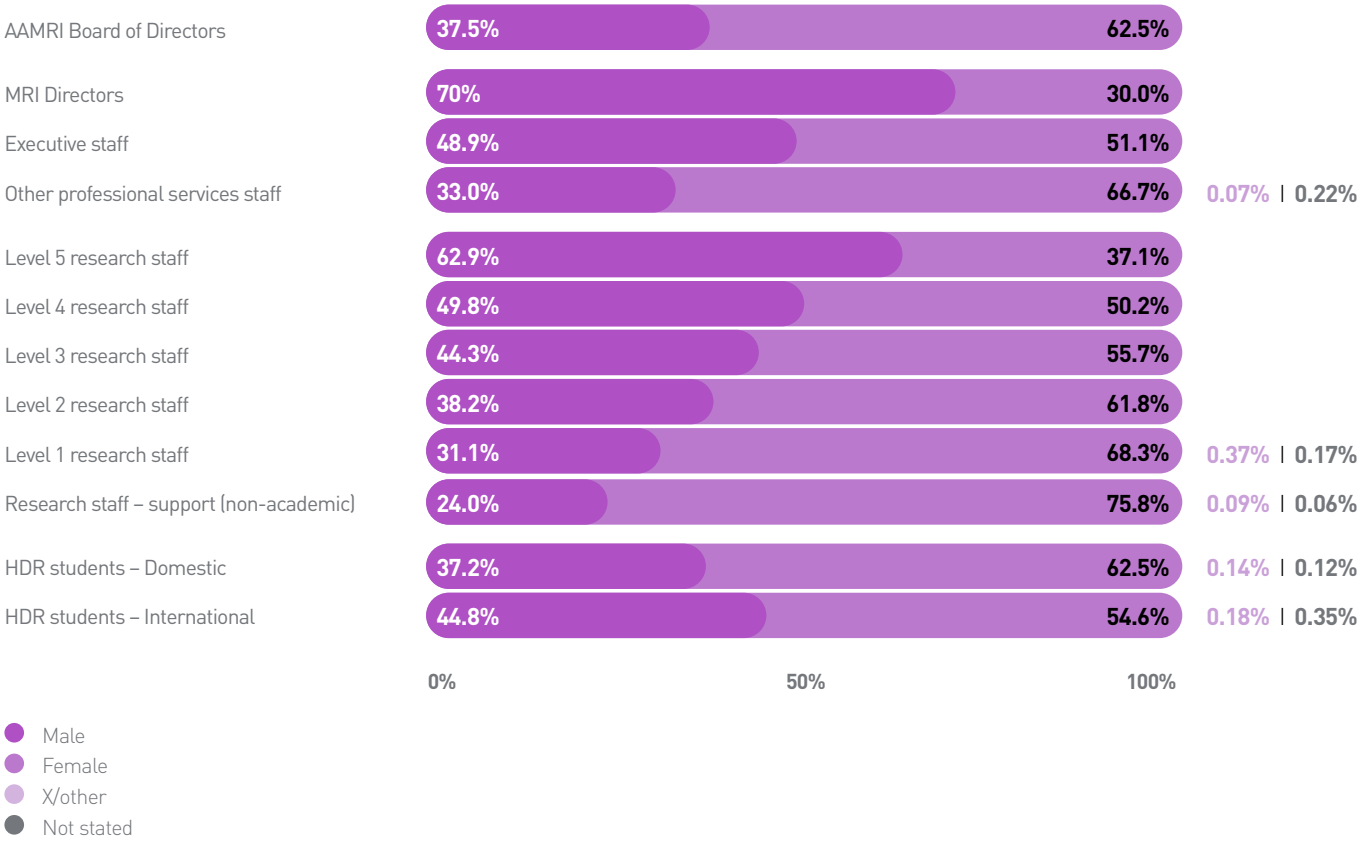


8 AAMRI's GEDI Strategy and Action Plan is available on the AAMRI website: https://www.aamri.org.au/about-us/equality-diversity-and-inclusion-at-aamri/aamri-gedi-strategy-action-plan/.

9 AAMRI (2018) *Australia's Medical Research Institute Snapshot*, available at: https://aamri.org.au/aamri-member-report/.

There was a 3% increase in senior positions[10] held by women in the medical research institute sector from 2019 to 2021.

Figure 4: Gender composition of AAMRI leadership and the medical research institute workforce at 1 July, by seniority.



10 "Senior positions" includes Directors, Executive Staff, Level 5 and Level 4 Research Staff.

First Nations people are likely underrepresented in the medical research institute workforce.

For the first time in 2021, AAMRI asked members to provide data on the number of Aboriginal and Torres Strait Islander staff and students who are working at their institutes.

Of medical research institutes reporting workforce data to AAMRI in 2021, about one third of AAMRI member institutes (21 institutes, 36% members) reported First Nations staff and/or students working at AAMRI member institutes.

In total, there were at least 263 First Nations staff and 27 First Nations students reported to be working at the institutes. This is less than 1% of staff and students in the MRI workforce (by FTE), which is well under half the proportion of Aboriginal and/or Torres Strait Islander people in the Australian population (3.2%)[11].

About two thirds of AAMRI's member institutes reported either that no First Nations staff or students (FTE or headcount) worked there, or that these data were not available. It is not clear whether some institutes may have reported zero because no First Nations staff or students work there or because these data were not available.

It is possible that there are more people within the MRI workforce who identify as Aboriginal and/or Torres Strait Islander and have not been captured in institute workforce data.

Table 1: First Nations staff and students in the MRI workforce in 2021[12].

	First Nations staff	Proportion of total MRI staff	First Nations students	Proportion of total students at MRIs
FTE	108.41	0.83%	17.5	0.41%
Headcount	263	1.65%	27	0.57%

11 Australian Bureau of Statistics, data provided through the 2021 census available at: https://www.abs.gov.au/statistics/people/people-and-communities/snapshot-australia/2021.

12 Data include 21 MRIs who reported non-zero responses for these data in the 2021 survey.

IMPACT OF COVID-19 ON THE MEDICAL RESEARCH WORKFORCE

During the early stages of the pandemic in 2020, medical research institutes faced challenges similar to those experienced by many employers right across the country, working to retain staff under the financial stresses of widespread economic downturn.

Early observations of the broader research workforce during 2020 identified several groups that were likely to be disproportionately impacted by the COVID-19 pandemic. These groups, which often overlap, included:

Early and mid-career researchers: due to a range of factors from impacts of home schooling and reduced access to work on site to reduction in philanthropy income, which is a common source of salary support for this group within the sector.

Women researchers: who were often responsible for caring duties in the home, reducing the time available for research.

International staff and students: migration to Australia was on hold for several years while the Australian borders were closed, stopping recruitment of new international staff and students and the return of staff and students caught overseas.

Analysis of the medical research institute workforce has shown that Australian Government stimulus was crucial for retaining staff through the pandemic. Sector-wide, there are now more than 20,000 staff and students, which represents a 4% increase in the medical research institute workforce since July 2019. However, further analysis reveals that this net growth was predominantly from independent medical research institutes.

This is most likely because independent medical research institutes that experienced a drop in revenue were able to access COVID-19 financial support through the Australian Government's JobKeeper scheme. The JobKeeper program provided some welcome interim relief to many institutes, with over 6,600 staff members in the MRI sector supported by JobKeeper for some or all of the 12 months it was available.

There was no equivalent level of support for universities and hospitals, the parent organisations for AAMRI's non-independent institute members, which likely led to major difficulties in retaining their workforce, particularly professional services and other staff not supported by government grants.

In the face of these challenges, the medical research institute sector maintained their commitment to gender equity and saw a 3% increase in senior positions held by women.

REVENUE AND GRANT FUNDING ACROSS AUSTRALIAN MEDICAL RESEARCH INSTITUTES

WEHI

Medical research institute revenue comes from a variety of sources, including federal and state governments, trusts and foundations, bequests and donations, fundraising and commercial income.

Their income must be able to cover the full costs of conducting medical research, which includes both:

- **the direct costs of research** (research expenditure) – research staff salaries and costs of consumables used in experiments, and
- **the indirect costs of research** associated with the operations of the institute including systemic research costs such as electricity, laboratory equipment, research facilities and services, research governance, administration and support services.

Depending on the source, revenue may be associated with certain conditions that can restrict how it is spent. This is common for government grants, which has driven research organisations to seek diverse sources of income to support and fully fund research.

The medical research institute sector is particularly reliant on non-government revenue sources, which accounted for more than 60% of the sector's income in 2018[13] and in 2020. This includes substantial philanthropy and commercial income which can then be used to fund research. Medical research institutes often report "other revenue", usually one-off income such as sale of a large asset, income from one-off schemes and cost recovery from another source that would not be reported in the other categories.

Figure 5: Examples of MRI revenue sources and expenditure activities.

MRI REVENUE SOURCES

RESEARCH GRANTS Competitive and non-competitive from government and charity sources	**PHILANTHROPY** Fundraising, bequests, donations	**COMMERCIAL INCOME**	**OTHER INCOME** including investments or providing research and clinical services	**INCOME FOR INDIRECT COSTS** (from dedicated schemes)

MRI EXPENDITURE ON RESEARCH

RESEARCH (DIRECT) COSTS INCLUDING STAFF Directly related to conducting research	**INDIRECT COSTS OF RESEARCH** Costs of staff, services, maintenance and facilities that support research activities and translation

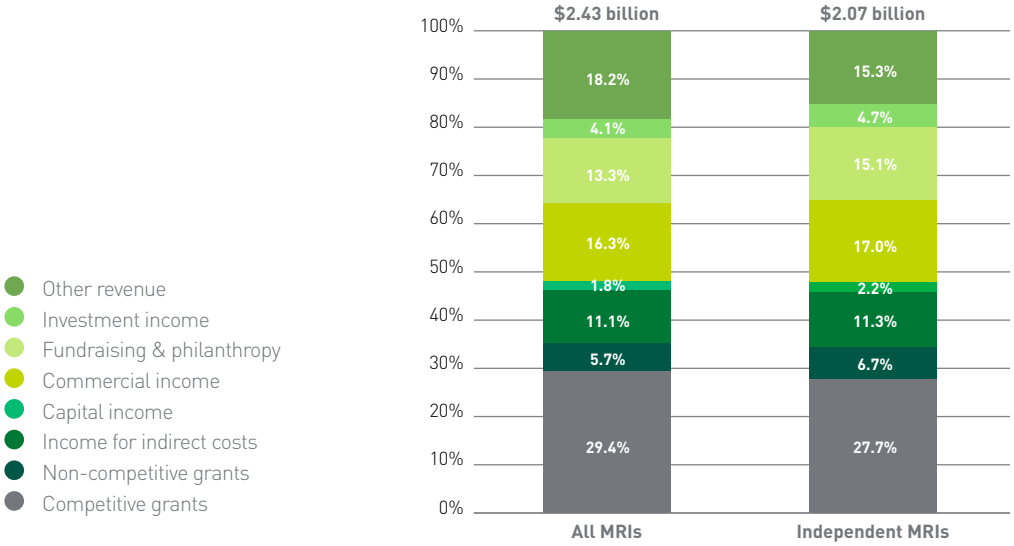
13 AAMRI (2018) *Australia's Medical Research Institute Snapshot*, available at: https://aamri.org.au/aamri-member-report/.

Revenue for the medical research institute sector was $2.43 billion in 2020.

Medical research institutes continued to draw income from a diverse range of sources to fund both research and research support activities[14].

Approximately one third of total sector income continues to be from competitive grants[15], from both government and non-government sources[16]. Commercial income and fundraising and philanthropy are also major sources of revenue, contributing approximately one third of the sector's total income.

Figure 6: Revenue profile by medical research institutes in 2020, by funding source[17].



14 Revenue recorded as "other" in 2020 includes one-off COVID-19 support that some independent institutes received through the Australian Government JobKeeper scheme during the reporting period.

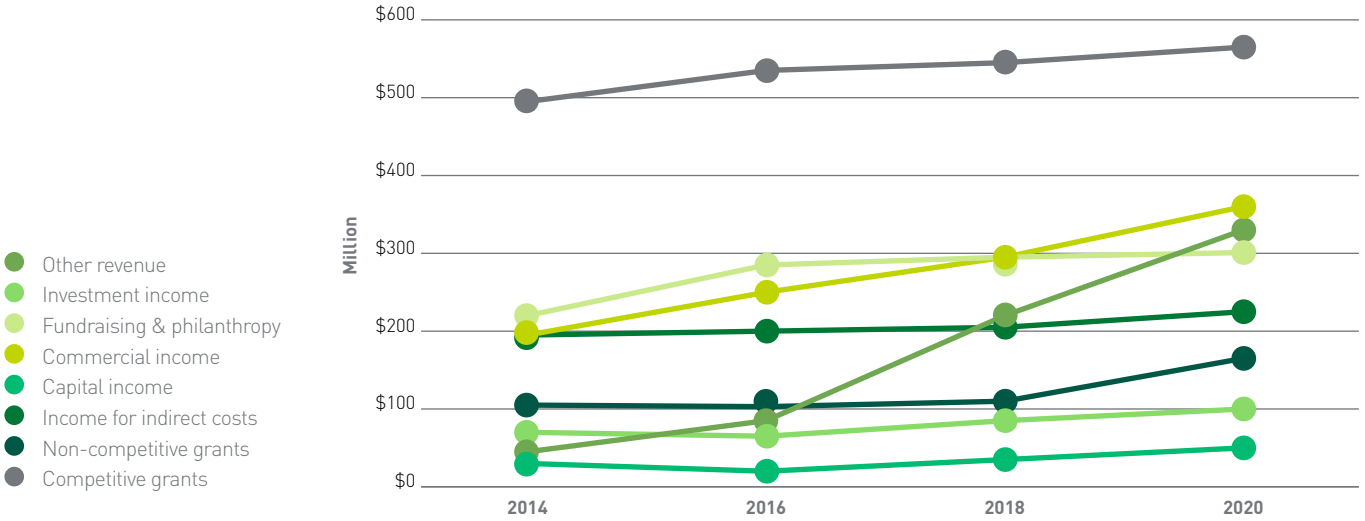
15 This includes income from major government grant schemes such as the National Health and Medical Research Council (NHMRC), Medical Research Future Fund (MRFF) and the Australian Research Council (ARC) as well as non-government competitive grants such as those provided by Trusts and Foundations.

16 Reporting year for AAMRI members is either calendar year 2020 or financial year 2020–21.

17 Data includes 50 (of 58) AAMRI member institutes for "All medical research institutes" and 42 (of 44) AAMRI member independent institutes for "independent medical research institutes". Definitions of revenue categories are provided in the Appendix.

All categories of revenue increased for independent MRIs between 2018 and 2020, with the total revenue increasing by around 17%.

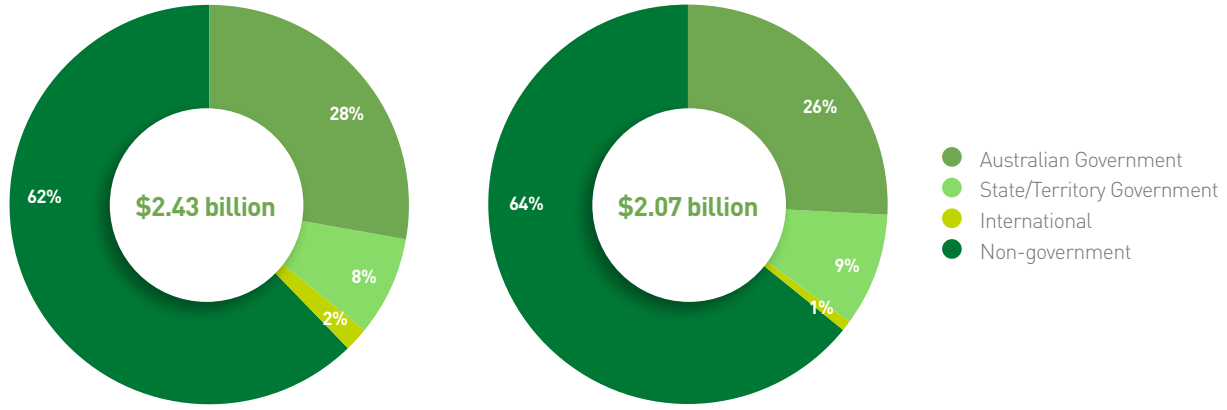
Figure 7: Trends in revenue for independent medical research institutes from 2014 to 2020, by source, with



Number of institutes included	36	36	39	42

Over 60% of medical research institutes' revenue in 2020 was from non-government sources, equating to more than $1.5 billion.

Figure 8: Proportion of government, non-government and international revenue received by medical research institutes in 2020, by source[18,19].



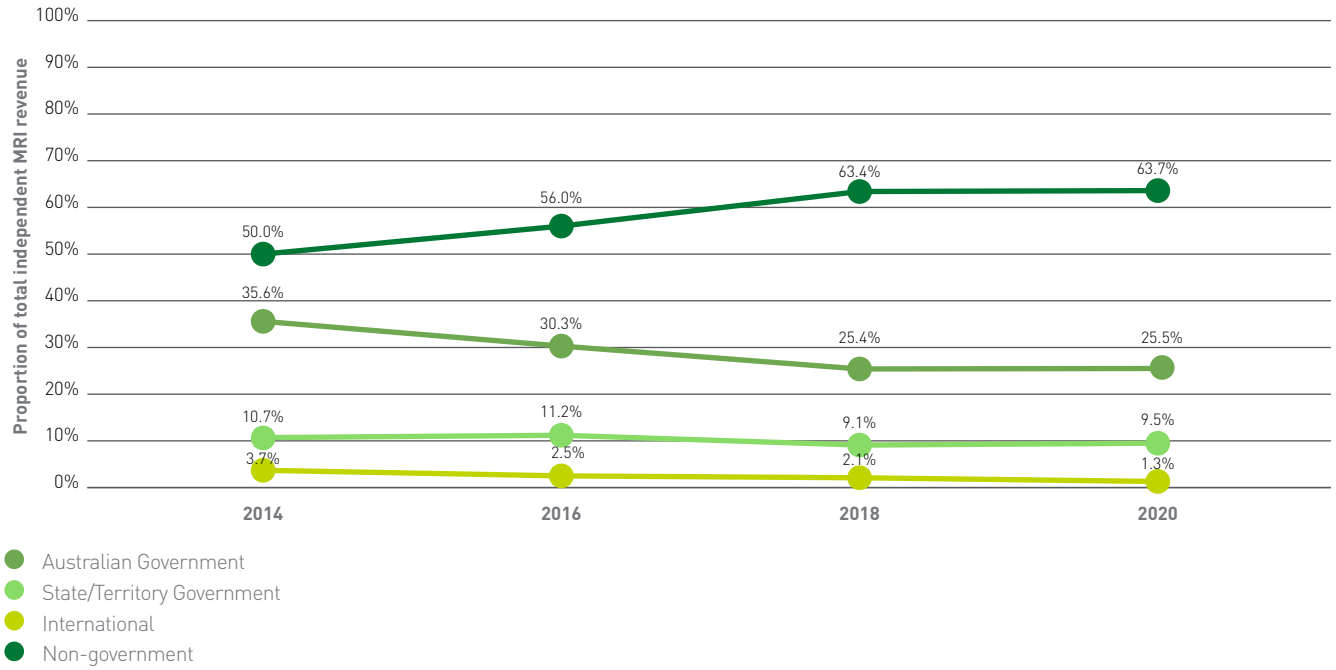
18 Data includes 50 institutes (42 independent institutes and 8 non-independent institutes).
19 Funding provided through the JobKeeper scheme as one-off financial support through the COVID-19 pandemic is not captured in Australian Government revenue for 2020.

For independent medical research institutes, receipt of Australian Government funding over the last 8 years has declined while the proportion of non-government revenue has grown.

While there is a clear trend towards increasing non-government and decreasing Australian Government revenue, there are a number of factors that may disrupt this trend going forward:

- **Research funding available from the Australian Government is increasing** now that the Medical Research Future Fund is providing about $650 million per year to the research sector. These funds are likely to flow to the medical research institute sector and be captured in future AAMRI surveys.
- **The size of the funding pool from non-government sources is largely unknown**. The two major sources of non-government revenue are commercial income and fundraising and philanthropy. However, it is unclear whether these sources are nearing their limits for Australian medical research institutes if there are no significant shifts in the funding landscape.
- **There could be increases in funding to medical research by state or territory government or international sources on the horizon**. The COVID-19 pandemic has spurred a renewed interest in the importance of medical research for improving the health of the population. This has raised medical research as a funding priority for many nations including Australia and will likely be reflected in funding commitments at several levels of government across the world.

Figure 9: Proportion of government, non-government and international revenue for independent medical research institutes from 2014–2020, by source.



Competitive grants contribute about one third of total revenue for medical research institutes.

There are several major funding sources for competitive research grants including:

- **Large Federal government schemes** such as National Health and Medical Research Council (NHMRC), Medical Research Future Fund (MRFF) and the Australian Research Council (ARC)
- **Smaller funding schemes from state governments and philanthropic sources** such as those run by trusts and foundations
- **International funding schemes from a variety of sources**. For example, large philanthropic organisations such as the Bill and Melinda Gates Foundation (USA) and Wellcome Trust (UK).

Historically, more than half of competitive grant income for the medical research institute sector is from NHMRC funding schemes.

In recent years, the MRFF has emerged as the second major government funder of health and medical research, now providing around $650 million per year in funding for health and medical research and its translation.

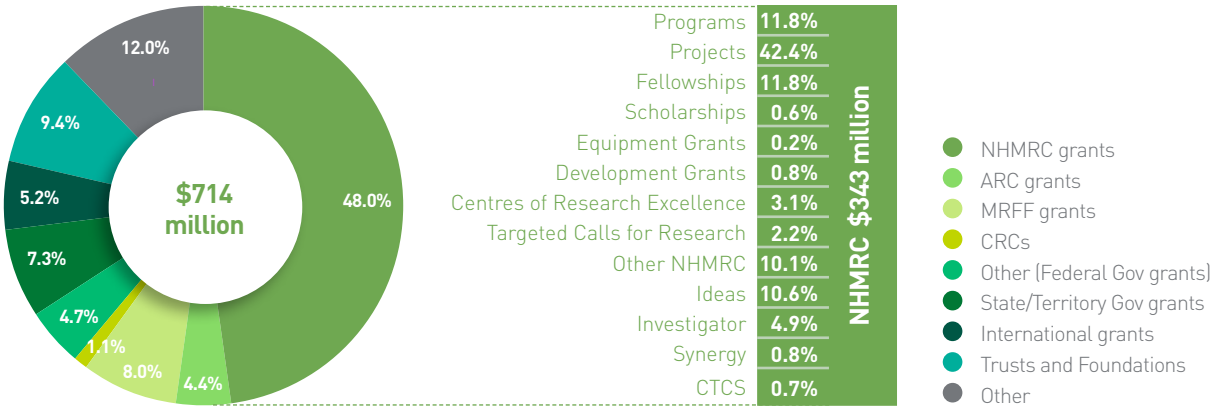
Governments have also provided additional funding during the pandemic for research into COVID-19 through both competitive and non-competitive schemes.

The medical research institute sector received a total of $714 million in competitive grant income in 2020, an increase of 7.4% since 2018.

Of the $714 million total competitive grant income to the medical research institute sector:

- About one third (31.7%, $226m) was from NHMRC legacy schemes, predominantly Project grants (20.3%, $145m). Legacy schemes are those from the previous grant program, last awarded in 2018.
- About 16% ($115m) was from schemes in the current NHMRC program, including about half (8%, $58m) from new schemes introduced in 2019 (Ideas, Investigator, Synergy and Clinical Trials and Cohort Studies Grants)
- About 8% of competitive grant income was from MRFF grant schemes, with the majority from competitive schemes
- About 9% of total competitive grant income was from competitive Trusts and Foundations Grants.

Figure 10: Total competitive NHMRC grant income received by medical research institutes in 2020 scheme[20].



20 Data includes 50 (of 58) institutes.

Medical research institutes were awarded 135 grants and $208 million through the Medical Research Future Fund in 2020.

Of the 76 grants awarded to medical research institutes as lead applicant, there were 17 awarded for COVID-19 related research in five of the seven grant opportunities.

Table 2: Summary of Medical Research Future Fund grants and funding awarded to medical research institutes in 2020[21,22].

	Grants awarded as lead applicant	Grants awarded as co-applicant	Funding awarded to medical research institutes ($)
COVID-19 related competitive opportunities	**17**	**15**	**$32,950,754**
2020 Rare Cancers, Rare Diseases and Unmet Need – COVID-19	4	0	$10,316,816
2020 Communication Strategies and Approaches during Outbreaks	0	0	–
2020 Antiviral Development for COVID-19	6	0	$6,346,896
2020 Respiratory Medicine Clinical Trials Research on COVID-19	4	5	$6,032,875
2020 COVID-19 Vaccine (Candidate) Research	1	5	$6,316,116
2020 COVID-19 Mental Health Research	0	3	$945,299
2020 COVID-19 Immunological Studies	2	2	$2,992,752
General competitive opportunities	**59**	**44**	**$65,533,769**
2020 Bushfire Impact	2	0	$1,396,214
2020 Stem Cell Therapies	7	11	$10,836,345
2020 Traumatic Brain Injury	1	2	$1,975,723
2020 Rapid Response Digital Health Infrastructure	0	0	–
2020 Rare Cancers, Rare Diseases and Unmet Need – General	13	3	$24,560,876
2020 Frontier Health and Medical Research	4	5	$3,196,394
2020 International Clinical Trial Collaborations	2	1	$2,780,147
2020 Medicinal Cannabis Clinical Trials	0	0	$1,526,796
2020 Silicosis Research	2	0	$1,311,607
2020 Primary Health Care Research	2	0	$3,246,049
2020 Mental Health Research	0	4	$11,998,908
2020 Maternal Health and First 2000 Days, Exercise and Nutrition and Early Childhood	1	2	$704,710
2020 Efficient Use of Existing Medicines	1	0	$2,000,000
All other 2020 MRFF Grants including other competitive grants (including pre-qualified) and targeted grant opportunities	**24**	**16**	**$110,230,486**
TOTAL	**76**	**59**	**$208,715,009**

21 Data includes 53 institutes, where 28 reported applications or grants awarded either as lead applicant or co-applicant.
22 Data for MRFF funding was collected only for grants awarded in the 2020 calendar.

IMPACT OF COVID-19 ON MEDICAL RESEARCH INSTITUTE REVENUE AND GRANT FUNDING

The economic downturn brought on by the response to COVID-19 in 2020 led to immediate financial stress for the medical research sector.

The extent and type of financial impact was related to their main revenue sources. Government grant funding was mostly stable and not immediately susceptible to economic fluctuations, unlike commercial revenue, fundraising and philanthropy income and endowment returns. While there were declines in some revenue sources, there were also new sources of revenue available through COVID-19 support schemes.

Analysis has shown that the medical research institute sector during the early stages of the pandemic fared quite well. There was little apparent immediate impact of the pandemic-induced downturn on the sector's total revenue, with a 6% increase since 2018 and growth observed in all major revenue categories. Independent medical research institutes, which represent approximately three quarters of the sector's workforce, had a 17% increase since 2018 (i.e. pre-pandemic).

It is likely that independent institutes were able to better deal with the financial stresses in this early period with support through the Australian Government pandemic support JobKeeper scheme. About 70% of AAMRI's independent members were eligible for phase 1 of JobKeeper (March to September 2020), with many of these institutes continuing their eligibility through the 12 months the scheme was in place. AAMRI has estimated the scheme provided about $150 million to the sector over the 12 months that it was in place.

Meanwhile, some institutes including non-independent medical research institutes were not eligible for JobKeeper support but could access other sources of COVID-19 funding from federal and state or territory governments. For example, the university Research Support Program (RSP) received an additional $1 billion in support from the Australian Government in 2020, which could flow to institutes with close financial ties to universities.

The proportion of total revenue from non-government sources is now more than 60%, with major sources continuing to be commercial income and fundraising and philanthropy.

A total of $714 million in competitive grant income was awarded to medical research institutes in 2020, representing an increase of 4.2% since 2018. 17 grants were awarded to medical research institutes as lead applicant for COVID-19 related research.

No obvious impacts on revenue in locations with tougher restrictions

There have been concerns that, depending on their severity, COVID-19 restrictions could have led to differing impacts in different jurisdictions. In AAMRI's analysis, Victorian institutes that suffered the most severe restrictions continued to raise the largest proportion of revenue of all states or territories, above their proportional share of the workforce, during the early days of the pandemic.

THE FULL COSTS OF MEDICAL RESEARCH

Heart Research Institute

The challenge of funding the full costs of research

The indirect costs of research are incurred by institutes in providing support services and facilities necessary to carry out research, and increasingly, they include costs for providing expertise and resources for the translation of research (for e.g., commercialisation).

With many funding sources tied to specific activities (research, indirect costs, capital etc.) the research funding system has become overly complex and fractured, further exacerbated by the impacts of the COVID-19 pandemic. This presents ongoing challenges for medical research institutes and other research organisations as they continue to support world-class research.

Generally, indirect costs of research are not covered by research grants and only partial support – around 40% – is provided through various dedicated funding schemes.

Australian Government grants for medical research cover around 70% of the direct research costs and provide no support for operational costs incurred (such as equipment, library, commercialisation costs and professional services like IT, human resources and finance). In many cases, research grants and fellowships do not fully fund researcher salaries requiring research organisations to bridge that salary gap to attract and retain the best and brightest research talent.

In 2018, the funding gap for independent medical research institutes and the indirect costs of research was just over $300 million.

For every dollar spent on research, a further 63 cents is needed to cover the indirect costs of research.[23]

This represents the largest rise in indirect costs in recent years, with an increase of 7 cents for every dollar of research expenditure from 2018 to 2020.[24]

Figure 11: The full cost of research: rate that indirect costs were incurred by independent MRIs in 2020.[25]

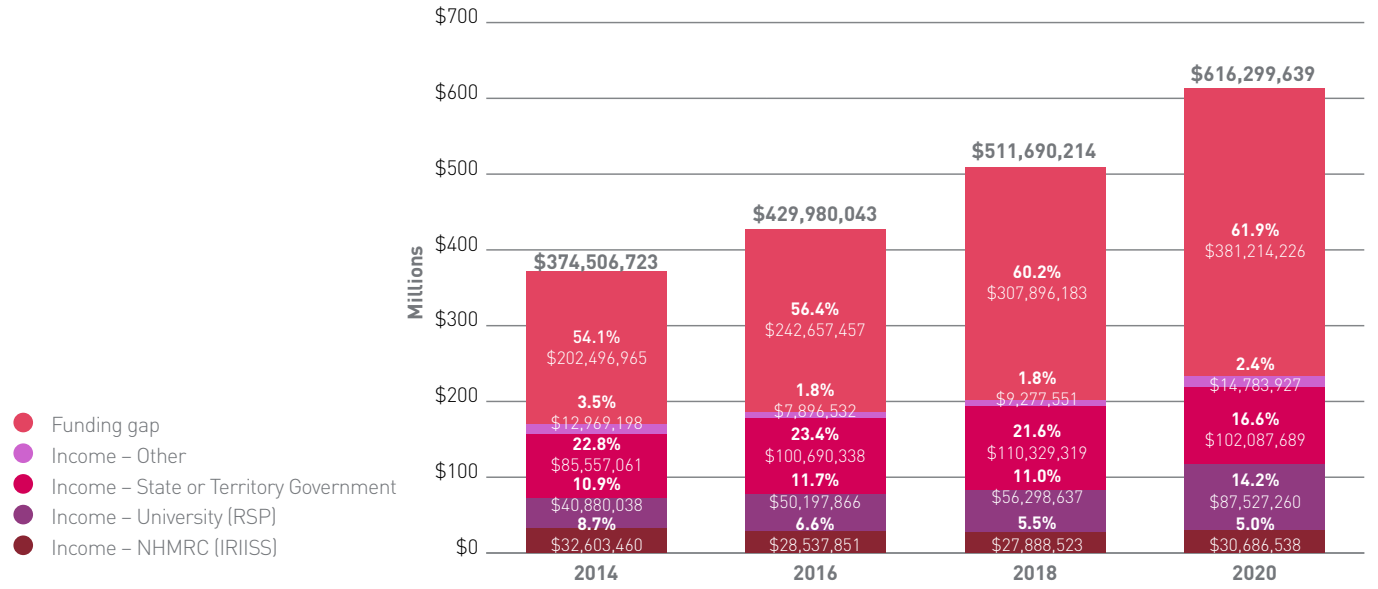
23 The indirect costs rate is calculated by the ratio of indirect costs expenditure to direct costs expenditure (research expenditure).
24 For analysis of 2014, 2016 and 2018, see past AAMRI Member Reports, available at aamri.org.au.
25 Data includes 40 (of 44) independent institutes.

In 2020, independent medical research institutes needed to find an additional $381 million to cover the indirect costs of research.

The funding gap for indirect costs of research has been growing since AAMRI's first survey captured these data in 2014.

Independent MRIs received less than 40% of the funding needed to cover the indirect costs of research in 2020, which left a funding gap of $381 million.

Figure 12: Funding gap for indirect costs of research for independent medical research institutes from 2014 to 2020.

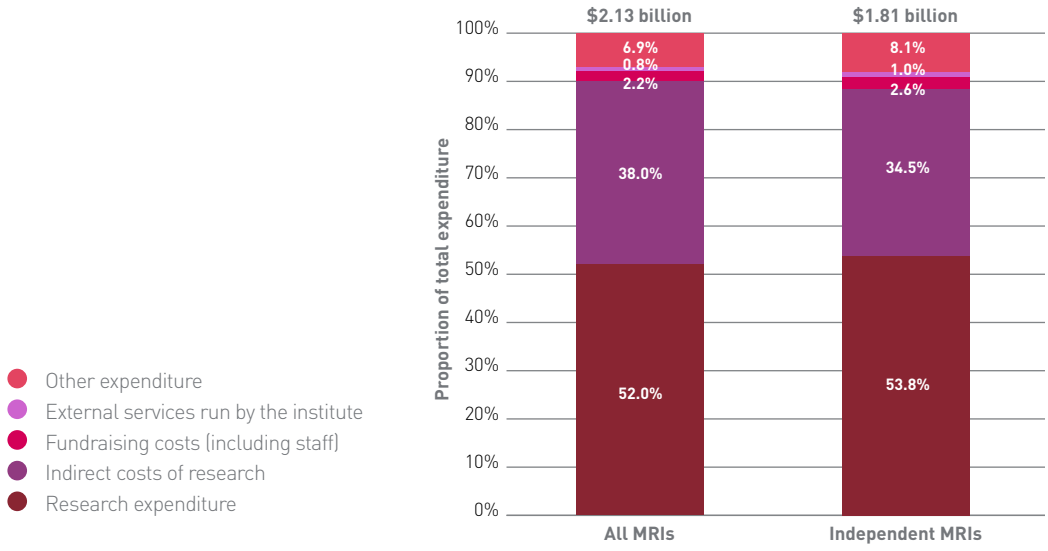


	2014	2016	2018	2020
Number of institutes included	36	35	39	40

In 2020, total expenditure for the Australian medical research institute sector was $2.13 billion.

Total expenditure increased by 6.1% for the medical research institute sector as a whole from 2018 to 2020, while for the independent medical research institute sector total expenditure increased by nearly 11%.

Figure 13: Expenditure profiles for the medical research institute sector in 2020, by activity[26].



26 Data includes 48 institutes (including 40 independent institutes).

THE IMPACT OF COVID-19 ON THE FULL COSTS OF MEDICAL RESEARCH INSTITUTES AND THEIR EXPENDITURE

The financial pressures caused by the COVID-19 pandemic initially placed major sources of indirect costs funding under threat, but also provided new sources of revenue. For independent institutes this was immediate, with drops in philanthropy, commercial income and endowment returns early in 2020. A new source of revenue was the financial support provided by the Australian Government through JobKeeper.

Increases in indirect costs far exceeded increases in research costs

While no major impacts in the early stages of the pandemic were apparent for total expenditure, a closer look revealed that there was a far greater increase in indirect costs expenditure compared to research expenditure (direct costs). This was a much larger increase than in previous years.

The impact of COVID-19, both restrictions and new types of revenue, is one explanation for the change in the last two years. Even when restrictions were less severe, many types of research were disrupted, which could have led to far lower expenditure on research activities and consumables than in previous years before the pandemic.

For example, research involving face to face contact with patients was far less accessible and research carried out on site (such as laboratory research) was reduced while many people managed home-schooling, caring duties and their own health risks. Meanwhile, activities that contribute to indirect costs expenditure were less disrupted and required additional resources such as COVID-19-induced management of business continuity and public health and safety at the institute. There was also a funding boost for many institutes with limited spending restrictions (eg JobKeeper) that could be used for indirect costs expenditure to keep the institute running through periods of limited research activity.

Changes in indirect costs and funding are not limited to the impacts of COVID-19

Indirect costs of research continue to rise. There are likely to be contributing factors to increasing costs other than those brought on by the impacts of COVID-19 including:

- **increasing research funding available through the MRFF (for direct costs) without associated increases in indirect costs support.** It is likely that the extra $650 million in MRFF funding available per year will have a greater impact in future indirect cost analyses
- **additional costs required by institutes in 2020 to manage health and safety of staff and students** on site as well as investment required to maintain business continuity through the pandemic. Expenditure in 2020 will likely have captured the set-up costs associated with many of the new practices introduced for COVID-19 management
- **additional untied funding available in 2020 that could have enabled some institutes to invest in building new capabilities** or to establish the necessary facilities for new COVID-safe ways of conducting research. Funding provided through pandemic support has not been captured as indirect costs funding in this report, however, it could be used to fund indirect costs. This type of investment would be captured in indirect costs expenditure and may result in ongoing costs in future years.

COMMERCIALISATION AND TRANSLATION IN THE MEDICAL RESEARCH INSTITUTE SECTOR

NeuRA

Translating research discoveries into health outcomes

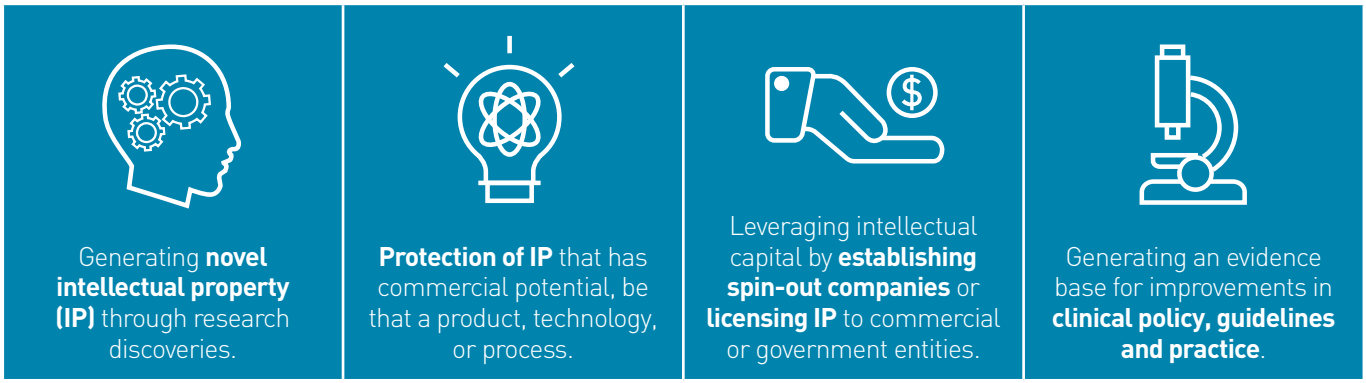
The research at Australian medical research institutes ranges from fundamental to translational research, providing unique opportunities to translate discoveries into practical health and economic outcomes. medical research institutes translate their research discoveries through both non-commercial and commercial pathways into changes to clinical guidelines, policy and practice, new therapies, devices, diagnostics – in pursuit of improving human health.

To translate research, medical research institutes need to provide funding for institute commercialisation activities such as costs of intellectual property (IP) protection (legal), business development teams and resources to establish commercial partnerships, collaborations and deals. These costs are usually captured by medical research institutes in their indirect costs of research.

Medical research institutes raise funds for commercialisation from a variety of sources. These include grants from competitive schemes specifically designed to advance research discoveries through a commercial pathway or discretionary institute funding sourced from commercial income from licencing, royalties and other returns from IP.

Medical research institutes also generate commercial income through collaboration with industry on research projects, income from commercialising their research intellectual property (IP) and a small amount through other activities such as fee-for-service research or clinical facilities. Most commercial income is directed back into the institute to support health and medical research.

Figure 14: Medical research institutes engage in activities across the research innovation pipeline.



Engaging with industry to improve human health

To catalyse commercialisation and translation, medical research institutes engage with industry throughout the innovation pipeline. Those deals are extremely diverse, ranging from collaboration agreements and licensing of technologies that further discovery, through to asset sales and licensing of developed products.

Medical research institutes and clinical trials

Medical research institutes are involved in clinical trials in a number of ways. This includes through industry-sponsored trials, provision of trials as a service, or investigator-initiated trials funded by government grant schemes. Whether they assess new therapies, diagnostics, or devices, or guide the development of clinical care, best practise, or health policy, clinical trials are vital to the translation of research discoveries into health outcomes. There has been incredible growth in the number of clinical trials being conducted in Australia in recent years[27].

27 MTPConnect (2017) *Clinical Trials in Australia*, available at https://www.mtpconnect.org.au/images/MTPConnect%202017%20Clinical%20Trials%20in%20Australia%20Report.pdf.pdf.

RESEARCH TRANSLATION IN THE MEDICAL RESEARCH INSTITUTE SECTOR

In 2020, medical research institutes were engaged in activities across the research innovation and commercialisation pipeline.

KNOWLEDGE CREATION

16 **institutes** were awarded grants to advance commercialisation of their research discoveries

PROTECTING INTELLECTUAL PROPERTY

93 **provisional patents** filed

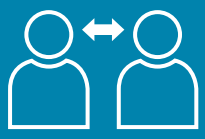
147 **national phase patents** filed

108 **patents awarded**

151 **out-licenced patents**

78 **income-generating patents**

TECHNOLOGY TRANSFER



19 **spin-out companies** from 12 institutes

301 **active licences, options and assignments (LOAs)**

CLINICAL ASSESSMENT

AAMRI member institutes were involved in a total of

1169 **clinical trials**

ENGAGING INDUSTRY

19 **institutes** reported significant commercial deals with industry

604 **clinical trials** established through research-industry collaborations

COMMERCIAL VALUE AND RETURNS

Industry collaborations and partnerships generated

$125.3 **million commercial revenue from research intellectual property**

$64.7 **million generated from LOAs** from 15 institutes

$89.7 **million in commercial revenue** for clinical trials

In 2020, there were 19 new spin-out companies established from discoveries and technologies at 12 medical research institutes.

This was nearly twice the number of new companies compared to 2018.

Funding to establish these new spin-out companies was from a range of Australian and international sources including private investors, pharma, venture capital investments and government grants. These include organisations such as MedTech Actuator[28], Swinburne University, University of Melbourne, IP Group[29], Medical Research Commercialisation Fund (now called Brandon BioCatalyst[30]), Plus Eight Accelerator[31] and UniSeed[32].

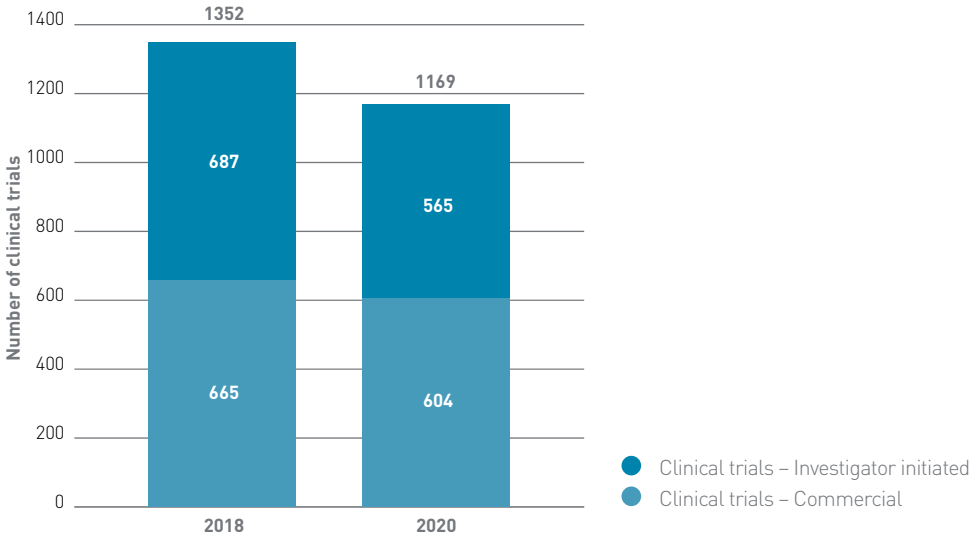
These companies are commercialising a wide range of innovative new products and technologies including:

- **Cutting-edge treatments** that use cell therapies for solid tumours and genetic therapies for motor neuron disease
- **Micro-devices for new surgical techniques** to detect plaques in coronary blood vessels or enable better IVF success for men with low sperm counts
- **New therapeutics** that reduce brain damage after stroke, cure blinding diseases of the eye like retinitis pigmentosa in children and treat chronic inflammatory diseases of the lung like asthma and chronic obstructive pulmonary disorder (COPD)
- **Technologies to assist researchers translate their discoveries** towards real world impact more rapidly and effectively including a software platform and end-to-end medical device prototype development
- **Development of a training app (for mobile devices) to improve mental health and wellbeing**.

65% of medical research institutes were engaged in active clinical trials in 2020.

From 2018 to 2020, the total number of clinical trials dropped by 13.5%. This drop was driven by Victoria, which saw clinical trials decrease by 46.5%, despite the number of clinical trials across all other states which, when combined, increased.

Figure 15: Active clinical trials at medical research institutes across Australia in 2020 and 2018.



28 https://medtechactuator.com/.
29 https://www.ipgroupanz.com/.
30 https://brandoncapital.vc/2022/03/09/medical-research-commercialisation-fund-mrcf-renamed-brandon-biocatalyst/; https://brandonbiocatalyst.com/.
31 https://pluseight.spacecubed.com/.
32 https://uniseed.com/.

THE IMPACT OF COVID-19 ON RESEARCH TRANSLATION AND COMMERCIALISATION IN THE MEDICAL RESEARCH INSTITUTE SECTOR

Early in 2020, the potential impact of COVID-19 on research commercialisation and industry engagement by researchers in the medical research institute sector was unclear. Commercial income saw an immediate decline early in the pandemic for the MRI sector, particularly for independent medical research institutes. Furthermore, the collective research and industry efforts to rapidly produce effective COVID-19 vaccines, treatments and diagnostics paved the way for overcoming existing barriers to translation.

Commercial income from research intellectual property did not drop in the reporting period, rather it almost doubled in the two-year period including the early stages of the pandemic (2018 to 2020). This is consistent with the trends in research translation and commercialisation in 2020 where activities that more readily generate income increased and those with delayed opportunity to produce income generally decreased. For example, patent submissions, an early-stage translation step, were down in 2020 compared to 2018, whereas the number of spin-out companies and institutes reporting commercial deals with industry increased since 2018.

When compared to 2018, the total number of clinical trials in 2020 dropped by 13.5%. This overall decrease was driven by a large drop in clinical trials in Victoria, reflecting impact from the early stages of the pandemic. Elsewhere in Australia, the combined number of clinical trials across states increased.

APPENDICES

South Australian Health and Medical Research Institute

MEDICAL RESEARCH INSTITUTES THAT CONTRIBUTED TO THIS REPORT

Institution Name	State	Medical research institute (MRI) type
ANZAC Research Institute	NSW	Independent MRI
Asbestos Diseases Research Institute	NSW	Independent MRI
Australian Regenerative Medicine Institute	VIC	University-based MRI
Baker Heart & Diabetes Institute	VIC	Independent MRI
Bionics Institute	VIC	Independent MRI
Black Dog Institute	NSW	Independent MRI
Burnet Institute	VIC	Independent MRI
Centenary Institute of Cancer Medicine and Cell Biology	NSW	Independent MRI
Centre for Eye Research Australia	VIC	Independent MRI
Children's Cancer Institute	NSW	Independent MRI
Children's Medical Research Institute	NSW	Independent MRI
Ear Science Institute Australia	WA	Independent MRI
GARVAN INSTITUTE OF MEDICAL RESEARCH	NSW	Independent MRI
Griffith Institute for Drug Discovery (GrIDD)	QLD	University-based MRI
Harry Perkins Institute of Medical Research	WA	Independent MRI
Hudson Institute of Medical Research	VIC	Independent MRI
Hunter Medical Research Institute	NSW	Independent MRI
Illawarra Health and Medical Research Institute	NSW	Independent MRI
Ingham Institute for Applied Medical Research	NSW	Independent MRI
Institute for Breathing and Sleep	VIC	Independent MRI
Institute for Glycomics	QLD	University-based MRI
Institute for Respiratory Health	WA	Independent MRI
John Curtin School of Medical Research	ACT	University-based MRI
Kolling Institute of Medical Research	NSW	Unincorporated joint venture
Lions Eye Institute	WA	Independent MRI
Mater Research Ltd	QLD	Independent MRI
Melanoma Institute Australia	NSW	Independent MRI
Menzies Institute for Medical Research	TAS	University-based MRI
Menzies School of Health Research	NT	Independent MRI
Monash Biomedicine Discovery Institute	VIC	University-based MRI
Murdoch Children's Research Institute	VIC	Independent MRI
National Ageing Research Institute	VIC	Independent MRI
Neuroscience Research Australia	NSW	Independent MRI
Olivia Newton-John Cancer Research Institute	VIC	Independent MRI
Orygen	VIC	Independent MRI
Perron Institute for Neurological and Translational Science	WA	Independent MRI

Institution Name	State	Medical research institute (MRI) type
Peter MacCallum Cancer Centre	VIC	Hospital
QIMR Berghofer	QLD	Independent MRI
Queensland Eye Institute	QLD	Independent MRI
Robinson Research Institute	SA	University-based MRI
South Australian Health and Medical Research Institute	SA	Independent MRI
St Vincent's Institute of Medical Research (SVI)	VIC	Independent MRI
Telethon Kids Institute	WA	Independent MRI
The Florey Institute of Neuroscience and Mental Health	VIC	Independent MRI
The George Institute for Global Health	NSW	Independent MRI
The Heart Research Institute	NSW	Independent MRI
The Kirby Institute	NSW	University-based MRI
The Peter Doherty Institute for Infection and Immunity	VIC	University-based MRI
The Westmead Institute for Medical Research	NSW	Independent MRI
Translational Research Institute	QLD	Hub
Victor Chang Cardiac Research Institute	NSW	Independent MRI
WEHI	VIC	Independent MRI
Wesley Medical Research	QLD	Independent MRI
Woolcock Institute of Medical Research	NSW	Independent MRI

EXPLANATORY NOTES

Member data included in this report

This report is based on information collected from AAMRI members from October 2021 to April 2022. Full or partial data sets were received from 56 of 58 AAMRI members in 2019 (42 of 44 independent medical research institutes (MRIs), 8 of 14 non-independent MRIs[33]).

Workforce data in this report refers to staff and students at AAMRI institutes as at 1 July 2021. Data presented in the workforce section includes 56 of 58 members for most data and fewer institutes for the gender equity, diversity and inclusion analysis, where indicated.

Financial data collected by AAMRI was supplemented by information from publicly available MRI annual financial reports in several cases. In cases where data from an MRI required for analysis was unavailable, incomplete, or in some cases causing a misrepresentation of the group, the MRI was omitted from that particular analysis where indicated. This may have resulted in minor discrepancies in totals throughout the report, depending on whether MRIs were omitted from one or other analysis.

Rounding of figures presented in Figures and Tables may have resulted in minor inconsistencies in totals.

Data reporting period

Financial and research translation data refer to either the calendar year of 2020, or the financial year 2020–2021 for those MRIs that have a standard financial reporting period. Of the AAMRI members providing data for this report, there were 34 MRIs (68%) with a 2020 calendar year reporting period and 16 MRIs (32%) with a 2020–21 financial year reporting period.

NHMRC grant funding data refers to total grant funding received for financial reporting period by the organisations performing the research, rather than the organisation administering the NHMRC grant, which is often a university. Publicly available data for NHMRC expenditure by sector indicates only the administering organisations and underrepresents the expenditure for grants to the MRI sector because many MRIs administer their grants through an affiliated university.

MRFF data in this report is also represented by performing institute.

Commercialisation data collected by AAMRI corresponds to the financial reporting year of the institute and is either calendar year 2020 or the financial year 2020–2021.

Presentation of aggregate and deidentified data

Workforce and financial data is presented for either the MRI sector (including data from all AAMRI members, independent and non-independent) or specifically for the independent MRI (independent MRIs only) sector, as indicated throughout the report.

External data sets

Grant outcomes data was sourced from the NHMRC publicly-available data sets on the NHMRC website. MRFF grant outcomes were also publicly available, sourced from the Australian Government Department of Health website.

33 Where Peter MacCallum Cancer Centre, a research-focussed hospital, has been included as an independent MRI.

CATEGORY DEFINITIONS

Workforce categories[34]

While medical research institutes classify research staff differently from universities, higher education Academic Levels will be used as a guide for defining research staff seniority. This allows a direct comparison with the higher education sector as well as helping with consistent reporting for MRIs in this survey.

Staff Category used in this report	Definitions and Examples
Research Staff	Staff employed to perform research at the institute. Includes paid or seconded staff only; 'Research Staff' includes research support staff that could potentially be paid from a research grant (e.g. NHMRC grant);.Please note that staff do not need to hold the fellowships described below to be included in the staff count. The levels are to communicate levels of seniority only. Excludes: visiting researchers & honorary appointees or affiliates, volunteers, and staff based at satellite organisations overseas who are captured in separate categories below.
Level 5 – Experienced medical research employee	Also described as: Academic Level E, NHMRC positions: Investigator Grant Leadership Level 2 (L2) or Level 3 (L3). Some staff with L2 grants may be more accurately captured as Level 4 at some institutes (see description for Level 4). Examples: Senior research staff in leadership positions within the institute e.g. Heads of Divisions, Centres or Programs within the institute.
Level 4—Experienced medical research employee	Sometimes described as: Academic Level D, NHMRC Positions: Investigator Grant Leadership Level 1 (L1), Senior Research Fellow Level B (SRFB), Investigator Grant Leadership Level 2 (L2), Principal Research Fellow (PRF). Some staff at L2 and L1 may be more accurately captured as Level 5 or Level 3, respectively (see descriptions for Level 3 and 5). Examples: Senior research staff who lead a research group e.g. Head of a research group such as a project group or lab group.
Level 3—Experienced medical research employee	Sometimes described as: Academic Level: C, NHMRC Positions: Investigator Grant Emerging Leadership 2 (EL2), Investigator Grant Leadership Level 1 (L1), Senior Research Fellow Level A (SRFA), Personnel Support Package 5 (PSP5), Career Development Fellow Level 2 (CDF2). Some staff at EL2 and L1 may be more accurately captured as Level 2 or Level 4, respectively (see descriptions for Level 2 and 4). Examples: Staff within research groups that do independent research and often have a more senior role within a group, and assist running of the groups/labs, e.g .Senior postdoctoral research Officer (SRO).
Level 2—Experienced professional medical research employee	Sometimes described as: Academic Level: B, NHMRC Positions: Investigator Grant Emerging Leadership 1 (EL1) Investigator Grant Emerging Leadership 2 (EL2), Personnel Support Packages 2,3 and 4 (PSP2, PSP3, PSP4), Career Development Fellow Level 1 (CDF1). Some staff at PSP2 and EL2 may be more accurately captured as Level 1 or Level 3, respectively (see descriptions for Level 3 and 1). Examples: Postdoctoral research staff (e.g. RO) and other research staff at similar level that may or may not hold Masters or PhD.
Level 1—Graduate professional medical research employee	Sometimes described as: Academic Level: A, NHMRC positions: Personnel Support Packages 1 and 2 (PSP1 and PSP2), NHMRC Early Career Fellowship (ECF) Training Support Package. Some staff at PSP2 may be captured as Level 2 or Level 3, respectively (see description for Level 2). Examples: Research Assistants and other technical support staff that could be supported by a research grant (NOT core facilities staff/clinical trials support).
Non-academic classification group, technical support staff	Non-academic research staff classification group; Technical support staff. Examples: Research Assistants and other technical support staff that could be supported by a research grant (NOT core facilities staff/clinical trials support).

34 Descriptions of NHMRC Fellowships, Investigator Grants and Salary levels can be found at: https://www.nhmrc.gov.au/grants-funding/apply-funding/salary-support-packages-levels-funding-commencing-2018 Department of Education Academic Levels can be found at http://highereducationstatistics.education.gov.au/.

Staff Category used in this report	Definitions and Examples
Higher Degree by Research (HDR) Students	Students conducting research and enrolled in a PhD or Masters by research program.
Domestic	Research higher degree students with Australian or New Zealand Citizenship or are an Australian Permanent Resident.
International	Research higher degree students without Australian or New Zealand Citizenship or are not an Australian Permanent Resident.
Corporate, Professional Services & Support Staff	Includes paid or seconded staff and non-research support staff. Excludes staff performing functions of the institute that are non-research related (e.g. admin staff related to clinical services provided by the institute), honorary appointees or affiliates, volunteers, and staff based at satellite organisations overseas.
Executive Staff	Non-research executive staff, including the director or Chief Executive Officer (CEO). Examples: CEO, COO, CFO, CTO, CSO, CIO, any other executive management positions.
Other corporate & support staff	Managers, Finance, HR, Admin, Grants, Fundraising, IT, PR, OH&S, animal house, laboratory support staff and facilities/maintenance staff.
Other staff & students	Staff and students not included in Research Staff, Corporate & Support Staff or Research and Higher Degree Students (domestic and international, defined above).
International staff	Includes paid or seconded expat or national staff only who are based at satellite organisations overseas.
International students	Research higher degree students based at satellite organisations overseas.
Other staff	Staff at the institute that are not included elsewhere. Examples: Honours students, under-graduate students.
Other students	Students at the institute that are not included elsewhere.
Total Workforce	Sum of Research Staff, RHD students, Support staff, International Staff, International Students, Other staff and Other students.
Researchers or Research Workforce	Sum of Research Staff and RHD students. Please note that this total is a conservative estimate of researchers at MRIs, as many of the international or other staff and students (often visiting research staff and students) are also researchers but not included in this total.
Directors, Medical Research Institutes	Director or Chief Executive Officer (CEO) of MRIs, most senior executive position at the institute.
Clinical and Allied Health Professionals	Research staff or students who are active clinical or allied health professionals, i.e. Staff & students who are both researchers and run or are involved in non-research clinical work. Examples: Clinicians, Allied Health Professionals, Genetic Counsellors, Nurses, Psychologists, Dieticians / Nutritionists.

Gender categories used in this report

AAMRI has used the Australian Government Guidelines on the Definition of Sex and Gender (2015)[35] to guide data collection categories used in the AAMRI member survey.

Gender is the distinction between male, female, and genders which are a combination of male and female, or neither male nor female, as reported by a respondent. The Gender Standard Classification has been used for this survey where:

- "male" includes adults who identify themselves as men, and children who identify themselves as boys.
- "female" includes adults who identify themselves as women, and children who identify themselves as girls.
- "X" or "other" includes adults and children who identify as non-binary, gender diverse, or with descriptors other than man/boy or woman/girl.

AAMRI has included the fourth category "gender not stated", which includes staff or students who do not wish to report their gender. Compared to previous AAMRI surveys, definitions of men and women have not changed, however "X/Other" and "gender not stated" are now reported separately (previously reported as one category). Further information is available from the Australian Bureau of Statistics (ABS) Standards for Sex and Gender variables (2016)[36].

35 Australian Government Guidelines on the Definition of Sex and Gender (2015) are available at https://www.ag.gov.au/rights-and-protections/publications/australian-government-guidelines-recognition-sex-and-gender.

36 Australian Bureau of Statistics (ABS) Standards for Sex and Gender variables (2016) is available at https://www.abs.gov.au/statistics/standards/standard-sex-and-gender-variables/2016.

CATEGORIES FOR REVENUE SOURCES

Institutes are asked to provide financial data that corresponds to their audited accounts for the reporting year.

Source (by category and subcategory)	Definitions and Examples
Competitive grant income	Received from federal, state/territory and local governments, trusts and foundations grants (competitive only), and international sources. Includes NHMRC, MRFF, ARC and CRC funding that has been awarded through competitive processes.
Non-competitive grant income	Received from federal, state/territory and local governments, trusts and foundations grants (competitive only), and international sources. Includes NHMRC, MRFF, ARC and CRC funding that has been awarded through non-competitive processes.
Income for indirect costs of research (also systemic costs of research)	Funding received from all schemes specifically for costs associated with supporting research activities through direct or indirect sources. Includes NHMRC (IRIISS), State or Territory Government support schemes and direct funding, RSP or RTP block grants, which is Australian Government funding received via agreements with affiliated universities.
NHMRC IRIISS	NHMRC Independent Research Institute Infrastructure Support Scheme (IRIISS), a Federal Government scheme providing support for systemic costs of research associated with NHMRC competitive research grants.
University Research Block Grants/Research Support Program	Income for indirect costs from affiliated universities through Research Block Grants (RBGs) or Research Support Program (RSP). RBG/RSP funds are awarded to universities from the Australian Government Department of Education. All RBG schemes and were replaced by the Research Support Program and Research Training Program in 2017. MRIs cannot receive funds directly from these schemes.
Income from State Government for indirect costs of research	Some MRIs receive state government support specifically for the indirect costs of research either through a direct agreement with the MRI or through a state government scheme (e.g. Victorian Government Operational Infrastructure Support Program; NSW Government Medical Research Support Program).
Other income for the indirect costs of research	All other income for systemic costs of research not from the Federal or State governments e.g. Some contract research or philanthropic grants include a proportion of funds for indirect costs of research associated with the project/work.
Fundraising & Philanthropy	Income from a range of non-government sources including annual giving, major gifts, bequests, non-competitive trusts and foundations grants (excludes competitive Trusts and Foundations Grants).
Commercial income	includes total commercial income.
Investment Income	income generated from investments e.g. interest
Capital income	funding received for major buildings projects.
Other income	other miscellaneous income not elsewhere classified.
Total Revenue	The sum of all revenue received by the institute in the reporting year

Financial data included in analysis of government and non-government revenue

Source (by category and subcategory)	Definitions and Examples
Australian Government	Funding received from Australian Government schemes for research activities and indirect costs of research as well as any other purpose Includes income from the Australian Government grant schemes, both competitive (eg NHMRC, ARC, MRFF, CRC) and non-competitive (eg NHMRC IRIISS, any funds received indirectly from the Department of Education Research Support Program - RSP through agreements with affiliated universities), Medical Research Future Fund income (competitive or non-competitive) and any other grants funding reported by institutes to AAMRI in categories labelled as Australian Government funding. May also include capital income from the Australian Government (if any has been reported for that year).
State/Territory Government	Funding received from any Australian state or territory government for research activities and indirect costs of research as well as any other purpose. Includes income from State Government grant schemes, both competitive and non-competitive and any other grants funding from the state and territory governments include direct funding to the institute (as reported by institutes to AAMRI). May include capital income from state or territory governments.
International sources	Revenue from competitive and non-competitive grants from International sources. This income may income from governments outside Australia (eg funding from National Institutes of Health in the USA is a government funding scheme). NB In analyses of government and non-government revenue, international is included in "non-government" revenue because the objective of the analysis is to identify income from Australian state, territory, local and federal governments.
Non-government revenue sources	All other revenue not reported as International or from government sources. Examples include non-government grants (Trusts and Foundations), fundraising and donations (Philanthropy), commercial income, investment income. All other income not captured as Australian Government, State or Territory Government or International.

Competitive funding schemes

Source (by category and subcategory)	Definitions and Examples
National Health and Medical Research Council (NHMRC) funding	Funding received by independent MRIs from NHMRC and from other administering organisations, regardless of award year for the grant. https://www.nhmrc.gov.au/funding/find-funding In the reporting year 2020, institutes received funding from legacy schemes from the previous grant program (last awarded in 2018, or 2017 in the case of Program Grants), current funding schemes (continued from the previous grant program to the new grant program) and current funding schemes introduced in the new grant program (first awarded in 2019 for first funding from 1 January 2020). Information about the grant program introduced in 2019 is available on the NHMRC website [37].
Legacy schemes	
Program Grants	Support for teams of high calibre researchers to pursue broad based, multi-disciplinary and collaborative research activities. Teams will be expected to contribute to new knowledge at a leading international level in important areas of health and medical research. The scheme is available for all research approaches relevant to better health – biomedical, clinical, public health or health services research and is typically for 5 years.
CREs	Centres of Research Excellence; support for teams of researchers to pursue collaborative research and develop capacity in clinical, population health and health services research in three streams: clinical, health services and population health.
Project Grants	Support for research that describes the investigation of a new research ideas. Single investigators or teams of up to ten Chief Investigators (CIs) are supported as well as New Investigators (NI) or early career investigators.
Fellowships	Includes all NHMRC Fellowship schemes – Research Fellowships, Career Development Fellowships, Early Career Fellowships, Clinician Fellowships, Practitioner Fellowships, Translating Research into Practice
Current schemes	
Scholarships	Includes all NHMRC PhD Scholarships
Equipment Grants	Funding to NHMRC approved Administering Institutions to facilitate the procurement of equipment designed to support high quality health and medical research, as supported by the NHMRC or other competitive grant support
Targeted Calls for Research	Includes income in 2020 from any Targeted Call (for a complete list, see the 2020 grant outcomes on the NHMRC website).
Development Grants	Financial support to individual researchers and/or research teams to undertake health and medical research within Australia at the proof-of-concept stage that specifically drives towards a commercial outcome within a foreseeable timeframe
Other	Any NHMRC income for competitive grants not elsewhere included such as Partnerships grants and other Strategic and Leveraging grants from the previous and current grant programs that has not been captured elsewhere. Excludes IRIISS funding (which is included in income for indirect costs of research).
Current schemes introduced in 2019 (funding from 1 Jan 2020)	
Ideas Grants	Supports innovative and creative research projects, and be available to researchers with bright ideas at all career stages, including early and mid-career researchers. Ideas grants are similar to Project Grants in the previous grant program. Does not fund Clinical Trials and Cohorts Studies, which are funded through a dedicated scheme (see below)
Investigator Grants	One scheme that provides the highest-performing researchers at all career stages with funding for their salary (if required) and a significant research support package. This scheme consolidated separate fellowship and research support into one grant scheme.
Synergy Grants	Provides $5 million per grant over five years for outstanding multi-disciplinary research teams to work together to answer complex questions.
Clinical Trials and Cohort Students	A dedicated funding scheme for Clinical Trials and Cohort Studies, previously funded through Project Grants.

37 https://www.nhmrc.gov.au/funding/new-grant-program.

Source (by category and subcategory)	Definitions and Examples
Australian Research Council (ARC)	Includes Future Fellowships, ARC Linkage Grants, and ARC grants on which an MRI was a partner organisation. MRIs cannot directly administer ARC grants but sometimes receive funds from ARC competitive schemes through MRI researchers' collaborations with other organisations, or because their researchers apply through a university where they have an appointment.
Discovery	Income from any grant in the Discovery scheme (including Fellowships).
Linkage	Income from any grant in the Linkage scheme.
Other	Any other income from the ARC that is not from Discovery or Linkage schemes.
Medical Research Future Fund (MRFF) [38]	
Competitive	Defined by the Department of Health as a competitive grant initiative
Targeted	Defined by the Department of Health as a competitive grant initiative
Other	Includes competitive pre-qualified grants or MRFF grants that are administered via third party programs (for example MTPConnect Biotech Horizons).
Other Commonwealth/Federal Government Grants	
Cooperative Research Centres (CRCs)	Federal Government scheme involving research-industry partnerships of multiple organisations
Other	Any other funding from the Australian Government not captured elsewhere.
Other competitive research grants	All other competitive grants from Federal Government, State/Territory Government and other sources including Trusts and Foundations grants from philanthropic sources.
International Competitive Grants	Includes funding from any competitive scheme administered by an international body.
Federal Government	All other competitive grants from Federal Government
State/Territory/Local Government	All other competitive grants from State, Territory or Local Governments
Trusts and Foundations Grants	Competitively-awarded research grants from trusts and foundations. Non-competitive trusts and foundations grants have been captured elsewhere in financial data.
Other	Any other funding from the Australian Government not captured elsewhere.

38 Each grant awarded is tagged as competitive, targeted or another category by the Department of Health in the published grant outcomes, available at: https://www.health.gov.au/resources/publications/medical-research-future-fund-mrff-grant-recipients.

Expenditure Categories

Activity (by category and subcategory)	Definitions and Examples
Research Expenditure (i.e. Direct Research Costs)	This category of expenditure includes direct research staff salaries, on-costs and salary package items; research consumables; specialised equipment purchases for research projects (included in grants); travel expenditure associated with the grants or fellowships; and scholarships provided by the MRI.
Indirect Costs of Research (i.e. Systemic Costs of Research)	Costs incurred by the MRI that are not directly related to the outcome of the grant projects but are operational activities required to support research. Expenditure on research support services and staff and other expense categories that activities are necessary to support your institute's research. **Please note that expenditure for activities that generate income was included in "other" expenditure (e.g. Fundraising, external services run by the institute).* In the 2018 AAMRI Member Report, the term "Systemic costs of research" was used to describe indirect costs.
Fundraising Costs	Costs incurred for fundraising activities (including staff salaries).
Costs of running an external service (to raise revenue)	Costs associated with running services that are housed at the MRI (e.g. clinical services, fee-for-service facilities for external clients).
Other Expenditure	All other expenditure not captured elsewhere.
Total expenditure	Sum of all expenditure categories, excluding capital expenditure.
Capital expenditure including equipment	Capital expenditure by the institute (in response to the question "What was the capital expenditure including equipment for the reporting year?". This is excluded from total expenditure.

Research Translation

Activity (by category and subcategory)	Definitions and Examples
Patent Information	Active, non-expired patents from intellectual property generated at the institute, submitted or awarded, as indicated by subcategory. Out-licenced patents and income-generating patents have been captured for the first time in the 2022 AAMRI Members Report.
Licences, Options and Assignments (LOAs)	
Active LOAs	Number of LOAs that are current (not expired or renewed) in the reporting year.
LOAs that yielded income	Number of active LOAs that yielded income, excluding patent licences that are included in the "Out-licenced patents" category.
Total income from LOAs	Total gross income received from the institute's LOAs in the reporting year.
Amount of total income from LOAs paid to other institutions or commercial entities	Amount of total gross income from LOAs that was paid to other organisations, excluding in-kind payments, fees for background intellectual property and expert advice.
Clinical Trial Activity	
Commercial Clinical Trials	Number of active commercially-sponsored clinical trials involving the institute (during the reporting year)
Investigator-initiated clinical Trials	Number of active investigator initiated trials, includes trials that are not commercially sponsored or driven by a commercial purpose (during the reporting year)
Spin-out and start up companies	Number of new companies in the reporting year that were spun out from intellectual property generated at the institute.

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