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COVID-19 Series: Report 2

The impact of COVID-19 on health and medical researchers



ABOUT RESEARCH AUSTRALIA

Research Australia is *the* national alliance representing **the entire health and medical research pipeline** from the laboratory through to the patient and the marketplace.



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THE SURVEY

The survey opened on the afternoon of Thursday 29 April and closed on Monday morning 18 May. Research Australia used its newsletters, email communications and social media to promote the survey to individual researchers and encouraged its distribution to other researchers. We received responses from 1212 individual researchers.

For further information about the questionnaire and responses to individual questions please email admin@researchaustralia.org

ACKNOWLEDGEMENTS

Research Australia acknowledges the contribution of Mia Calabritto from Macquarie University to the creation of the survey and analysis of the results.

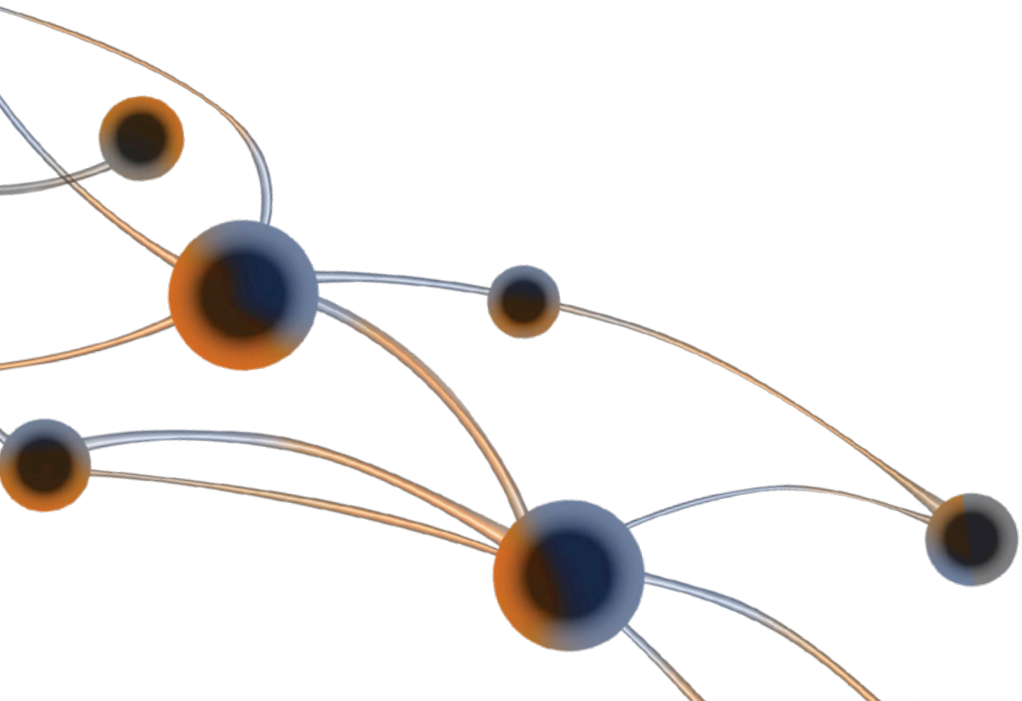
Research Australia acknowledges the assistance provided by Professor Anna Peeters, Director, Institute for Health Transformation, Deakin University and Professor Trish Livingston, Associate Dean, Research, Faculty of Health, Deakin University, in the development and analysis of the questionnaire.

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FOREWORD

The arrival of COVID-19 in Australia has disrupted the lives of all Australians, just as it has around the world, and the death toll continues to rise. In this time of global crisis, Australians have looked to health and medical researchers to help them understand the virus and mitigate its impacts. Research Australia's earlier report, *COVID-19: How Australia's health and medical researchers responded*, highlights the massive mobilisation of health and medical research in response to the pandemic. This is impressive and speaks volumes about Australia's research capability. However, no one is immune from the effects of the pandemic.

In this report, Research Australia considers the impact of COVID-19 on health and medical researchers themselves.



WHAT IS SPECIAL ABOUT THE SITUATION OF RESEARCHERS?

One of the consequences of closing Australia's borders was the effect it had on international students. The start of the university year in Australia is March; thus, when our borders closed in early 2020, many international students were unable to enter Australia to commence study.

Consequently it has had financial ramifications for Australian research and innovation. Universities have lost hundreds of millions of dollars in revenue which they normally use to fund research and subsidise the costs of undertaking government funded research, as government grants do not cover the full cost of this research. This loss of revenue is leading to job losses and disruptions in Australia's universities.

The lock down that commenced in March also had practical ramifications for research, and particularly for health and medical research. Laboratory work could not be conducted from home and so experiments had to be stopped. In many cases, these experiments, which can take weeks and/or months, will need to start again from scratch with additional funding required to enable the work to continue. Social distancing also prevented researchers from meeting with and taking samples from patients involved in clinical trials. Without access to

hospitals and clinics, many researchers struggled to recruit new participants in studies. And many international students were PhD candidates who would also be working in research teams and are now unable to assist with that research.

Collaboration is the lifeblood of so much research, and closing international borders prevented researchers travelling to Australia to collaborate.

More than 90% of the health and medical researchers surveyed believe Australia's overall response to the COVID-19 pandemic has been both timely and effective but the impact on their livelihoods and Australia's future research capacity is significant.

More than half of those surveyed are employed on fixed term contracts, with this ratio higher for early and mid-career researchers. The small percentage of permanent employees in their ranks means job security is generally poor and is exacerbated by the need to combine funding from multiple sources to fund their research. More than a tenth of researchers have a position at more than one type of organisation.

Budgets and research will be impacted and in many cases, there are large reductions that extend beyond 2020. The biggest expected impacts are delays in meeting research milestones, reductions in publications and difficulty retaining staff. Given research outcomes are systematically accumulated, it comes at an enormous opportunity cost; namely research that will never be completed, or that may not have the necessary capacity to begin again at a later date.

The survey also sought information on opportunities created by COVID-19. There is evidence of some real improvement in collaboration within and outside research organisations, improvements in the time taken to initiate new research, and greater flexibility in varying existing research to respond to new challenges and circumstances. Respondents reported only minor improvements in the responsiveness and procedures of government funding agencies, philanthropic funders and industry partners.

Nearly two thirds of respondents support a longer-term restructure of Australia's research and innovation funding framework. Only 5.4% believed such a restructure was not required. Improving the security of employment for research staff and creating reserves of funding that could be used during a pandemic or other catastrophic event to ameliorate the unique impacts on research were common proposals for reform. This is an area of advocacy Research Australia will continue to pursue.

We are pleased to present this report as part of our series on COVID-19 and invite you to consider its implications for the future of health and medical research and innovation in Australia.



ABOUT AUSTRALIA'S HEALTH AND MEDICAL RESEARCHERS

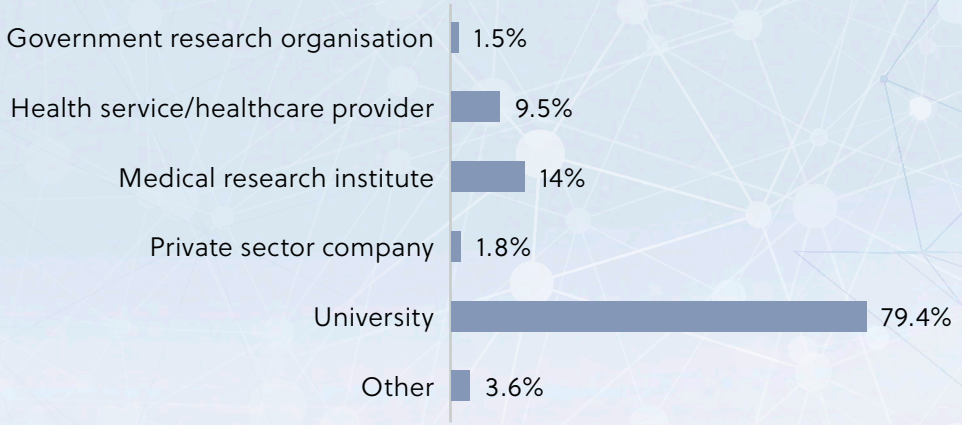
Health and medical research is conducted in a variety of different organisations: universities, medical research institutes, government agencies, private companies and hospitals and health care settings. This variety is reflected in the responses to the survey. What also stands out is how many have multiple positions across these different types of organisations.

WHERE DO THEY WORK?

The majority of respondents to the survey, 79.4.%, work at a university. Nearly one in 10 (9.8%) of this group also work for another type of organisation, with 5.8% of university researchers also working for a health care service or healthcare provider, and 3.8% working at a medical research institute.

14% of all respondents work for a medical research institute. Medical research institutes are committed to health and medical research, with many having a specialisation or expertise in a particular area. Some are independent organisations while others are affiliated with, or part of, a hospital or university.

Figure1: Where researchers work



10.6% of all researchers have a position at more than one type of organisation.



Once again, many also have other positions, with more than one quarter (26.5%) of all medical research institute researchers also working for another type of organisation. More than one in five (21.7%) also work at a university, while 7.6% also have a position with a healthcare service or healthcare provider.

9.5% of respondents were employed by a healthcare service or a health provider, including hospitals. Many of Australia's researchers are clinician researchers; these are doctors, nurses and allied health professionals who combine providing healthcare with research. Nearly half of this group (48.7%) reported having a position at a university while 11.3% of clinician researchers work for a medical research institute. In fact, less than half (42.6%) of those reported working exclusively for a health care service or health care provider.

Other respondents to the survey included researchers at private companies (1.8%) and government research organisations (1.5%).

WHAT TYPES OF RESEARCH?

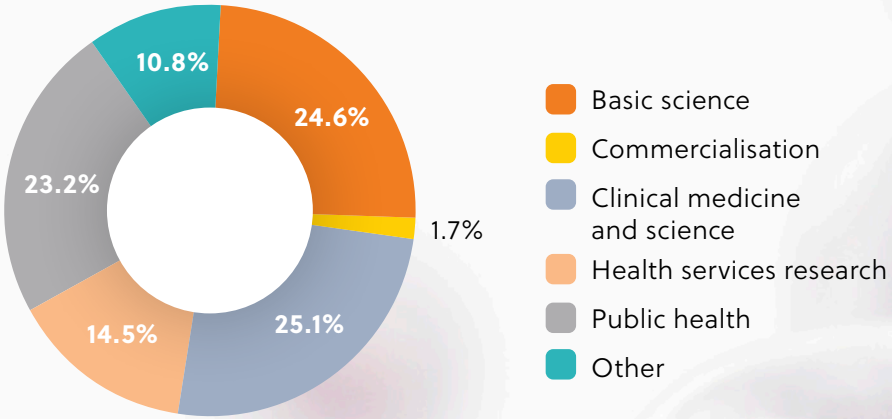
The types of research conducted by health and medical researchers are varied, and the breadth of research undertaken is reflected in the responses to our survey. Nearly one quarter (24.6%) are engaged in basic research, increasing our understanding of disease and human biology. In the context of the coronavirus pandemic this includes scientists mapping the genome of the virus and how it attacks humans.

A further quarter (25.1%) is involved in clinical medicine and science which is working to apply what we have learned to develop new treatments, vaccines and diagnostics. Nearly one quarter (23.2%) are involved in public health, including predicting how the virus will spread and the effects of different measures to prevent infection, such as handwashing and physical distancing.

14.5% are involved in health services research, including understanding how our health systems can deliver safer, higher quality and more effective care. 1.7% are involved in the commercialisation of health and medical research, helping create new medical products and devices. 10% identified themselves as conducting other types of research-individual responses included sports science, ethics and artificial intelligence.

80% of all survey respondents reported that their research had been adversely affected by COVID-19.

Figure 2: Types of research



ABOUT AUSTRALIA'S HEALTH AND MEDICAL RESEARCHERS cont.

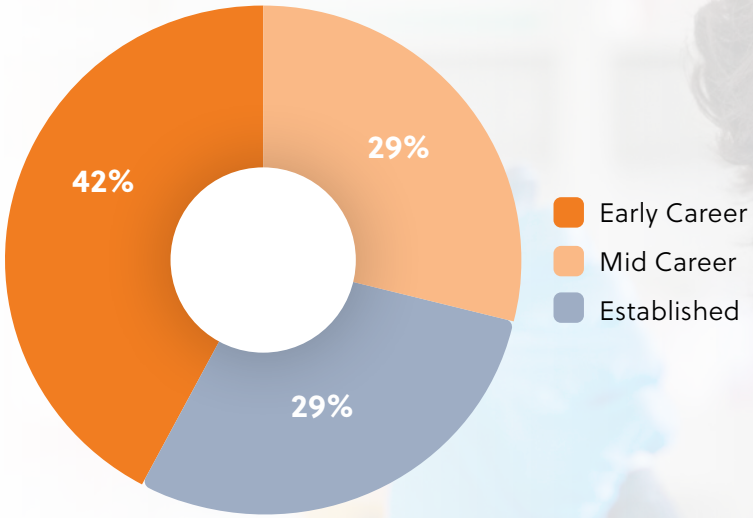
CAREER STAGES

Researchers are also often categorised by the stage of their career. While there are no hard and fast rules, early career researchers are typically up to around six years post the completion of their PhD, with mid career researchers in the subsequent 10 or so years. Established researchers are at a later stage in their career, often with their own teams, laboratories and/or research fields.

42% of respondents to the survey identified as early career researchers; 29% of respondents identified as mid career; and 29% as established.

All respondents to the survey were able to speak about the impact on themselves and their own research but those who are responsible for a research team or lab have a broader perspective as well as greater responsibility. **41% of all respondents to the survey were responsible for a team or laboratory.**

Figure 3: Career Stages



TERMS OF EMPLOYMENT

The COVID-19 pandemic has revealed differences in the security of employment of different workers and occupations. Most people would be surprised to learn that for many, a career in health and medical research and innovation is insecure.

More than half (54.5%) of all respondents were employed on contract. By far the most common contract term was 12 months. A further 5.3% are employed on a casual basis.

While the percentage of casual employees is low compared to industries like hospitality and retail, the number of respondents on fixed term contracts, is far higher than the national average.[1] While perhaps not as insecure as causal employment, this type of fixed term contract employment is also very insecure. It means that employment is very dependent on the ability to secure grants and funding for the research being undertaken. Delays and disruptions to grants can mean a loss of income, and no job.

Not surprisingly there are more researchers employed casually or on fixed term contract at the earlier career stages.

Figure 4: Terms of employment

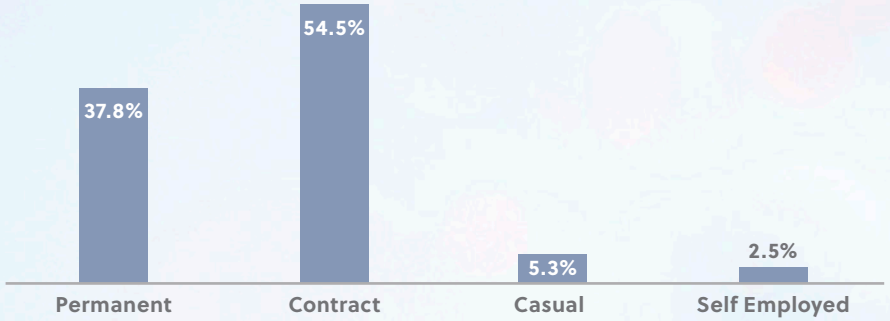
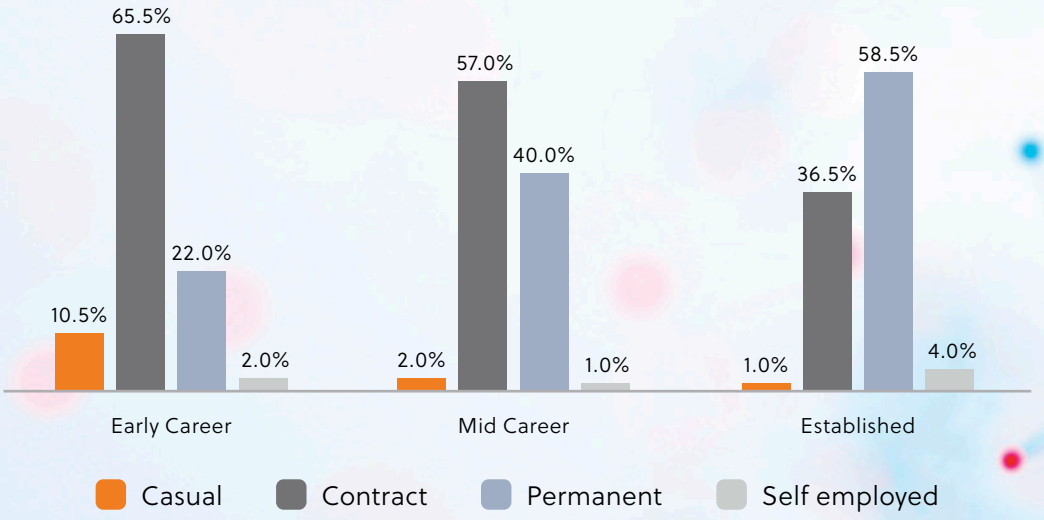


Figure 5: Career stage by terms of employment



1 G, Gilfillan, Trends in use of non-standard forms of employment, December 2018, Australian Parliamentary Library

AUSTRALIA'S RESPONSE TO COVID-19

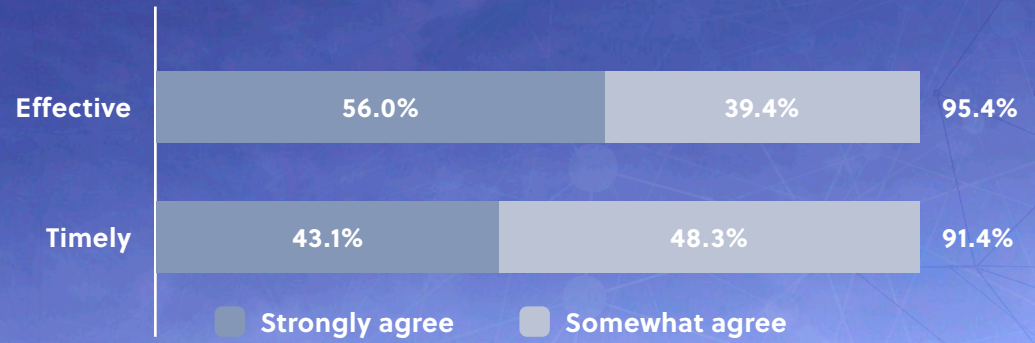
Australia responded relatively quickly to the COVID-19 pandemic with measures such as closing our international borders, preventing large gatherings, implementing work from home requirements and social distancing.

The health and medical research sector is generally better informed about viruses and pandemics than the general community, and we were curious to know what they thought of Australia's response to the COVID-19 pandemic. Have we got it right? The answer is overwhelmingly 'yes'.

TIMELY AND EFFECTIVE

95.4% believe Australia's overall response has been effective, with 56% strongly agreeing and 39.4% somewhat agreeing. 91.4% believe it has been timely, with 43.1% strongly agreeing and 48.3% somewhat agreeing.

Figure 6: Australia's response to COVID-19





EXPERTS VISIBLE AND RELIED ON

There is a strong perception that Australia's leaders have relied on expert advice, with 46.9% strongly agreeing and a further 44.9% somewhat agreeing with this proposition.

Health and medical research has been an important and visible part of Australia's response to COVID-19. Further funding for COVID-19 related research has been announced since the survey was conducted and continues to be implemented as part of Australia's efforts to mitigate the impact of COVID-19.

A little more than half (54.7%) of respondents agreed the Australian Government's response to COVID-19 in relation to research funding has been effective in reducing the impact of the pandemic in the community; nearly half (45.3%) disagree.

Figure 7: Reliance on experts

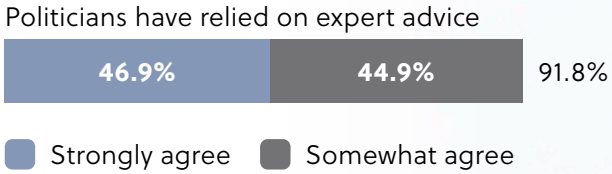
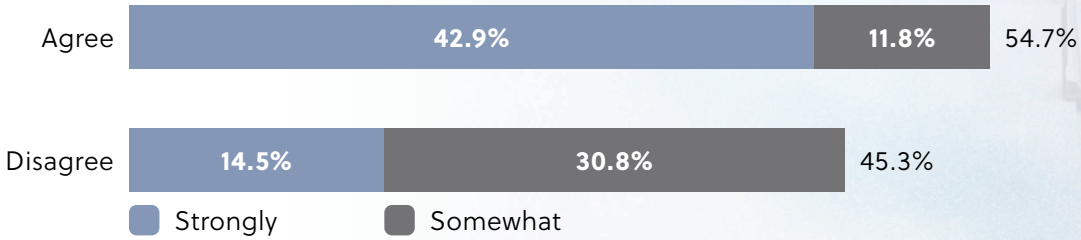


Figure 8: Government's response to funding new COVID-19 research effective

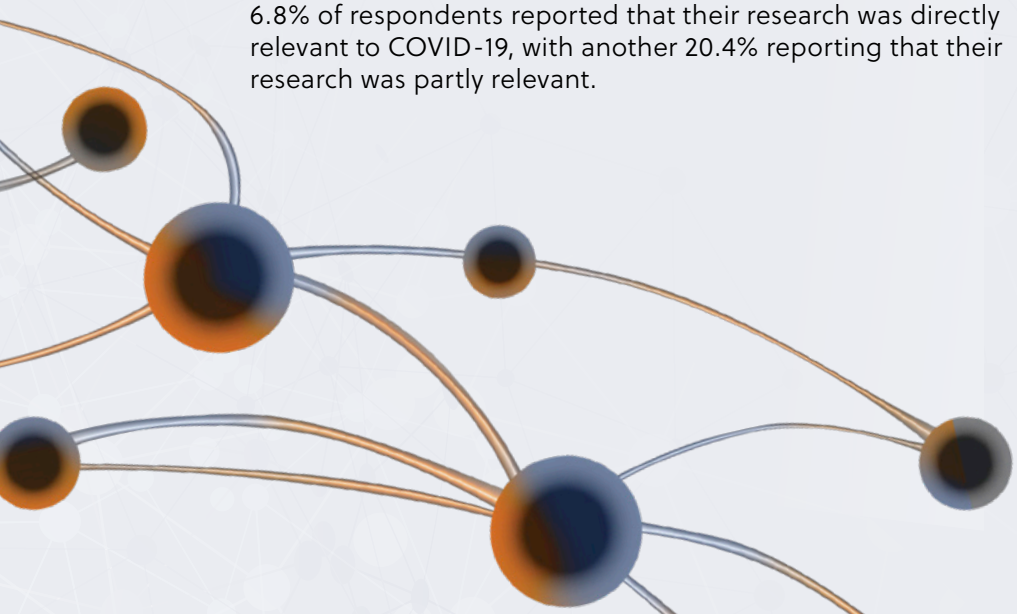


RESEARCH RELATED TO COVID-19

The COVID-19 pandemic and Australia's response to it has had a range of different impacts on the Australian community. It has had the most obvious effect on those who have the virus and those who are caring for them, but it has also affected the health and wellbeing of the many more Australians whose employment, education and way of life have been thrown into disarray.

We know that many researchers are undertaking research in response to COVID-19, including in fields as diverse as understanding the virus and predicting its spread, developing a vaccine, investigating the re-purposing of existing drugs, supporting healthcare workers and our health system, and looking to the effect on our community and vulnerable populations.

6.8% of respondents reported that their research was directly relevant to COVID-19, with another 20.4% reporting that their research was partly relevant.



Worldwide, governments have increased their spending in response to COVID-19. In Australia, this funding from the Commonwealth, State and Territory governments has been to boost health systems, protect jobs and industries and save businesses.

There has also been some additional funding for COVID-19 related research. For example, the University of Queensland team working on a vaccine has received millions of dollars of additional funding from the Commonwealth and Queensland Governments and from philanthropy. There have also been some other funding programs directed at COVID-19 research. We were curious to know how common this was.

Only 3.69% of respondents to our survey had received additional government funding, and even lower numbers reported having received funding from other sources. 91.75% had not received additional funding from any other source. (This percentage might increase over time as the response to COVID-19 continues and further funding is released.)

These very low numbers are despite the research being undertaken by over 6% of survey respondents being directly relevant to COVID-19, and the work of another 20% being partially relevant.

Universities in particular, though affected by very large losses of revenue associated with overseas students, have not been eligible for Commonwealth Government support, and have been explicitly excluded from the JobKeeper scheme. Some medical research institutes have also been caught out by the rules of JobKeeper because of their governance structures, while many research start-ups, which are pre-revenue, fail the loss of revenue test.

EFFECTS OF COVID-19 ON RESEARCHERS' WORK

Like most of the workforce, researchers have been affected by measures to curtail the spread of COVID-19, such as physical distancing, working from home requirements and the closure of borders.

80% of all survey respondents reported that their research had been adversely affected by COVID-19. A further 9.73% reported that their research had not yet been affected, but they expected it would be.

WORKING FROM HOME

Like so many other parts of the workforce, researchers generally had to comply with work from home requirements. Over half of respondents (51.4%) reported their research was unable to be undertaken remotely. Of course, much health and medical research involves human participants and the restrictions on physical contact imposed as part of the COVID-19 response meant that interviews and assessment with study participants had to cease, affecting the recruitment of respondents (49.8%) and interaction with existing research participants (41.7%). Related to this were the inability to access research settings such as hospitals (21.1%) and aged care (6.1%). International travel restrictions were also a major cause of disruptions to research (38.9%).



EFFECTS OF COVID-19 ON RESEARCHERS' WORK

OTHER RESPONSIBILITIES

Many researchers have teaching duties while others split their time between research and clinical work. The time needed to prepare for remote teaching as campuses closed (24.3%) and the additional demands of clinical work (11.2%) were also factors in drawing researchers away from their research. Interruptions to supplies, equipment and materials as transport and supply chains were broken was also a factor, affecting 28.6%. The full list is provided on the right.

The 'other' category included a range of individual responses. While the list focused on direct impacts on research, 33 respondents reported that their research was impacted by childcare/home schooling duties. Others included funding being withdrawn by their organisation or a philanthropic body, freezes on recruitment and domestic travel bans.

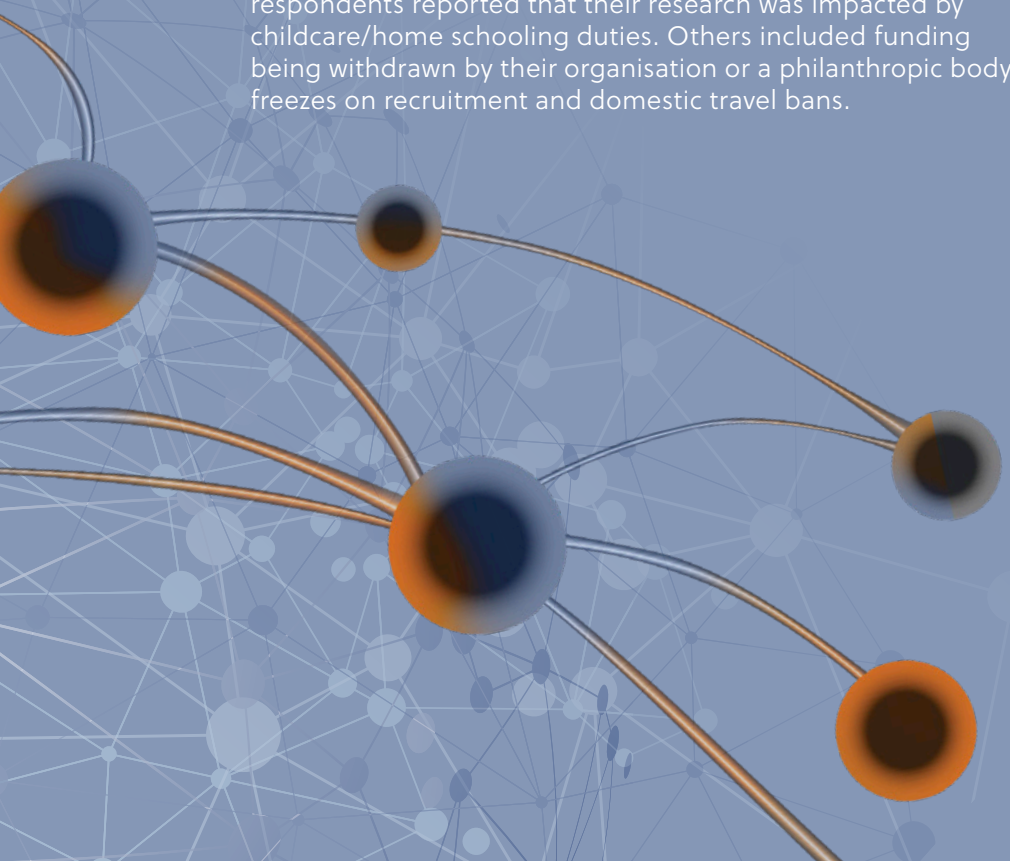


Figure 9: Immediate effects of COVID-19 on research



APPLYING FOR FUNDING

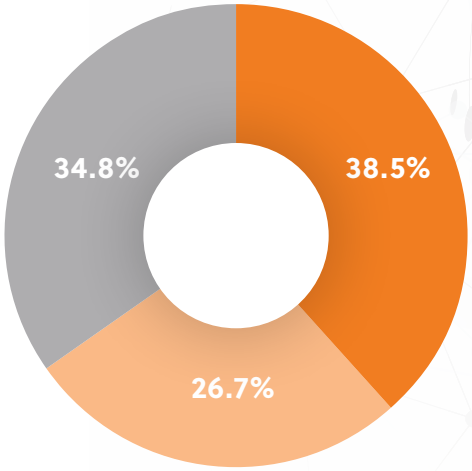
Seeking funding for new research is an ongoing process for researchers. Grant processes have also been affected by COVID-19 with some annual grant applications delayed or in some cases not proceeding this year. These changes have an impact on future research to be conducted in 2021 and beyond.

It can also mean that researchers are left with a gap between research projects, leading to a loss of income and an interruption to their careers.

We were curious to know how many researchers might be affected. As it turns out, it is most; just over a third (34.8%) of researchers were **not** currently applying for funding now or in the near future.

Once again, this reflects how precarious the employment prospects of so many of our researchers are. Looking for the next grant is a continuous and ongoing preoccupation.

Figure 10: Applying for research funding



APPLYING FOR FUNDING cont.



APPLICATIONS POSTPONED

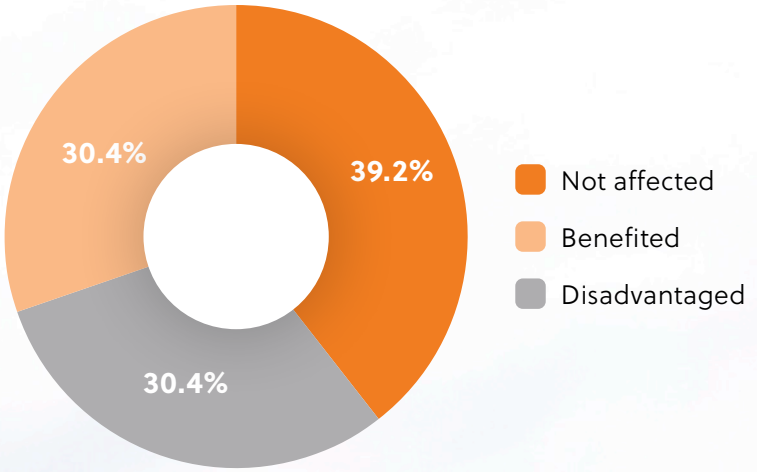
In part, the postponement of grants programs in March and April occurred because of concerns that some researchers would not be able to make applications on time. For example, researchers who are also health workers were working longer hours in our health system, while others were adjusting to working at home and preparing for remote teaching of their students.

The reactions to the postponement were mixed. Of the people who were applying for a grant now, nearly 40% were not affected, 30.4% were disadvantaged and the same percentage reported benefitting from the delay.

Reasons for benefitting included needing additional time because of responsibility for child care/home schooling, extra time needed to work on urgent responses to COVID-19 (such as developing ventilators), and the time required to prepare for remote teaching.

When such a large proportion of researchers are employed on contracts, and securing new funding is essential to continuing their work and being paid, the postponement of grants schemes is a serious issue for many researchers, even if the delay is warranted.

Figure 11: Effects of postponement of grant applications



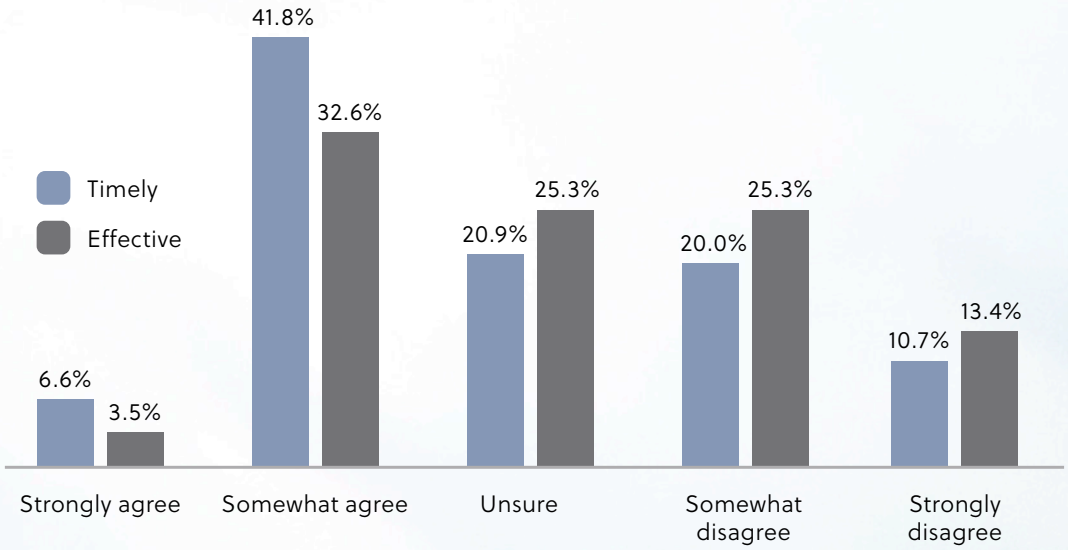
GRANT FLEXIBILITY FOR EXISTING RESEARCH

In addition to the changes made to applications for new grants, the National Health and Medical Research Council (NHMRC) and the Australian Research Council (ARC) announced a number of measures to assist researchers with existing grants. Recognising that research might be disrupted, they agreed to allow extensions of time to complete research and also for certain changes to be made to research projects to accommodate disruptions.

45.7% of respondents reported that these extensions and flexibility have helped them.

More broadly, we asked researchers about the level of support to researchers from research funding agencies to deal with the effects of COVID-19. While nearly half (48.4%) thought the responses had been timely, a little more than a third (36.1%) thought responses have been effective. Only a small percentage agreed strongly that responses had been timely and effective. A large proportion were unsure about the timeliness and the effectiveness.

Figure 12: Support for existing grant holders from funding agencies



FINANCIAL IMPACT

While the ARC, NHMRC and Medical Research Future Fund (MRFF) have provided extensions, assistance has not extended to additional funds for existing research, which no doubt influences researchers' views on the effectiveness of funding agencies' responses.

We know that the disruptions caused by COVID-19 are going to have financial impacts. Projects that take longer to complete will incur additional salary costs. Materials with use-by dates that expire while research is suspended will need to be replaced.

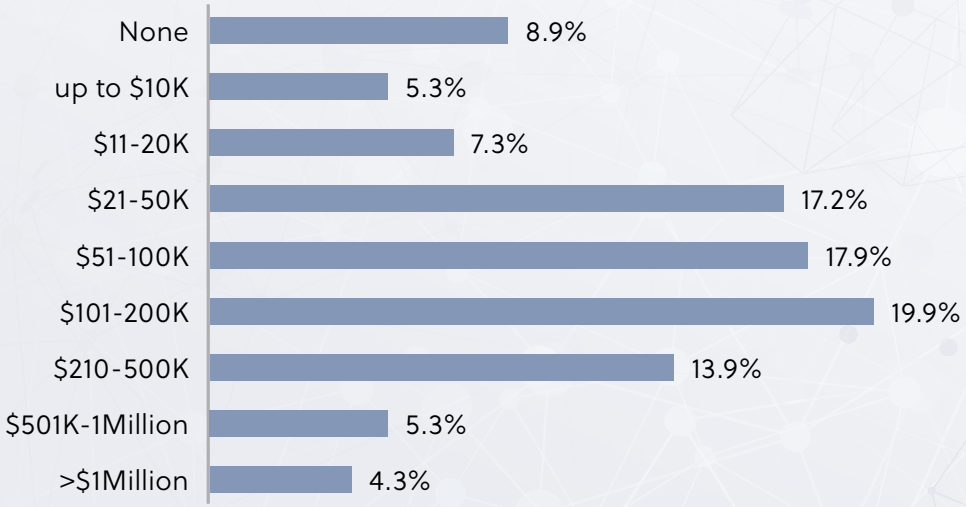
One of the overwhelming features of COVID-19 is uncertainty. How long will it last, what are the infection and mortality rates, the length of restrictions and lockdowns and how will the economy recover? Despite the uncertainty, we still asked researchers about the anticipated financial impact on their research.

As might be expected, just over one third (35.2%) of researchers who are responsible for a laboratory or team were unable to provide an estimate. Of those who were able to provide an estimate, only 8.9% reported that they expected no financial impact. The most common response (19.9%) was an estimate that it would have an impact of between $101,000 and $200,000.

Taking the mid point of all the estimates provided, (and using a value of $1 million for the greater than $1 million category), we conservatively estimate the total financial impact reported by all survey respondents as $75 million.

While this is a lot of money, without knowing the size of the research budget it is difficult to gauge how significant this is.

Figure 13: Financial impact of COVID-19 on research



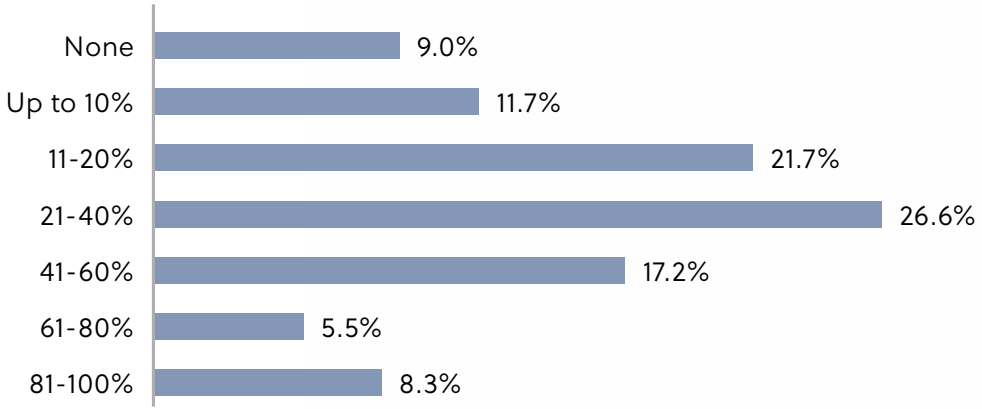
So we also asked respondents to estimate it as a percentage of their total budget.

Once again, a little more than one third (38%) of researchers responsible for a laboratory or team were unable to provide an estimate. Of those who could, 9% estimated there would be no effect. Of the remainder, the most common response (26.6%) was an expectation of a 21% to 40% impact on their budget. The other estimates are provided in the table below.

Together these are an indication of a very significant financial impact on Australian health and medical research, which must be in the hundreds of millions of dollars if the survey results are extrapolated over the entire sector.

So are researchers receiving any additional support to meet these expected shortfalls? The answer for most is no. Only 9% of respondents reported receiving additional funds from their own organisation to help cover these costs, and 5% expected their organisation would do so. 22% were unsure. Nearly two thirds (63%) reported that their organisation was not providing additional financial assistance.

Figure 14: Impact as a percentage of research budget





HDR STUDENTS AND EARLY CAREER RESEARCHERS

Higher Degree by Research (HDR) students are students completing a PhD or (less commonly) a Masters Degree by Research. HDR students and Early Career Researchers (ECRs) are recognised as being particularly vulnerable to research delays, disruptions and funding cuts.

HDR STUDENTS

HDR students have a fixed amount of time in which to complete the research required to attain their qualification and are typically allocated a fixed term scholarship to support them during this process. Clearly any delay in research can jeopardise their degree, either because the time limit to complete the degree is exceeded or the scholarship funding is exhausted, leaving them without an income or funds for their research materials.

75% of all respondents responsible for a laboratory or team reported that HDR students in their team or laboratory would be adversely affected.

83.5% of survey respondents support an automatic six-month extension to all PhD scholarships. The Australian Government is responsible for funding most scholarships for HDR students; and while it is willing to allow universities to provide six month extensions to HDR student's scholarships, it is not providing additional funding.[2] **This means any extensions to current HDR student scholarships will come at the expense of future HDR students, limiting the number of future scholarships that can be offered and/or their value.**

EARLY CAREER RESEARCHERS

As noted above, early career researchers are most likely to be employed on a contract (65.5%) and 10.5% are casual employees. They are also a group that is most often funded by their research organisation while they establish their own research career and until they are able to attract competitive grant funding from other sources. This makes them particularly vulnerable to funding cuts and budget blow outs caused by delays.

60% of all respondents responsible for a laboratory or team reported that ECRs in their team or laboratory would be adversely affected, and a further 19.5% were unsure.

Like HDR students, early career researchers are the future of the health and medical research sector. Disruptions to their careers, leading to fewer researchers rising through the ranks, ensures the short-term financial difficulties created by COVID-19 will have long-term ramifications.

2 https://www.education.gov.au/research-training-program

IMPACT BEYOND 2020

The immediate effects of COVID-19 are obvious, but Australia has been effective in flattening the curve and is now relaxing restrictions, although this situation remains dynamic. As it does so, this should help researchers return to their work. So is the impact only temporary? 69.4% expect their research outcomes to be affected beyond 2020. A further 22.4% are unsure. Only 8.2% are confident that their research outcomes will not be affected beyond 2020.

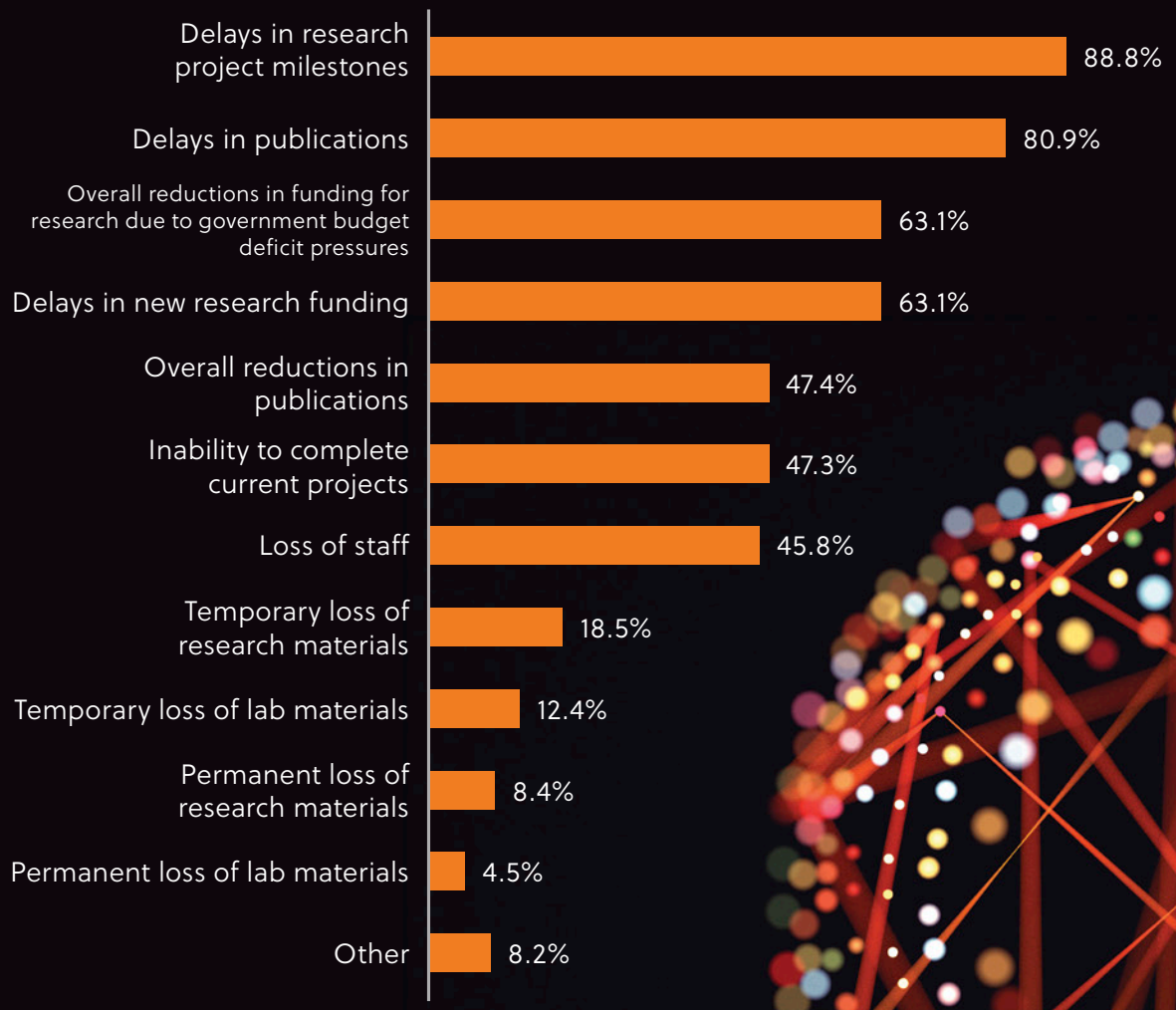
Of the 69.4% who expect their research to be affected beyond 2020 the biggest expected impacts are delays in meeting research milestones (88.8%) and in publications (80.9%). In addition to delaying publications, 47.4% expect that COVID-19 will reduce their number of overall publications. Nearly two thirds (63.1%) expect delays in new research funding.

Nearly half (45.8%) of those whose research will be affected beyond 2020 expect to lose staff, an unavoidable consequence of the financial impacts described above.

Nearly half (47.3%) of those who expect to be affected anticipate they will be unable to complete current projects. This represents a lot of wasted effort and an enormous opportunity cost-research that will never be completed, or which may have to be started again at a later date.

Despite COVID-19 demonstrating the importance of health and medical research and thrusting it into public prominence, almost two thirds (63.1%) expect reductions in future government funding as governments seek to repair their balance sheets.

Figure 15: Impact of COVID-19 beyond 2020



COVID-19 – AN OPPORTUNITY FOR CHANGE

A crisis often drives change. We have seen remarkable examples of rapid change and adaptation in our community, from businesses finding new markets or ways of delivering to customers, to the Commonwealth Government's funding of telehealth.

In the health and medical research sector we have seen researchers pivot their research to focus on the response to COVID-19. We were curious to learn more about how the HMR sector and its funding agencies were responding. Is the crisis driving change here too?

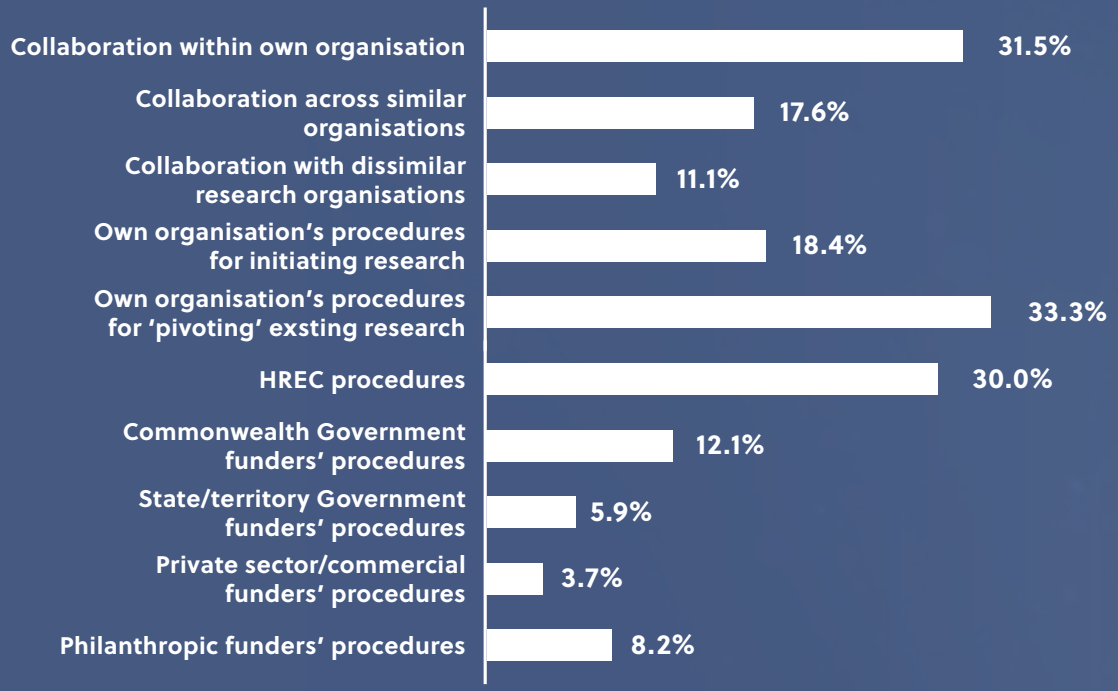
BETTER PROCEDURES, PRACTICES AND PROCESSES

The sense of urgency that comes with a crisis can lead to a reduction in 'red tape' and an improvement in procedures as people respond to new circumstances. We wanted to know if this had been part of the response within research organisations.

Collaboration is regularly described as essential to success in modern research and a lack of collaboration is often identified as a barrier to success. With the response to COVID-19 highlighting some strong collaborations we wanted to know how widespread this effect was.

There is evidence of some real improvement in collaboration. Nearly a third (31.5%) reported an improvement in collaboration within their organisation. 17.6% reported an improvement in collaboration with other research organisations similar to their own, and 11.1% reported an improvement in collaboration along the pipeline with dissimilar companies, e.g. between a medical research institute and a medical technology company.

Figure 16: Improvements in processes and practices



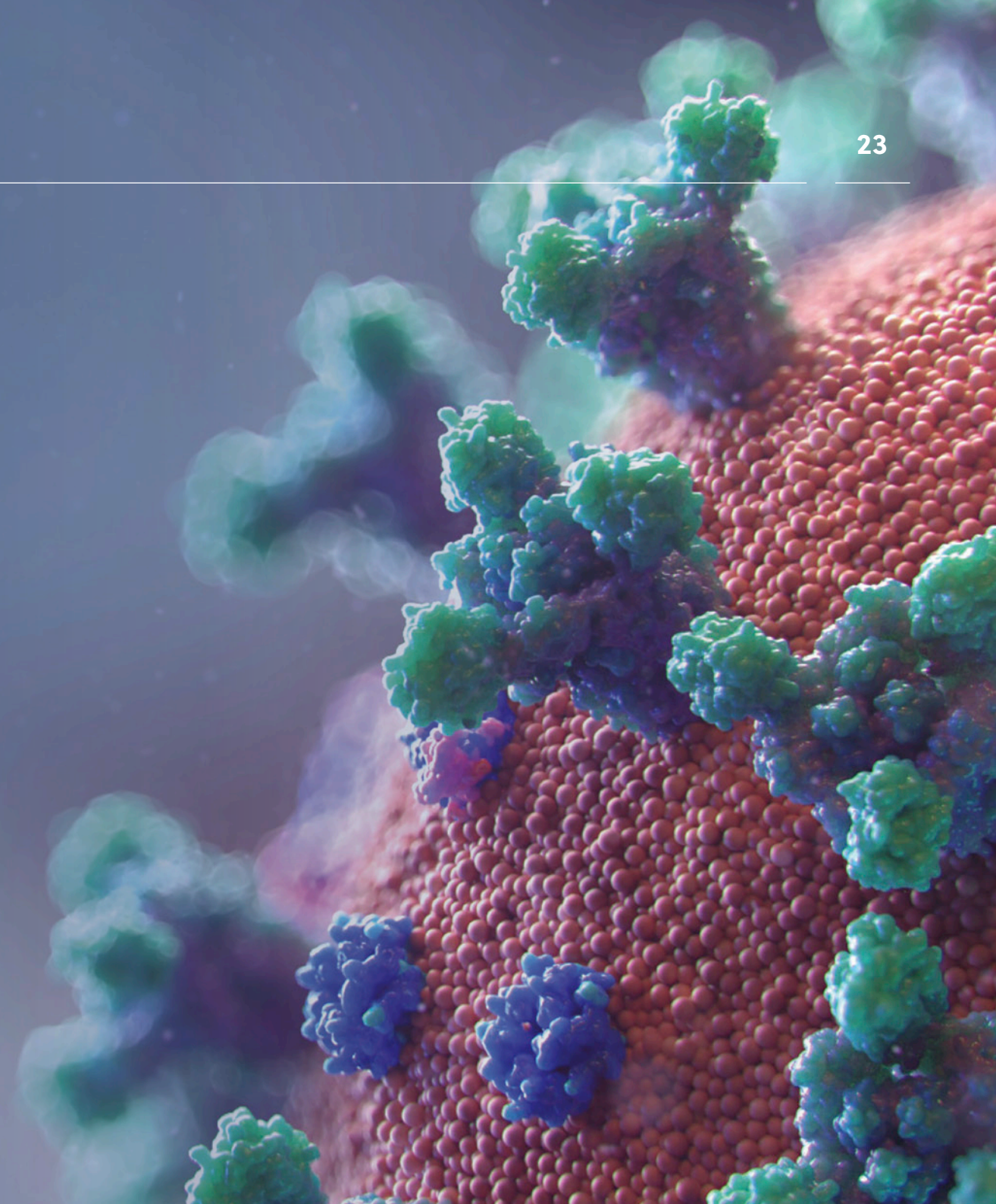
This latter type of collaboration is important for translating research findings. Despite these positive findings, a majority (58%) reported no evidence of improvement in collaboration.

18.4% reported an improvement in their organisation's procedures and responsiveness in relation to initiating new research, and one third (33.3%) reported an improvement in procedures to enable the pivoting of existing research. While once again, a majority (59%) reported no change, there is nonetheless significant evidence of rapid improvement in organisations' internal procedures in a short period.

Human Research Ethics Committees (HRECs) are required to approve nearly all research in the health and medical research sector. Their processes, and the time taken to assess research applications, have been the subject of much criticism and attention in the last decade. Nearly one third (30%) of respondents reported an improvement in the responsiveness of HRECs and their procedures since the COVID-19 crisis began.

Funding bodies' processes are another source of frustration in the lives of researchers. As the response to an earlier question shows, with only 34.8% of researchers not currently applying for funding or planning to do so in the near future, applying for funding is a constant and time-consuming part of researchers' lives.

12.1% reported an improvement in the responsiveness and procedures of Commonwealth Government funding agencies. Improvements were also reported for philanthropic funders (8.2%), State and Territory Government funding bodies (5.9%) and industry partners (3.7%). With nearly 80% (78.08%) reporting no relevant or recent experience with research funding bodies, these are small but important improvements across the range of different funding sources.



COVID-19 – AN OPPORTUNITY FOR CHANGE cont.

BARRIERS TO A RAPID RESEARCH RESPONSE

We were also interested to learn more about the perceived barriers to a more rapid research response. Tellingly, many of these were the same areas where recent improvements had been identified by some respondents.

The most significant, identified by more than half (54.7%) of respondents, was the financial impact of the COVID-19 pandemic on staff availability and capacity. 41% identified the financial impact on industry funding for research as an issue. As shown above, the financial impacts on the health and medical research sector are enormous.

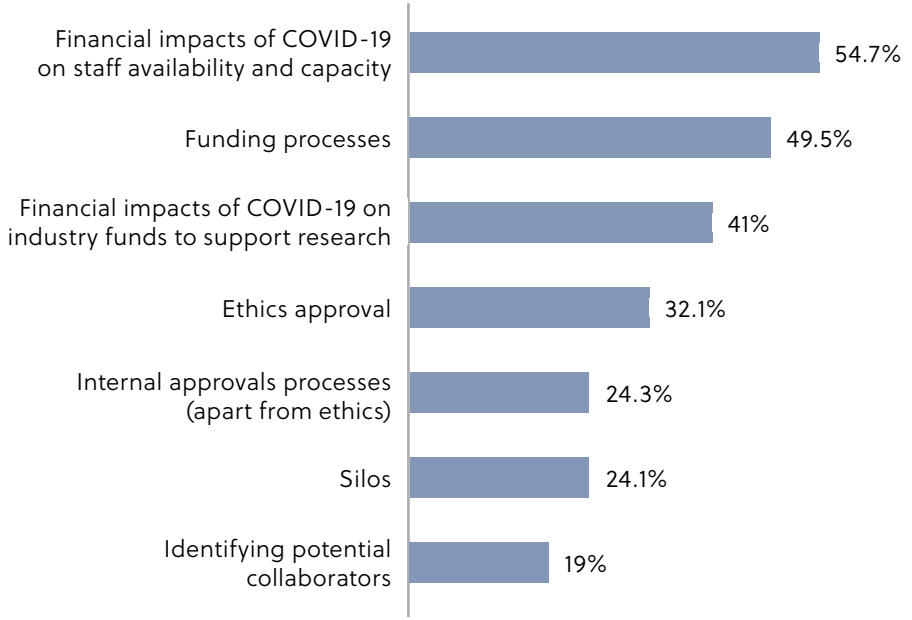
Funding processes are also an issue, identified by nearly half (49.5%) of all respondents. The urgency created by COVID-19 has led to some very rapid funding decisions, against which standard funding processes can appear cumbersome.

Nearly one third (32.1%) pointed to ethics approval processes. In the previous question, many people identified improvements in ethics approval processes as a positive response to COVID-19, perhaps highlighting how slow normal ethics approval processes are by comparison. Nearly one quarter (24.3%) identified internal approval processes as a barrier to a rapid research response.

As noted earlier, collaboration is the key to modern research, and many pointed to improvements in collaboration in response to COVID-19. So, it is significant that identifying potential collaborators was a barrier for one fifth (19%) of respondents and the existence of silos was a barrier to nearly one quarter (24.1%) of researchers responding rapidly to COVID-19.

Providing greater visibility of research currently being undertaken across the research sector has perhaps become more difficult but ever more important as the volume of research conducted in Australia and globally has increased in the last few decades. Addressing silos in research, which prevent collaboration across disciplines and between institutions, remains an ongoing problem, notwithstanding improved collaboration in some areas in response to the COVID-19 pandemic.

Figure 17: Barriers to a rapid research response



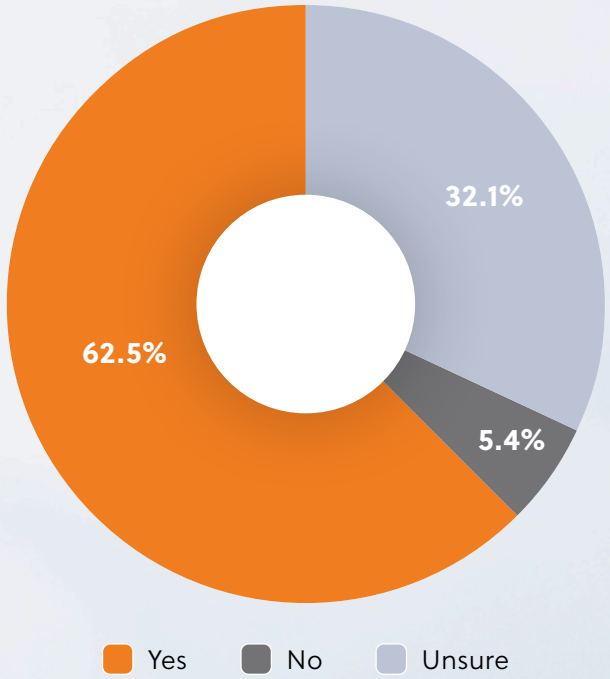
LONG-TERM RESTRUCTURE SUPPORTED

While we have focused on the short-term effects of the COVID-19 pandemic on research funding, as in other parts of our economy and society, the pandemic has highlighted some more fundamental issues with the way we do things.

This is evident to Australia's health and medical research and innovation community, with nearly two thirds of respondents (62.5%) supporting a longer-term restructure of Australia's research and innovation funding framework. Only 5.4% believed such a restructure was not required.

More than three quarters (79%) of respondents believe Research Australia has a role to play in consulting with key stakeholders to inform policies as part of a new research funding framework.

Figure 18: Longer term restructure of funding required



IDEAS FOR REFORM

We asked people to think about the types of response that funding agencies, or their own research organisations, could make to improve the resilience of the health and medical research and innovation sector to a future pandemic or other catastrophic event.

One quarter (24.9%) of respondents proposed changes their research organisations could make. The most common concerned improving the security of employment for research staff and creating reserves of funding that could be used during a pandemic or other catastrophic event to ameliorate the financial impacts on research.

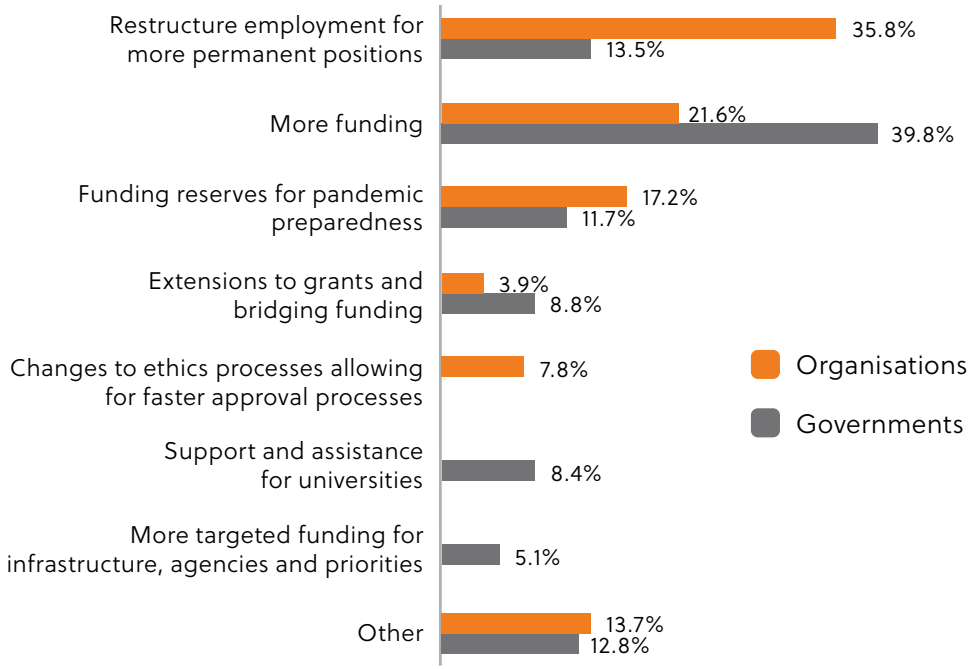
One third (33.52%) of respondents had ideas for measures that governments could implement. These had many similarities with the proposals for research organisations, including more funding to cover the extra costs created by the current pandemic and a special pool of funding to address future pandemics and catastrophic events. There was also a consistent call for governments to cover the full costs of the research they fund, as a way of reducing reliance on funding from sources such as philanthropy and international students.

One specific proposal was for a pandemic taskforce reserve:

'A pandemic taskforce reserve (like army reserves but full of health and research professionals, and gov body reps) - not one that is put together when a pandemic is in progress but one that exists all the time. It should have clear roles and responsibilities with people on each role using a governance structure and have meetings and updates a few times a year during non-pandemic time. Once a pandemic is active, all the people holding the reserve positions are activated and shift to pandemic tasks. Everything about the roles and tasks needs to be detailed and updated. It will need some regular staff while others are reserves. It will also need a safe funding pot in reserve...'

Such an approach could overcome some of the barriers to a rapid response identified earlier in the report, such as funding agencies' response times, difficulty knowing who is doing what and identifying collaborators. It would require ongoing funding and could be included as part of future pandemic preparedness planning.

Figure 19: Who should implement initiatives to increase resilience



CONCLUSION

It was inevitable that the COVID-19 pandemic would disrupt Australian health and medical research and innovation. This report describes in detail the scale of this disruption and the long-term effects as experienced by the researchers themselves.

The heavy reliance on fixed-term contracts for research funding and employment has exposed the precarious nature of a career in health and medical research. Without swift action, career opportunities for HDR students and early career researchers in particular will be reduced, future careers destroyed and research lost. If Australia's health and medical research sector is to respond more effectively to the next pandemic or similar health crisis, funding processes need to be improved, collaboration opportunities enhanced and silos removed.

Beyond immediate action, there is a clear need for long-term reform, to not only sustain and enhance Australia's world class research capability but increase its resilience, flexibility and sustainability.

Federal Health Minister Greg Hunt has said Australia has a 'golden opportunity' to become a global leader in medical research post-coronavirus and that Australia's handling of the coronavirus pandemic has put it in a prime position to become a leader in future medical research and clinical trials, attracting new medical research, technology and clinical practice and giving Australians access to new medical jobs[3].

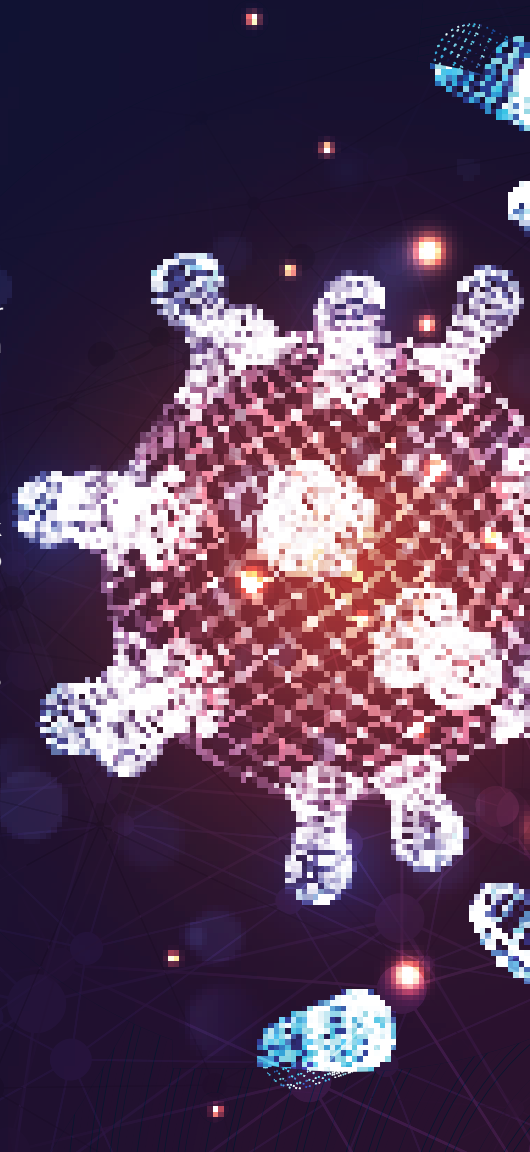
While it provides an opportunity, the coronavirus pandemic has also forced us to look at the challenges facing Australian medical research. There is an urgent need for policy reform to improve the framework for investment in medical research to enable us to take advantage of this opportunity.

Beyond the urgent needs around job security and granting programs, there are broader questions of system architecture. How is medical research funded and is the current system balancing resources with need, capacity and opportunity? How much re-reframing needs to be done to enhance, not stifle the golden opportunities that our research capability offers? What adjustments to the broader health system are required to enable implementation and translation at much greater and faster rates – truly driving patient centred outcomes? What kind of workforce does Australia require to match its needs now and into the future? How do we line up our industrial policy with our health and research policy? Accelerating growth and innovation must be part of the framework.

Addressing these questions and creating a new and better system requires the active participation of governments, health and medical researchers, health services, health insurers, consumers, commercial participants and innovators. The first task is to agree on the system-wide policy changes that are needed to position Australian health and medical research as a significant driver of a healthy population and a healthy economy.

Research Australia has already begun working with its members across the health and medical research and innovation pipeline to take a closer look at the perpetual issue of how to best support universities, medical research institutes, healthcare providers and private sector medical innovation so that we can provide all Australians with the best possible health and wealth outcomes.

We must not waste this 'golden opportunity'. COVID-19 has shown us that our lives and jobs depend on it.



3 https://www.abc.net.au/news/2020-06-14/coronavirus-opportunity-australia-medical-research-global-leader/12353754



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www.researchaustralia.org

SYDNEY

384 Victoria Street
Darlinghurst NSW 2010
P 02 9295 8546
E admin@researchaustralia.org

MELBOURNE

Level 5, 215 Spring Street
Melbourne 3000
P 03 9662 9420
E admin@researchaustralia.org