



National Health and Medical Research Council

Evaluation of large scale priority-driven grant opportunities

June 2024

This project was conducted in accordance with the international quality standard ISO 20252, the international information security standard ISO 27001, as well as the Australian Privacy Principles contained in the Privacy Act 1988 (Cth). ORIMA Research also adheres to the Privacy (Market and Social Research) Code 2021 administered by the Australian Data and Insights Association (ADIA).

Acknowledgments

ORIMA pays respect to Aboriginal and Torres Strait Islander Peoples past and present, their cultures and traditions and acknowledges their continuing connection to land, sea and community.

We would also like to acknowledge and thank all the participants who were involved in our research for their valuable contribution.

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Executive Summary

BACKGROUND

ORIMA Research evaluated the effectiveness of NHMRC's eight key large-scale priority-driven grant opportunities in fostering national collaboration.

Interviews and online surveys were conducted between May to December 2023 with the following stakeholder groups: successful and/or unsuccessful applicants, peer reviewers, or research administration officers (RAOs). Forty-seven interviews were conducted, and 298 participants responded to the online survey.

OVERALL PERCEIVED VALUE, BENEFITS AND DRAWBACKS OF NATIONAL COLLABORATION



81% of respondents indicated that **national collaboration increased research outcomes**

Forty-nine per cent of survey respondents indicated that national collaboration significantly increased research outcomes and a further 32% considered it slightly increased outcomes. Participants in the qualitative research attributed this positive impact to collaboration increasing the diversity of research teams, improving access to leading expertise and practices, providing

access to more or better resources and improving the national coverage and relevance of research.

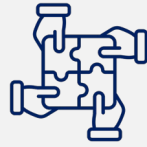
A range of collaboration outcomes were achieved throughout each grant opportunity: most commonly including national reach (89%), likely collaboration beyond the life of the grant (82%), and capacity building of early career researchers (82%). Collaboration outcomes differed by stakeholder group; successful applicants generally indicated more collaboration outcomes were achieved than unsuccessful applicants.

Around two-thirds of survey respondents considered the benefits of collaboration outweighed the drawbacks, and this perspective was even more widespread in successful applicants. Some additional benefits of collaboration identified by successful applicants included networking with other researchers (69%), and identifying (50%), and engaging in (57%), other collaborative opportunities.

Over one-third of survey respondents also identified some drawbacks of collaboration, primarily due to the excessive time or resources spent managing collaboration, perceived lack of genuine collaboration by participating institutions or researchers and relationship breakdowns. The qualitative research also found that research impact could be lessened due to funding being 'diluted' across too many researchers and that decision-making was sometimes centralised to a small group within the administering institution. This meant other researchers felt as though they could not be meaningfully involved with the research or that funding commitments were not always fulfilled.

NATURE OF COLLABORATION ACHIEVED AND PERCEIVED EFFECTIVENESS

Only around half of survey respondents provided positive ratings of the effectiveness of the grant opportunities, and the NHMRC processes to develop and implement them, in terms of impact on national collaboration. However, this masks variation in ratings of these aspects between stakeholder groups. In particular, over 70% of successful applicants and peer reviewers rated these aspects positively, compared with only one-third of unsuccessful applicants.



Over 70% of successful applicants & peer reviewers that responded to the survey rated grant opportunities and NHMRC processes effective in boosting national collaboration, compared with 33% of unsuccessful applicant survey respondents

Collaboration between institutions (95%), disciplines (80%) and jurisdictions (76%) was common for successful applicants. However, less than half of this cohort indicated that sharing of resources and materials occurred during the grant. Most respondents reported relatively high collaboration during the grant, supported by knowledge sharing and clear communication.

Almost half of respondents reported collaboration increased to a large extent following the commencement of the grant, and 65% indicated the extent of collaboration continued to increase *during* the grant.

Over 90% of respondents sustained at least moderate levels of collaboration after the grant, with 50% sustaining collaboration at similar levels to that which occurred during the grant. The extent of ongoing collaboration after grants ended was often due to the success of participants in securing additional funding as well as the links and relationships between researchers.

ENABLERS AND BARRIERS TO COLLABORATION



51% of respondents identified existing relationships as a collaboration enabler, and 42% identified timeframes as a barrier

Survey respondents identified existing relationships between researchers (51%) or institutions (28%), the emphasis on collaboration in the NHMRC selection criteria (38%), and the funding amounts (26%) as the most important factors

supporting research collaboration. Less common, but still important enablers included the grant duration (12%) and NHMRC workshops (9%). Qualitative research participants reinforced these findings and noted meaningful commitment to collaboration by key researchers and institutions as an important enabler for *genuine* collaboration.

Practical considerations including the time provided to prepare grant applications (42%) and grant funding amounts (26%) were significant barriers to collaboration. Participants in both the survey and qualitative research generally attributed this to the resource-intensiveness and administrative costs of collaboration.

While this suggests that collaboration is sometimes constrained by factors beyond the control of the NHMRC, (such as the prevalence of existing networks), there are process-related factors and aspects of grant design that can have an important influence on the level of collaboration including selection criteria, the application process, funding amounts, grant duration and NHMRC communication and support.

CONSULTATION, APPLICATION AND PEER REVIEW PROCESS

Almost half (41%) of respondents felt the NHMRC had *not* provided sufficient time (often considered to be 3-6 months) to effectively establish national collaboration. Successful applicants generally took more time to establish their core research team than unsuccessful applicants.



52% of successful grant applicants took 3+ months to establish their core research team compared with 24% of unsuccessful applicants

Up to one-quarter of respondents (10-25%) were involved in a range of application processes including expression of interest processes, briefings, workshops, peer review presentations and feedback opportunities. Most respondents agreed such processes emphasised collaboration in both selection criteria and grant outcomes and indicated they provided opportunities for initiating collaboration.

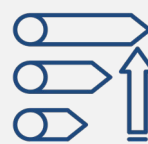
Most respondents considered the Grant Opportunity Guidelines clearly emphasised the importance and nature of collaboration required for their applications (84%). However, only 30% of respondents rated the opportunity to obtain feedback on their applications positively, with 49% rating this opportunity poorly. A few participants in the qualitative research reported the feedback they received was limited and lacked practical applicability.

There was substantial variation in perspectives on the effectiveness of the peer review process. Peer reviewers generally thought the NHMRC provided them sufficient information, but there was insufficient opportunity for interaction with research teams. Peer reviewers were generally very satisfied with the Peer Review Guidelines (81% rated the guidelines as useful), especially the emphasis on collaboration in these guidelines.

Some suggestions for improvement to the application process included increasing clarity in explaining the details of grant opportunities, providing more and clearer feedback to applicants about grant outcomes and increasing the emphasis on collaboration via higher weighting of this criterion. Qualitative research participants reinforced the suggestion to clarify the form of collaboration required and also recommended discouraging institutions from limiting researchers to involvement in only one application.

PERCEIVED PRIORITY AND IMPROVEMENTS TO ENCOURAGE NATIONAL COLLABORATION

Participants felt large-scale priority driven opportunities were integral for research impact and should remain a priority for the NHMRC. Some felt such opportunities needed to be reinforced with additional financial investment if possible. A few participants also emphasised the importance of targeting these grants effectively, including towards fields with low collaboration and where Australia's research program was immature or lagging internationally.



Most participants considered large-scale priority driven grants important and should remain a priority for the NHMRC

Survey respondents' suggestions for improvement to boost national collaboration concentrated on several key themes, including to provide:

- more emphasis or weight on collaboration or specific forms of collaboration;
- improved and fairer NHMRC decision-making (including less perceived bias to those with existing NHMRC grants) in assessing applicants;
- more time for applications and responding to feedback to enable more meaningful collaboration;
- more inclusive approaches, with less focus on perceived negative aspects of competition;

- clearer and more specific guidance to applicants about the kind and extent of collaboration required by the NHMRC;
- increased funding to facilitate meaningful collaboration with larger teams;
- more and clearer feedback at each stage of the application process; and
- opportunities for expression of interest and feedback.

Participants also suggested ways to structure funding to better support collaboration, including requiring co-administration of funding across multiple institutions and partnership grants. Some participants called for a requirement for greater detail (e.g. a budget and plan) from applicants about how collaboration would be maintained throughout the grant. Some suggested strengthening collaboration monitoring, including through requiring research teams to regularly report on the extent of their collaboration activities to provide evidence that collaboration is occurring in line with approaches outlined in their application.

SUMMARY OF RECOMMENDATIONS

The evaluation makes 7 recommendations for consideration to enhance future large-scale priority driven grant opportunities (see Section 7.2 for more detail):

1. Improve guidance (including in Grant Opportunity Guidelines, Peer Review Guidelines and the NHMRC Collaborative Research Guide) on the characteristics of better practice collaboration and how it will be assessed in priority-driven grant opportunities.
2. To facilitate researchers to form more meaningful collaborations: increase application timeframes to at least 4-6 months; implement an expression of interest process with opportunities for feedback as a standard component of the application process; and ensure workshops about grant opportunities are available and accessible to all applicants.
3. Increase the opportunity for applicants to receive feedback and provide clarification to peer reviewers during the grant application process, and for applicants to receive more detailed feedback about why they were successful or unsuccessful and reasons for ratings after the grant is awarded.
4. Consider increasing the size of funding and/or reducing the maximum number of named chief investigators allowed on each funding call to balance the competing objectives of inclusion of sufficient leading researchers, while avoiding excessive dilution of funding.
5. Consider extending the duration of some grants beyond 5 years and options for additional funding mechanisms after the end of grants to allow sufficient time for collaborations to form and be sustained.
6. Consider adjusting grant requirements and/or selection criteria to encourage research teams to increase the opportunity for a wider range of researchers to be involved in grant activities (e.g. by encouraging applicants to outline mechanisms to involve researchers not named on their bid and by discouraging practices where applicants prohibit researchers in their bid being involved in other bids).
7. Consider implementing additional methods to increase the likelihood of administering institutions and CIAs undertaking genuine collaboration in line with their application, including via clarified requirements and improved NHMRC monitoring.

1. Introduction

1.1. Background

The National Health and Medical Research Council (NHMRC) funds priority-driven research in response to identified health priority areas to create a healthier future for Australians through relevant and targeted research initiatives. The NHMRC's funding program includes several large one-off priority-driven grant opportunities, including special initiative grant opportunities, Centres of Research Excellence (CRE) grants for health priority areas, and other large grant opportunities within existing schemes or as standalone programs. Though each grant opportunity is unique in design, each has a common focus of establishing a national collaborative research network.

The NHMRC has identified the need to evaluate the effectiveness of these large-scale grant opportunities in fostering national collaboration and commissioned ORIMA Research to conduct qualitative and quantitative research to assess the effectiveness of a range of these grants.

Eight grant opportunities were identified to be in scope for this evaluation, as outlined in the table below.

Table 1: Grant opportunities in scope for the evaluation







Grant opportunity	Duration	Value	Number awarded
Targeted Call for Research into Preparing Australia for the Genomics Revolution in Health Care (<i>Targeted Call for Genomics Revolution or TCR Genomics</i>) <ul style="list-style-type: none"> To support research to demonstrate how the discovery and application of genomic data in human disease/s impacts care of patients. 	2016-2020	\$25 million	1
Northern Australia Tropical Disease Collaborative Research Program (<i>NA Tropical Disease Program or Tropical Disease</i>) <ul style="list-style-type: none"> To support research into the diagnosis, treatment and prevention of tropical disease in Northern Australia. 	2016-2020	\$6 million	1
Centres of Research Excellence in Infectious Disease Emergency Response (<i>CRE in Infectious Disease Response or CRE Infectious Disease</i>) <ul style="list-style-type: none"> To support research into Australia's capacity to prepare, respond and recover from infectious disease outbreaks. 	2018-2022	\$5 million	1
Boosting Dementia Research Grants Priority Round 3 National Dementia Network (<i>Boosting Dementia Research</i>) <ul style="list-style-type: none"> To accelerate research, enhance collaboration and promote advances in dementia research and treatment. 	2018-2023	\$18 million	1
NHMRC Special Initiative in Human Health and Environmental Change (referred to as <i>SI in Human Health and Environmental Change or Human Health & EC</i>) <ul style="list-style-type: none"> To improve Australia's current capability and capacity in human health and environmental change research. 	2021-2026	\$10 million	1
NHMRC Special Initiative in Mental Health (<i>SI in Mental Health or Mental Health</i>) <ul style="list-style-type: none"> To support the establishment of a national centre for innovation in mental health care as a collaborative network. 	2021-2026	\$10 million	1

Grant opportunity	Duration	Value	Number awarded
NHMRC National Network for Aboriginal and Torres Strait Islander Health Researchers (<i>National Network of First Nations Health Researchers or National FN Network</i>) <ul style="list-style-type: none"> To create an inclusive system that brings together an Aboriginal and Torres Strait Islander health research group to improve First Nations health outcomes. 	2021-2026	\$10 million	1
Centres of Research Excellence in Dementia Research (<i>CRE in Dementia Research or CRE Dementia</i>) <ul style="list-style-type: none"> To support research into the diagnosis of dementia and to improve the level of care, treatment and health outcomes for people living with dementia. 	2021-2026	\$9 million (across 3 grants)	3

1.2. Research objectives

The overall aim of the research was to evaluate the NHMRC's effectiveness in establishing national research collaborations through the eight grant opportunities in scope for the evaluation, in order to provide an evidence base for the NHMRC to identify the best practice approaches to **designing priority-driven grant opportunities** to achieve national research collaboration.

More specifically, the research sought to evaluate the grants by assessing:

-  **Stakeholder sentiment** towards the **benefits and drawbacks** of national collaboration;
-  The **effectiveness of the collaborations** formed, specifically stakeholders' satisfaction with NHMRC's processes and the resulting collaborations;
-  **Key enablers and barriers** to establishing larger collaborations, both at the application stage and during the funding period and the extent to which these **enablers** were **within the control of the NHMRC**;
-  Awareness and perceived effectiveness of the **consultation process** between the NHMRC and its stakeholders when developing grant opportunities;
-  The **clarity** of the **Grant Opportunity Guidelines**, specifically the extent to which the guidelines were effective in encouraging and supporting collaboration at the application stage as well as during the grant; and
-  The **role that large scale priority-driven grants should play** overall within the NHMRC's grant program

For the purposes of the evaluation, the NHMRC provided the following **definition of a successful national research collaboration** that was used to assess the effectiveness of collaborations formed:

A network of researchers/ research teams that demonstrated (within their priority area and subject to any other scheme-specific objectives):

- **Formation of new collaborations** between researchers, disciplines and sites (including reducing silos);
- **Meaningful** and non-tokenistic **engagement** across multiple research teams/ sites;
- **Involvement of stakeholders** in research, including health consumers and the community, the health system, policy makers and other end-users as appropriate;
- **National reach** or coverage, via physical or virtual connections between researchers or with stakeholders, the community or other end-users;
- **Growth** (or stability at a minimum) of the research **collaboration over time**, including research capability building such as mentoring and support for early- and mid-career researchers;
- **Innovation in research**, including shifting the previous research paradigm (as assessed by the researchers during or after the life of the grant); and
- **Likely or demonstrated ongoing collaboration** beyond the end of the grant.

1.3. Research methodology

The research involved three key phases.



Phase 1: Initial qualitative research

The purpose of this phase was to undertake initial exploration of the breadth and type of experiences stakeholders had with the grant opportunities and grant application processes. This initial consultation was used to inform the development of the quantitative survey as well as the second round of qualitative follow-up research.



Phase 2: Quantitative research

The purpose of this phase was to quantify stakeholders' attitudes, perceptions and experiences towards the grant opportunities and grant application processes, to measure the relative strength of perceptions and experiences and how these differ between stakeholder groups.



Phase 3: Follow-up qualitative research

The purpose of this phase was to enable deeper exploration of the key themes and issues raised in the survey, including at the individual level (i.e. why respondents provided particular survey responses), and the overall level (i.e. to explain trends and patterns identified in the quantitative research).

Each of these phases is further described in the sections below.

1.3.1. Target stakeholders

Across the three phases, the target stakeholders were identified by the NHMRC as being involved in one or more of the eight in-scope grant opportunities, across a range of role types. The role types included:

- **Successful applicants:** Chief or Associate Investigator on a successful grant application for one of the in-scope grant opportunities. These stakeholders provided insights into all phases of the research grant (application process, full life-time of the grant and beyond the close of the grant, where applicable);
- **Unsuccessful applicants** who, within a research team (as Chief or Associate Investigators), submitted a grant application for one of the in-scope grant opportunities but were not selected by the NHMRC to receive the grant funding. Unsuccessful applicants provided insights into the grant application process and the extent of collaboration of these grants with researchers outside the successful consortium;
- **Successful and unsuccessful applicants** who were involved in multiple grant applications, at least one of which was successful and at least one of which was unsuccessful. This group is not presented separately in the survey results due to small number of respondents and to simplify the analysis (see section 1.4.1);
- **Peer reviewers** were experts in relevant or associated fields and disciplines who were appointed by the NHMRC to review applications submitted for the in-scope grants. Peer reviewers provided advice for the NHMRC's final funding decision for the grant allocation. For this evaluation, peer reviewers provided insight into the peer-review process for the grant they advised for; and
- **Research Administration Officers (RAOs)** who worked within a university or institution to disseminate information about grant opportunities and support researchers in the application for and management of grants. The RAOs that participated in this evaluation provided insights into the grant application processes and management of in-scope grants. Many had worked with their institution on multiple in-scope grant applications.



1.3.2. Initial qualitative research

The first phase of the evaluation consisted of preliminary qualitative research with participants **to explore the breadth and types of experiences stakeholders had with the grants and grant application processes**. This initial consultation phase was used to inform the development of the quantitative survey (including topics covered, question wording and response options provided), as well as the second round of qualitative follow-up research.

The NHMRC identified 22 potential contacts chosen to capture a variety of different role types and grant opportunities to support meeting the exploratory objectives of this phase. These contacts were recruited according to their availability during the initial qualitative research phase.

A total of eight stakeholders agreed to participate in the interviews. Interviews were conducted via video-conference between **31 May and 14 June 2023**. Involvement in the research was offered on a voluntary basis, and no reimbursement payment was provided for participants. The interviews were conducted for up to 1 hour duration.

Further details of the qualitative research sample, including participants from the initial qualitative research, have been provided in Table 3 and Table 4. These tables are presented in Section 1.3.4 which discusses the follow-up qualitative research, to provide a holistic overview of the qualitative research sample.



1.3.3. Quantitative research

The second phase of the evaluation consisted of quantitative data collection via a survey involving all five stakeholder types.

QUESTIONNAIRE DEVELOPMENT

The survey questionnaire was developed by ORIMA Research in consultation with the NHMRC, taking into account the findings of the exploratory qualitative research and pilot testing amongst stakeholders. The final questionnaire is shown in Appendix A.

The survey was conducted between **14 September and 20 October 2023**.

SURVEY FIELDWORK

The survey was conducted as a census, with all stakeholders identified by the NHMRC as being associated with the eight priority-driven grant opportunities invited to take part in the survey online. Targeted Computer Assisted Telephone Interviews (CATIs) were also conducted with stakeholders associated with grant opportunities and stakeholder types with a relatively low number of online survey completions.

A total of 936 stakeholders were invited to take part in the survey, with 298 completing the survey across the pilot and main survey. This represents a response rate of 32%. Survey respondents were invited to participate in the qualitative follow-up research (see section 1.3.4). A breakdown of respondents by stakeholder type and grant opportunity is shown in Table 2.

Table 2: Number of survey responses and response rate by grant opportunity and stakeholder type¹

	Successful	Unsuccessful	Successful and Unsuccessful	Peer Reviewer	RAO	Total responses	Invitations sent	Response rate
Targeted Call for Research into Preparing Australia for the Genomics Revolution in Health Care	22	NA	NA	0	0	22	43	51%
Northern Australia Tropical Disease Collaborative Research Program	3	21	2	4	2	32	96	33%
Centres of Research Excellence in Infectious Disease Emergency Response	3	3	0	1	0	7	41	17%
Boosting Dementia Research Grants Priority Round 3 National Dementia Network	5	1	0	3	0	9	72	13%
NHMRC Special Initiative in Human Health and Environmental Change	25	24	1	5	2	57	194	29%
NHMRC Special Initiative in Mental Health	10	36	2	3	1	52	176	30%

¹ See section 1.3.1 for a description of stakeholder types.

	Successful	Unsuccessful	Successful and Unsuccessful	Peer Reviewer	RAO	Total responses	Invitations sent	Response rate
NHMRC National Network for Aboriginal and Torres Strait Islander Health Researchers	19	NA	NA	2	0	21	86	24%
Centres of Research Excellence in Dementia Research	15	68	4	7	4	98	343	29%
Total responses (n=)	102	153	9	25	9	298		
Invitations sent (n=)	335	548	23	65	14		936	
Response rate	30%	44%	40%	38%	64%			32%

Table 2 shows that while the survey achieved a solid total number of survey responses and response rate, there was a **relatively low number of respondents in several grant opportunities and stakeholder types**. In particular, less than 50 responses were received from:

- Two stakeholder types² – peer reviewers (n=25) and RAOs (n=9); and
- Five grant opportunities – NA Tropical Disease Program (n=32); Targeted Call for Genomics Revolution (n=22); National Network of First Nations Health Researchers (n=21); Boosting Dementia Research Grants (n=9); and CRE in Infectious Disease Response (n=7).

The table shows the reason for these low response numbers was a combination of:

- A low number of stakeholders (between 14 and 96) sent survey invitations in each of these cohorts, reflecting the limited number of these stakeholders; and
- Relatively low response rates in two grant opportunities – CRE in Infectious Disease Response (17%) and the Boosting Dementia Research Grants (13%).

The table also shows that there were **significant compositional differences in the profile of respondents by stakeholder type between grant opportunities**. This also largely reflected differences in the profile of the underlying population of stakeholders between grant opportunities.



1.3.4. Qualitative follow-up research

Following the completion of the survey, a second round of qualitative research was conducted between **3 October– 18 December 2023**. This follow-up qualitative research enabled deeper exploration of the key themes and issues raised in the survey.

This phase consisted of **39 in-depth interviews** conducted via video-conference with participants across all grants and role types. Participants in the qualitative follow-up phase of research were drawn from stakeholders who had completed the quantitative survey and indicated their interest in participating in further research to explore their responses in greater depth (79 potential participants were invited to participate in the follow-up qualitative research).

² While there were also less than 50 successful and unsuccessful respondents, this group is not considered a distinct stakeholder group for the purpose of this analysis, as they were grouped with successful applicants and/or unsuccessful applicants in all questions they answered in the survey and are presented alongside these groups for analysis presented in this report.

The interviews were up to 1 hour duration for successful applicants, and up to 45 minutes each for unsuccessful applicants, RAOs and peer reviewers to reflect differences in the range of issues discussed between these stakeholder types.

As most participants³ had previously completed the survey, moderators reviewed individual's survey responses prior to the interviews to facilitate more targeted and tailored questioning to areas of interest.

Cumulatively, **47** participants were involved across both phases of the qualitative research (eight in the initial phase and 39 in the follow-up phase). The spread of participants by grant opportunity, role type and research phase is outlined in Table 3 and Table 4.

Table 3: Qualitative research sample by grant opportunity and round

Grant	Role Type	Initial qualitative research (n=8)	Qualitative follow-up research (n=39)	TOTAL (n=)
Centres of Research Excellence in Dementia Research	Successful	-	1	12
	Unsuccessful	1	6	
	Peer Reviewer	1	1	
	RAO	1	1	
NHMRC Special Initiative in Human Health and Environmental Change	Successful	1	-	8
	Unsuccessful	1	4	
	Peer Reviewer	-	1	
	RAO	1	-	
NHMRC Special Initiative in Mental Health	Successful*	-	1	5
	Unsuccessful	-	3	
	Peer Reviewer	-	1	
	RAO	-	-	
Northern Australia Tropical Disease Collaborative Research Program	Successful*	-	2	5
	Unsuccessful	-	2	
	Peer Reviewer	-	1	
	RAO	-	-	
Centres of Research Excellence in Infectious Disease Emergency Response	Successful	-	3	5
	Unsuccessful	-	1	
	Peer Reviewer	-	1	
	RAO	-	-	
Targeted Call for Research into Preparing Australia for the Genomics Revolution in Health Care	Successful	-	4	5
	Unsuccessful	NA**	NA**	
	Peer Reviewer	-	1	
	RAO	-	-	
Boosting Dementia Research Grants Priority Round 3 National Dementia Network	Successful	1	1	4
	Unsuccessful	-	-	
	Peer Reviewer	1	1	
	RAO	-	-	

³ While the qualitative follow-up research attempted to only involve stakeholder who had completed a survey, four interviews were also undertaken with those who had not completed a survey to increase coverage of underrepresented grant opportunities and stakeholder types.

Grant	Role Type	Initial qualitative research (n=8)	Qualitative follow-up research (n=39)	TOTAL (n=)
NHMRC National Network for Aboriginal and Torres Strait Islander Health Researchers	Successful	-	2	3
	Unsuccessful	NA**	NA**	
	Peer Reviewer	-	1	
	RAO	-	-	
Total participants		8	39	47

* One 'successful applicant' participant in each of the NHMRC Special Initiative in Human Health and Environmental Change and the NHMRC Special Initiative in Mental Health was also an unsuccessful for another grant opportunity. They are presented as successful applicants in this table as most of their feedback related to these grant opportunities.

** Some grants did not have unsuccessful applicants, as the grant application process involved the development of a single combined application for all research teams.

Table 4: Total qualitative research participants by stakeholder type

Role Type	Initial qualitative research (n=8)	Qualitative follow-up research (n=39)	TOTAL (n=47)
Successful applicant	2	14	16
Unsuccessful applicant	2	16	18
Peer Reviewer	2	8	10
Research Administration Officer	2	1	3

QUALITATIVE ANALYSIS APPROACH

A systematic thematic qualitative analysis approach was adopted for this project. As part of this approach, qualitative data was recorded and coded according to key themes and analysed iteratively – with the themes and findings being continuously developed and refined throughout the research process.

1.3.5. Limitations of the research

Some limitations were encountered in the conduct of this study, and should be considered when interpreting the research findings.

- The **low number of survey responses received for some grant opportunities and stakeholder types** means that caution should be used in interpreting survey results within these groups. This is particularly the case where the number of respondents is less than 10. In these cases, results can be interpreted as indicative of the sentiment of stakeholders within these groups but not as quantitative estimates that reliably represent these groups as a whole.
- **Challenges achieving equal coverage of a range of roles across all grant opportunities** – participation in the research was voluntary, and the sample for the follow-up qualitative research was sourced from those who chose to opt in during the survey. For some grant opportunities, only a few survey respondents (and in some cases no respondents) were received for some stakeholder types and an even smaller number opted into the follow-up qualitative research. This led to an uneven spread of participants across role types and grant opportunities. These challenges have implications for both the quantitative and qualitative results shown in this report:

- Considerable differences in research findings were recorded in the views and experiences of different stakeholder types, particularly between successful and unsuccessful applicants and to a lesser extent between peer reviewers and RAOs. For the quantitative findings, this means that **comparisons between different grant opportunities should be interpreted with caution** due to differences in the number of respondents from different stakeholder types that answered surveys about each grant opportunity.
- **Challenges** for participants in **recalling specifics of their application/ grant experience** – three of the grants had ended at the time of the research, two of which had ended in 2020. As a result, in some cases participants had difficulties recalling details of their experiences. This may have also impacted on the level of interest in participating in the research.

1.4. Presentation of results

1.4.1. Presentation of quantitative research findings

Reported percentages are based on the total number of valid responses made to the particular question being reported on. The results reflect the responses of stakeholders who had a view about the issues and for whom the questions were applicable. Unless explicitly noted, ‘don’t know/ not sure’ responses are excluded from the results shown in the report.

For ease of reading, in some cases five-point scales have been condensed and are reported in the form of three-point scales—recording positive, neutral and negative responses. For example, the proportion of respondents who answered ‘strongly agree’ or ‘agree’ to a particular question are reported as the proportion who responded as ‘agree,’ while those who answered ‘strongly disagree’ or ‘disagree’ are reported as the proportion who responded as ‘disagree.’ Percentage results throughout the report may not add up to 100% due to rounding.

SUPPRESSION OF RESULTS FOR SMALL GROUPS

This report does not display or include analysis of survey findings where a question has less than 5 respondents for a particular stakeholder group or grant opportunity. In these cases, while the stakeholder group results are not shown in a stand-alone manner they are included in the overall results. This means that results for RAOs and for analysis by grant opportunity are often suppressed in the report.

Results for stakeholder groups and grant opportunities that are shown but based on a small number of respondents (e.g. less than 30) should be interpreted with caution. This includes all results for peer reviewers and analysis of results by grant opportunity. In these cases, the results should not be interpreted as robust quantitative estimates of the percentage of the underlying population holding a particular view. They should, however, be interpreted as indicative of the broad sentiment of these groups on the issue, in a similar way to the qualitative findings (see overleaf).

ALLOCATION OF RESULTS FOR SUCCESSFUL AND UNSUCCESSFUL RESPONDENTS TO OTHER GROUPS

Results for the 9 survey respondents that were involved in successful and unsuccessful grant applications have not been presented as a stand-alone stakeholder group in this report. This is done partly to simplify the results and avoid the confusion that could have occurred in comparing results for this group with those (only) involved in successful applications and those (only) involved in unsuccessful applications.

These respondents have instead been allocated to results as follows:

- They have been retained in the overall results and in results that breakdown findings by anything apart from type of grant applicant.
- For results that breakdown findings by type of grant applicant, they have been counted in the results for successful applicants and the results for unsuccessful applicants.⁴

1.4.2. Presentation of qualitative research findings

Qualitative research findings have been used throughout the report to provide depth of understanding on particular issues. In some cases, qualitative data has been presented without quantitative data. In these instances, it should be noted that the exact number of participants holding a particular view on individual issues cannot be measured.

The following terms have been used throughout the report to provide a qualitative indication and approximation of the number of participants who held particular views:



Most – refers to findings that relate to more than three quarters of the research participants.



Many – refers to findings that relate to more than half of the research participants.



Some – refers to findings that relate to around a third of the research participants.



A few – refers to findings that relate to less than a quarter of research participants.

The most common qualitative findings are reported except in certain situations where only a few have raised particular issues, but these are nevertheless considered to be important and to have potentially wide-ranging implications/ applications.

Participant quotes have also been provided throughout the report to support the main results or findings under discussion. Quotes presented in the text that are coloured blue and all quotes in the ‘speech bubble’ images are from the qualitative research. Quotes in the text that are coloured green are from survey respondents.

⁴ While the survey asked grant applicants that were involved in multiple applications to keep one of them in mind when answering questions that relate to specific grant experiences (rather than overall ratings), the survey did not record whether their frame of reference was a successful or unsuccessful application and therefore applies their answers to both groups.

2. Overall perceived value, benefits and drawbacks of national collaboration

This chapter presents findings about the extent to which large scale priority driven grant opportunities achieved desired outcomes and impacts of collaboration, the overall perceived value of national research collaborations, and the benefits/ positive impacts and drawbacks/ negative impacts which were experienced in the evaluated grants.



Key findings

- Both the survey and qualitative research suggested a range of collaboration outcomes were achieved throughout each grant opportunity, including national reach, likely collaboration beyond the grant and capacity building of junior researchers.
- Over two-thirds of survey respondents indicated that national collaboration had a positive impact on research outcomes, and participants in the qualitative research attributed this success to increasing the diversity of expertise and resources available.
- Many respondents indicated that the benefits of collaboration outweighed the drawbacks, and this perspective was even more widespread in successful applicants. Some additional benefits of collaboration included strengthening research networks and engaging in other collaborative opportunities.
- A higher share of successful applicant respondents identified additional benefits (on top of research outcomes) that resulted from participation in their grant opportunity than unsuccessful applicants.
- Some respondents also identified some drawbacks of collaboration, including resource-intensiveness and the risk of a lack of genuine collaboration. Participants further highlighted there were increased administrative burdens associated with national collaboration, and that decision-making was sometimes more centralised than inclusive.

2.1. Collaboration research outcomes and impacts

For the purposes of this evaluation, the NHMRC defined seven outcomes⁵ and impacts that researchers and research teams should demonstrate as part of national research collaborations from large scale priority-driven grants. The extent to which respondents considered these outcomes were achieved in the grants they were involved with, is presented in Figure 1.

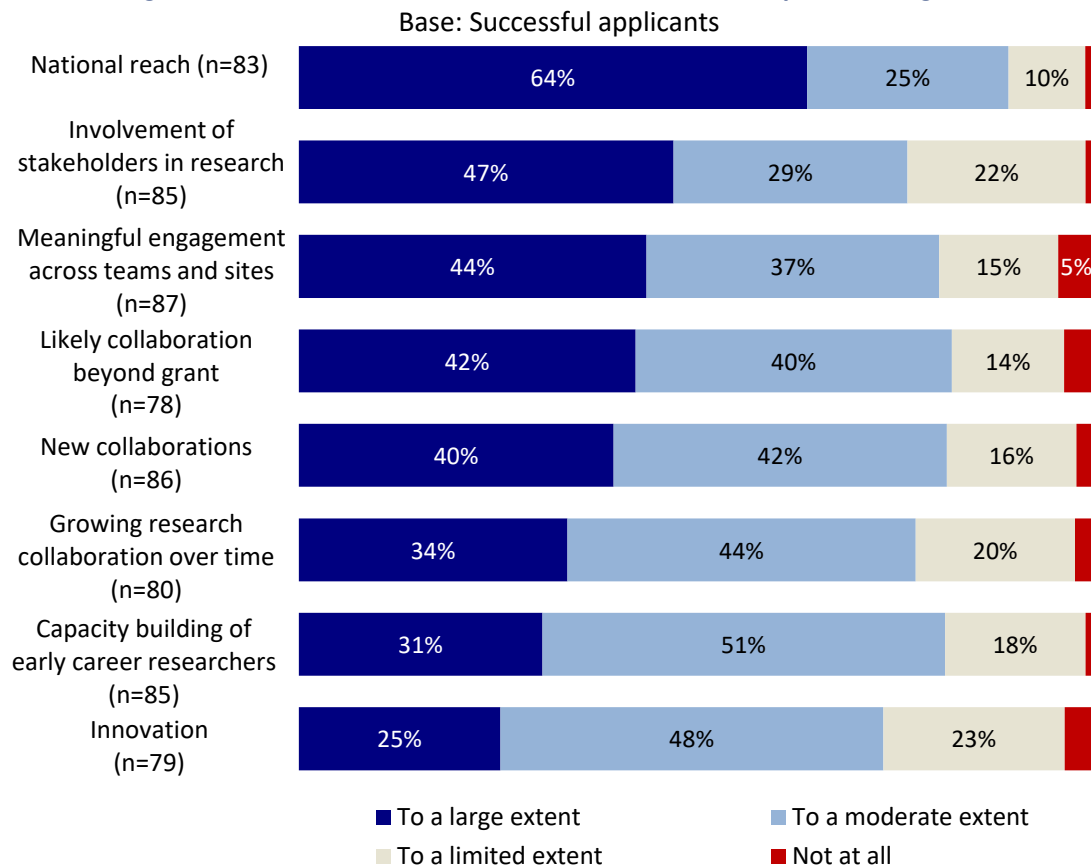
This figure shows that 73% or more of successful applicants considered the grant opportunities they were involved with had achieved each of these seven collaboration success factors to at least a moderate extent, and between 25% and 64% considered they were achieved to a large extent.

- A higher proportion of respondents indicated that national reach (64%), involvements of stakeholders in research (47%) and meaningful engagement across research teams and sites (44%) were achieved 'to a large extent'.

⁵ The research explored stakeholder perceptions of the extent that collaboration occurring during grant opportunities achieved broad research outcomes. It did not, however, attempt to directly estimate the relationship between levels of collaboration and research outcomes.

- A lower proportion of respondents indicated that capacity building of early career researchers (31%) and innovation (25%) were achieved to this level.

Figure 1: The extent of collaboration outcomes and impacts from grants



Feedback from the qualitative research also suggested the full range of collaboration outcomes were achieved across the evaluated grant opportunities and that these collaborations led to a range of positive impacts. Most participants involved in successful grant applications were able to provide examples of how various collaboration outcomes had occurred in their grant. Some of the examples are presented in the quotes overleaf.

“The grant has kickstarted a lot of collaborations, which have continued or even expanded in the time since...we’re much better placed for having these stronger collaborations, both at the research level and the health service delivery level”—

Successful applicant

“This grant has certainly increased lived experience involvement in the research”—Successful applicant

“We held an annual meet-up, like a little conference where we would share our work and our findings, to get together face-to-face and to give any PhD students or early career researchers the opportunity to network... there’s nothing like getting everyone in a room together and the discussions that come from bouncing off of one another”—Successful applicant

“My experience has been that you benefit by including people from different institutions and different parts of the country in research – Australia is served well by the experts across the country in different fields all working together”—

Unsuccessful applicant

“[These grants] are really capacity building things, so we would involve mid-career researchers in our annual meetings and set up mentorships with someone external to their own group and institution”—Successful applicant

“This grant brought in a series of new researchers... which has been really positive in terms of shifting the paradigm of risk into one of a strength-based approach about wellbeing and [health]”—Successful applicant

“We were very focused on supporting scholarships and building capacity for the future. We were able to work with TAFES and schools to bring on researchers and undergraduates”—Successful applicant

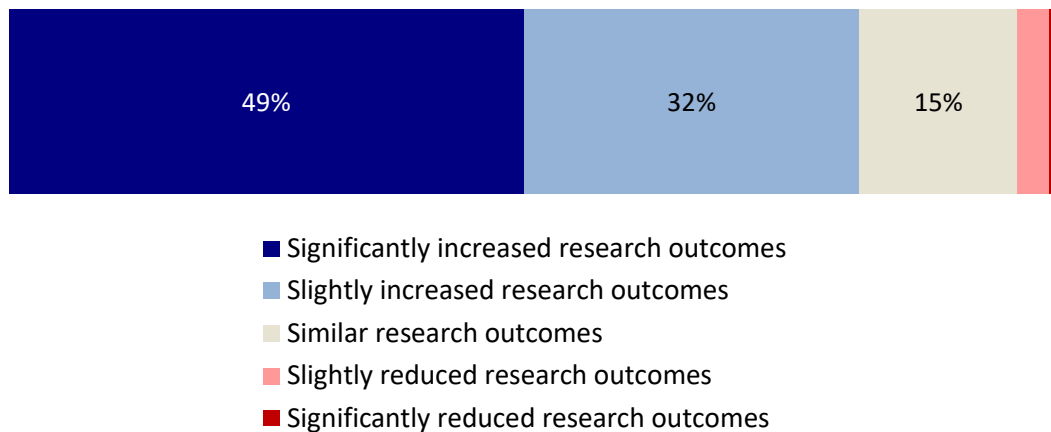
IMPACTS OF COLLABORATION ON RESEARCH OUTCOMES

The research found the vast majority of stakeholders considered national research collaboration to have a positive impact on research outcomes.

As shown in Figure 2, 49% of respondents indicated collaboration *significantly* increased research outcomes, and 32% indicated it *slightly* increased research outcomes. Only 15% of respondents reported that it led to similar research outcomes and 4% considered it decreased outcomes.

Figure 2: The impact of collaboration on research outcomes

Base: Successful applicants (n=75)




Participants in the qualitative research reported that large scale collaboration contributed to enhanced research outcomes by:

- Creating **research teams that were more diverse** and with **greater expertise**, which supported knowledge sharing and adoption of leading practices through:
 - **collaboration across different institutions and jurisdictions** – allowing experts in different fields to bring their unique knowledge and/ or local expertise to the project;
 - **collaboration with non-academic collaborators** (e.g. clinicians, allied health practitioners, people with lived experience/ community members) – which was felt to bring a practical “on-the-ground” perspective that assisted with research translation and ensured that research outcomes were in-line with community/ consumer needs and preferences;
 - **enabling a multidisciplinary approach to the research** – participants reported that this was important due to the complexity of many health and medical research areas and the highly specialised nature of many individual researchers’ areas of expertise. It also facilitated opportunities for clinicians, translational health researchers and “pure” scientists to collaborate which was reported to provide an important diversity of perspectives; and
 - facilitating **sharing of current best practice** methods from multiple disciplines and institutions, increasing the opportunity for innovation and improvement.




“We were able to have regular community consultations...the conversations were so robust and helpful in guiding the research, but also meant there was an educational component which was excellent for outreach and meant the communities’ priorities and concerns were heard and represented”—Successful applicant

 *“[National collaboration is] critical. Often clinical researchers are very focused on the clinical components. It is important to bring in the social sciences and policy makers to understand uptake of these initiatives, and mathematical modelling and health economics to make the investment case to government and to do more on implications about what works and why and to identify the enablers and barriers”—Peer reviewer*


- **Providing access to more or better resources**, including:


- specialised lab equipment or administrative infrastructure, which may not always be available to smaller institutions; and
- more human resources, through larger research teams with more experienced researchers to expedite research processes and draw on the best expertise in the field.

 *“There have been instances where I’ve collaborated with groups overseas to do screenings for various biomarkers where the technology and expertise for those screenings wasn’t yet available in Australia... and then when it did become available it was extremely expensive, and the cost savings [of those collaborations] was in the hundreds of thousands of dollars”—Peer reviewer*

- **Increasing impact/ translatability of the research** by:

- providing access to larger and more diverse research samples, enabling research to be conducted faster and with more nationally representative and robust samples that were more generalisable; and
- creating connections with different state-based health authorities.

 *“[Collaboration was] needed due to the patient population – to be able to dip into patients with different circumstances, nationwide. It can be tricky to recruit for research, you need to have a big database. [On your own] you might have 50 in Sydney, 20 in Melbourne, but there must be 1000s out there that don’t know it. I don’t think we needed a lot of expertise in this case, it was more we needed patients”—Unsuccessful applicant*

 *“Collaboration enables you to generalise the outcomes of your research a lot better. Rather than focusing on a small geographical area, you can translate the learnings nationally or even internationally”—Successful applicant*

Despite the very positive overall view of the impact of collaboration on research outcomes, some participants also identified negative impacts on research outcomes, particularly if collaboration was not managed well. These are discussed further in section 2.5.

2.2. Overall perceived value of national collaborations

Overall, **most participants in the qualitative research placed a high value on national research collaboration** in their field and saw it as highly beneficial for individual researchers and institutions, building workforce capacity and capability in the health research sector, as well as to the research process and outcomes (as discussed in section 3).

Due to these benefits, most participants in the qualitative research reported that that they were already regularly collaborating with other researchers to some extent prior to their involvement in an NHMRC large scale priority-driven grant opportunity. Nonetheless, the survey found that the **grants were effective in increasing collaboration** for 89% of respondents (see Figure 11 on page 37).

“Collaboration is central to our work as scientists in the 21st century. The depth and breadth of skills and expertise required to address the research questions we are dealing with isn’t possible for one person – collaboration is a must”—Unsuccessful applicant

“I would say all researchers like the idea of been part of something bigger, and to some extent that’s contributing to other people’s work and having others contribute to your work... but it’s also the fact that you can actually see quite impressive and tangible outcomes out of a large-scale project like this”—Successful applicant

“We’re a small country but geographically spread apart. These big national initiatives present a chance to get the best of the best together to tackle a problem”—Unsuccessful applicant

“[Collaboration is] very important to catalyse research. Not just carry on what we are doing but create a step for change”—Successful applicant

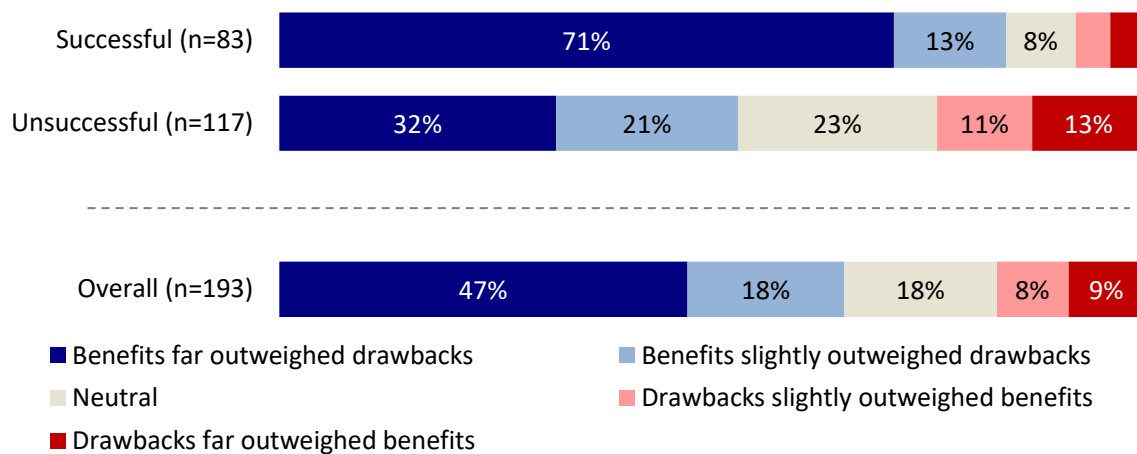
2.3. Benefits and drawbacks of grant collaboration

Successful and unsuccessful grant applicants were asked to consider, on balance, whether they felt that the benefits or drawbacks of the collaboration on their grant opportunity were greater.

Figure 3 shows that, 65% of respondents indicated the benefits of collaboration during their grant outweighed the drawbacks, a further 18% indicated they offset each other and 17% indicated the drawbacks outweighed the benefits. A much higher share of successful applicants considered the benefits outweighed the drawbacks (84%) than unsuccessful applicants (53%).

Figure 3: Views on the relative benefits and drawbacks of collaboration during grants

Base: Successful applicants and unsuccessful applicants (n=193)



2.4. Additional benefits of collaboration

Successful and unsuccessful grants applicants were asked to indicate if any of a list of *additional* benefits or outcomes (on top of research outcomes) had occurred as a result of their participation in their grant opportunity.

Figure 4 shows that the most commonly cited additional benefit was **networking and building relationships with research team partners and other researchers**; followed by **commencing or identifying additional collaborative opportunities**; and **securing new grants** with the research team.



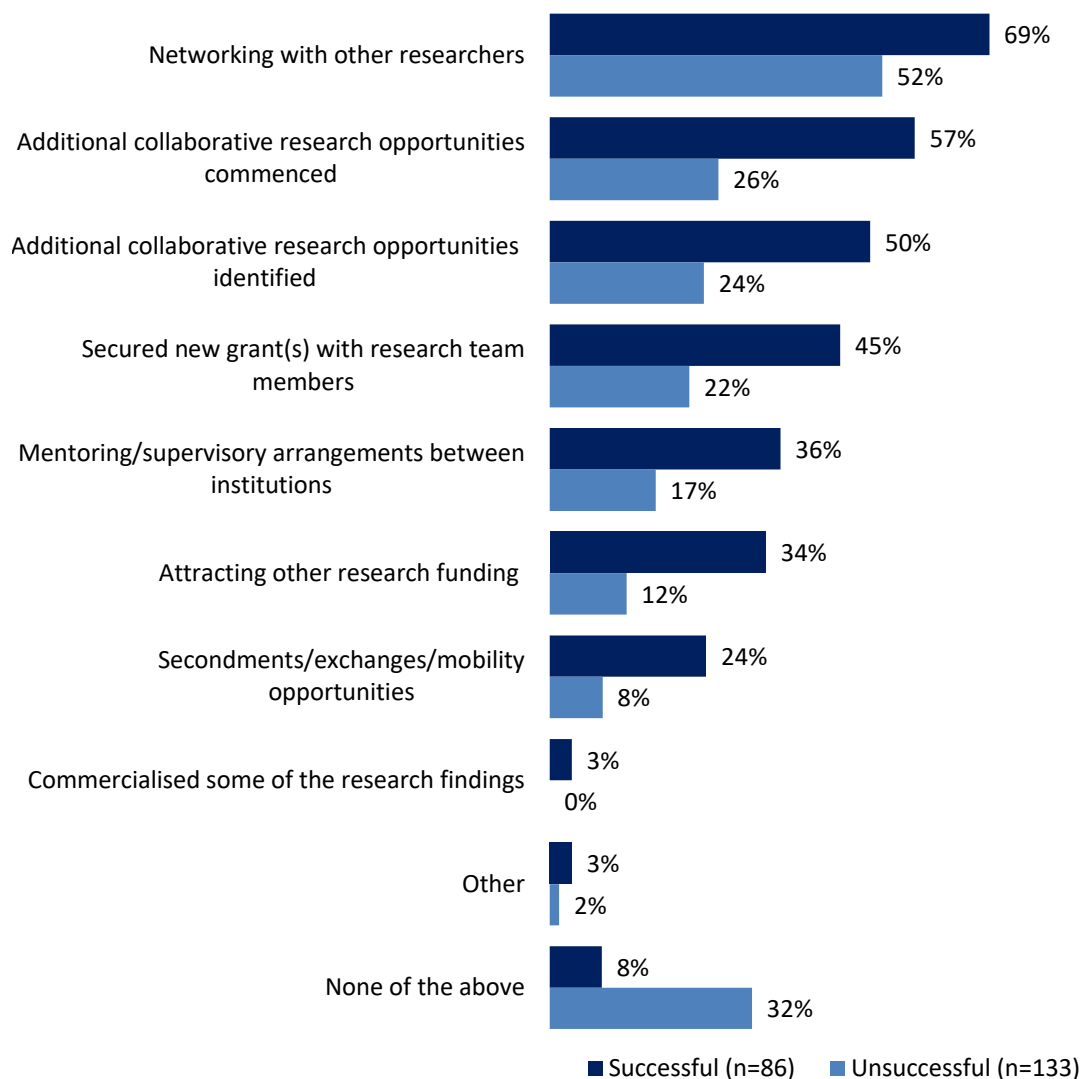
“We were able to take some of the concepts and the groundwork we’d done for the application and use them to apply for other funding”—Unsuccessful applicant

A higher proportion of successful applicants (92%) than unsuccessful applicants (68%) identified at least one of these additional benefits. There was also some variation in additional benefits identified across the different grant opportunities, for example:

- A higher proportion of respondents in the Targeted Call for a Genomics Revolution grant opportunity reported they had secured new grants (80%) than those involved in the SI in Mental Health (16%) and the SI in Human Health and Environmental Change (20%) grant opportunities.
- A higher proportion of respondents in the CRE in Infectious Disease (50%) and the Targeted Call for a Genomics Revolution (40%) grant opportunities indicated they had secured mobility opportunities than those involved in the SI in Mental Health (2%).


Figure 4: Prevalence of additional benefits of the grant application process


Base: Successful applicants and unsuccessful applicants (n=211) Multiple responses accepted




In addition to the above, the qualitative research identified the following benefits of national research collaborations that were reported to apply to the evaluated grants as well as large scale national research collaboration in general:

- **Benefits to the health and medical research sector through workforce development and capacity building** – including:
 - developing new research fields that require multiple disciplines (e.g. health and environmental change research);
 - building the capacity of early and mid-career researchers through greater opportunities for promotion, professional development and formal training; and
 - providing greater career development opportunities, including for researchers outside urban centres.


 *“[Collaboration-based grants are] the way to bring researchers onboard, through AI and research associate positions. Grants like this allow cross institutional mentorship as well... you're not just mentoring locally but it lets you bring on novice and emerging researchers with more national support”—Successful applicant*

 *“Having funding for institutions outside of the central, urban areas is crucial. In the past, regional, rural and remote Australia has been increasingly left behind in academia and this has been reflected in the health outcomes in these areas”—Successful applicant*

- **Benefits to participating institutions** – including:
 - reputational benefits (e.g. being involved in large and significant research projects, or working in partnership with more high-profile/ ‘prestigious’ institutions); and
 - enhanced opportunities to attract talent due to high profile collaboration opportunities.
- **Increasing the effectiveness of individual researcher’s contribution to specific grant projects** as well as future projects and enhanced clinician researchers’ service delivery – including by:
 - **building the capacity of early and mid-career researchers** (as described above);
 - **identifying potential capacity gaps or needs** in the research team and developing ways to build required capacity; and
 - **building new relationships between researchers and expanding networks**, which build understanding of different specialities, including relationships across disciplines, jurisdictions and/ or institutions that may not have been formed otherwise and provided clinician researchers with more access to specialist knowledge and facilities which could be deployed in their practice.

 *“This grant was quite a substantial amount of money, so we were able to support students and provide fellowship funding... there are people whose careers are still happening here who say that’s thanks to the leg-up from an initial small grant to do a pilot study that we funded”—Successful applicant*

- **Enhancing research opportunities across Australia, including in Northern and Western Australia, regional areas and in smaller institutions** – participants from some smaller institutions and institutions in regional and non-East Coast locations felt that encouragement of national collaboration that included broad geographic and institutional coverage was particularly necessary to support capability building and career opportunities outside major institutions and metropolitan centres, as well as to address the disparity in health outcomes between metropolitan/ non-metropolitan areas. They reported that without focused national collaborations their institutions tended to be overlooked for major grant opportunities. In addition, being part of larger, national collaborations provided the necessary experience and track record for smaller institutions and their researchers to lead their own research programs in the future.

 *“Through the national collaborations I’ve been involved in... we’ve built links that allow us to access materials and information as well as people and working groups... we’ve built some of our regional collaborations and are able to interact within the region more... these groupings allow us to be more productive and have more influence at a national level and will help us to build cross-sectoral interactions in future”—Successful applicant*

- **Enhancing research opportunities and building capacity of First Nations researchers**— a few participants emphasized the importance and impact of largescale priority-driven grants opportunities, particularly the National Network of First Nations Health Researchers, and focus on First Nations consultation and outcomes.



“I can’t stress more the importance [of national collaboration] – there are few Indigenous researchers, more limited senior and late career researchers. Maybe 50 Aboriginal researchers in Australia are professorial and fewer Torres Strait Islanders. The numbers are not going to grow quickly but an effort like this being cross-institutional and international provides an open pool of researchers to work with”—Successful applicant



“You could tell which ones were ticking the box and those meaningfully engaging Aboriginal and Torres Strait Islanders. I loved that this was a priority. I hadn’t seen this requirement in Australia... in applications that were genuine, Aboriginal and Torres Strait Islanders were named as co-investigators not an add on at the end, but mentioned throughout applications. Not just research assistants but valuable members of the team”—Peer reviewer

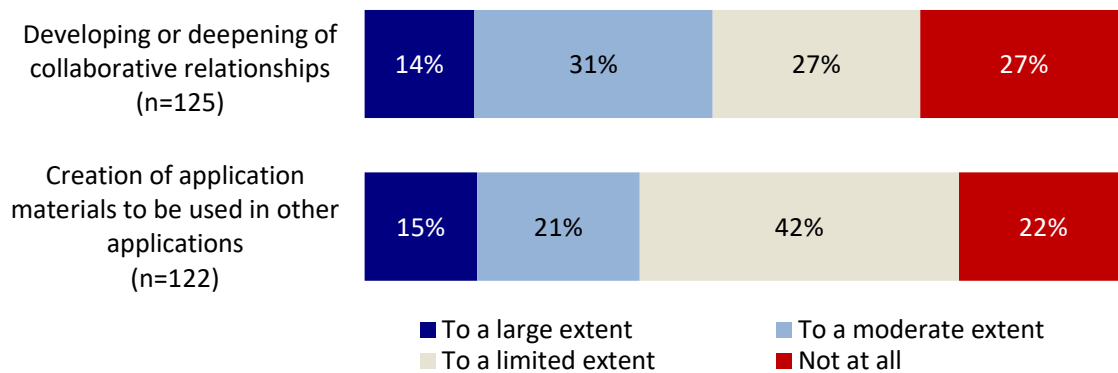
BENEFITS FOR UNSUCCESSFUL APPLICANTS

Figure 5 below demonstrates the extent to which unsuccessful applicants considered that participation in the grant application process of their grant opportunity had led to the benefits and outcomes of developing or deepening collaborative relationships within their research team and of creation of application material to be used in other grant applications. This figure shows that mixed views were recorded in this area, with:

- 46% of unsuccessful applicants reporting the application processes developed their collaborative relationships to at least a moderate extent, while 27% indicated it did not lead to this benefit at all; and
- 36% of unsuccessful applicants reported the process led to creation of application material for other applications to at least a moderate extent, while 22% indicated it did not lead to this benefit at all.

Figure 5: Extent to which grant application process led to benefits

Base: Unsuccessful applicants



EXTENT THAT UNSUCCESSFUL APPLICANTS HAD BEEN INVOLVED IN GRANT RESEARCH

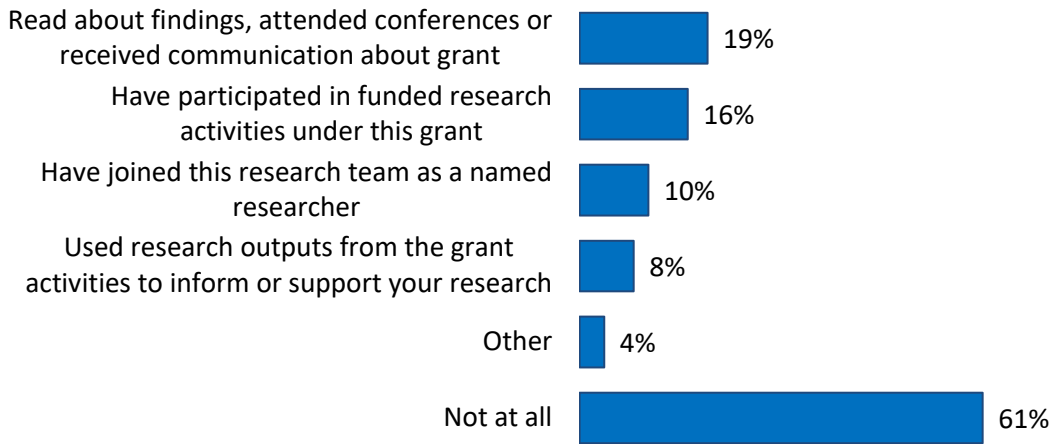
Unsuccessful grant applicants were also asked the extent to which they have used or been involved in the research undertaken by the research team that was successful in receiving fundings under the grant opportunity they applied for.

Figure 6 shows that just under 40% of unsuccessful applicants had been involved in grant activities, most commonly:

- reading about findings, attending conferences or receiving communication about activities (19%); and
- participating in funded research activities under the grant (16%).

Figure 6: Extent to which unsuccessful grant applicants were involved in the research undertaken by the successful research team

Base: Unsuccessful applicants (n=134) Multiple responses accepted



2.5. Drawbacks and negative impacts of collaboration

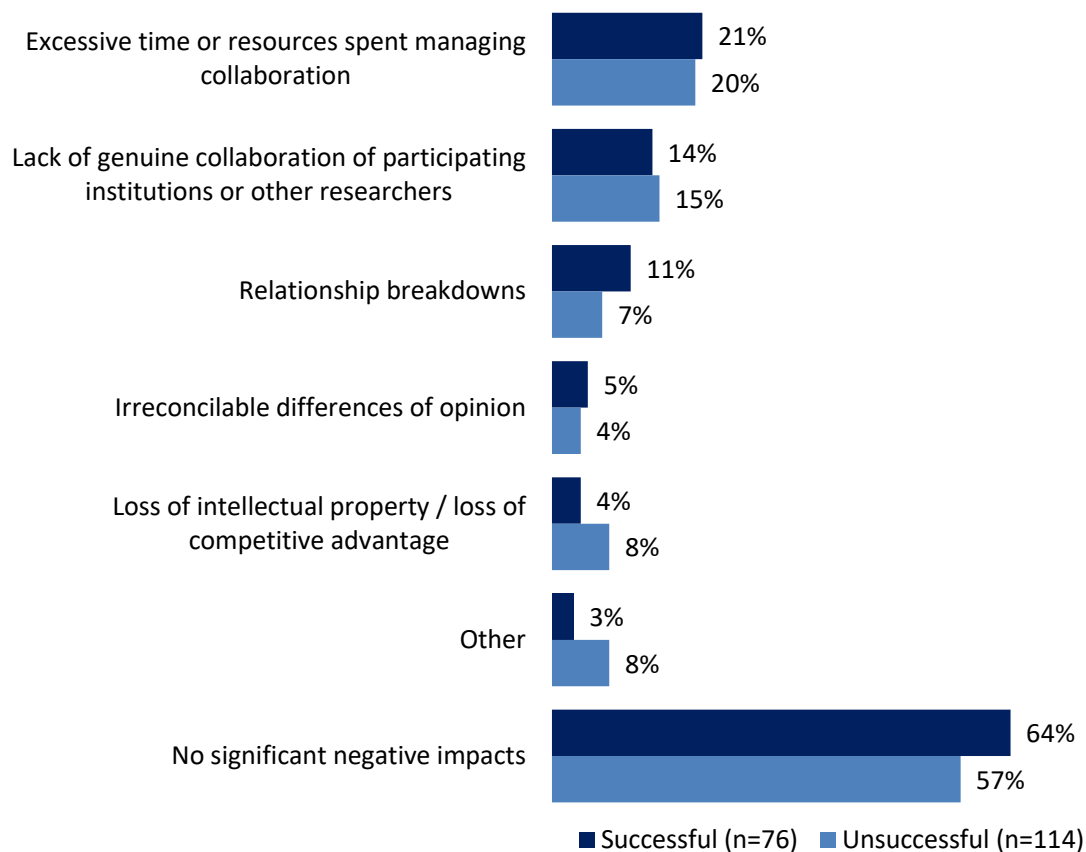
Successful and unsuccessful applicants were also asked whether any negative impacts had occurred because of their institution’s participation in the grant opportunity.

Figure 7 shows that **most** successful (64%) and unsuccessful (57%) applicants indicated that **no significant costs or negative impacts had occurred** as a result of their institution’s participation in the grant opportunity. This figure also shows that, of those that did report negative impacts, this most commonly involved:

- excessive time and resources required to manage collaboration;
- lack of genuine collaboration from participating researchers and institutions; and
- relationship breakdowns.

Figure 7: Negative impacts of participation in grant application processes or opportunity

Base: Successful applicants and unsuccessful applicants, Multiple response accepted



The qualitative research provided some further context in relation to negative impacts/ drawbacks that some stakeholders had experienced as a result of participation in the grant application processes. In particular:

- Many participants noted that in general there were additional complexities and challenges associated with administering large scale collaborations as they tended to involve substantially **higher administrative burdens** that were not always considered and/ or allocated sufficient resourcing and time towards. Aspects in relation to the funded grants that were found to contribute to perceptions of excessive **management time and resource** burden included:

- The large number of CIs and institutions involved in some grants (i.e. the SI in Mental Health, the SI in Human Health and Environmental Change and the National Network of Aboriginal and Torres Strait Islander Health Researchers), which was reported to have led to **significant administrative delays** in setting up projects and/ or getting agreements between different researchers/ institutions finalised, which had delayed the start of research by up to a year in some cases.
- **Smaller institutions** didn't always have the required structures or resources (including staff dedicated to research administration) to efficiently contribute to grant administrative and reporting requirements, which was reported to result in senior researchers spending significant time on administration.
- **Negotiating Memoranda of Understanding (MOU)** between institutions post award had been particularly time consuming, with one participant noting they had been required to re-negotiate every year and this process had become increasingly complex across the life of the grant. It was also noted that this could be more challenging for grants that involved organisations outside the university sector that didn't have access to legal support. One participant from an administering institution felt this was one area that NHMRC could provide increased support.
- **Co-ordination and communication** was more difficult at a national level, particularly when it involved new relationships across dispersed sites. A few participants noted that capability and capacity strengths and weakness across dispersed sites may not initially be understood.



“Paperwork between universities is becoming phenomenal. It can take up to one year to resolve contracts and this often falls on the researcher. The more institutions involved, the more paperwork and administration. This time is not really accounted for on top of research and capacity building... researchers are not trained on how to navigate legal contracts” — Peer reviewer



“Negotiating the MOUs is an administrative nightmare... not only after the grant was successful but each year revising the financial details as well... it would be great if NHMRC could review and revise the MOU process, it needs to be a shorter timeframe and institutions must agree not to add things on” —Successful applicant

- Overall, many participants noted that the character and ethos of administering institutions and lead researchers and their commitment to genuine collaboration and cooperation was highly influential on the success of a collaboration. A few participants (who tended to be from outside the administering institution) reported that they had experienced a **lack of genuine collaboration/ cooperation** on their grant – specifically:
 - A few participants reported that they had been involved in grants where collaboration was not sufficiently encouraged or effectively facilitated by the lead researcher and institution and/ or that decision making had been too centralised. These participants felt that there should be more oversight of lead researchers by the NHMRC.
 - A few of these participants perceived that the grant funding was not directed towards the goals originally stated in the grant application, but directed more towards the lead researcher/ administering institution's goals.



“The level of collaboration that actually happens comes down to the ethos of the CIs... I've seen it happen really effectively but that was mostly due to the personality and motivations of the CIA leading” —Successful applicant

- A few participants reported that the larger number of researchers involved in the grant they had been a part of had **diluted the impact of funding** – limiting **individual researchers’ ability to be meaningfully involved in the project** or **receive adequate funding** to conduct significant projects. As such, they felt they were “just making up numbers” on the application.
 - While the diluted impact of funding was raised by participants across several grants, it was most common cited by those involved in the National Network for Aboriginal and Torres Strait Islander Health Researchers grant. The survey showed that only 38% of respondents involved in this grant indicated it had led to increased research outcomes, while the remainder considered it had led to similar outcomes. The qualitative research suggests that lower reported impacts on research outcomes seen for this grant could be due to the large numbers of researchers involved in the network and the application process (that involved multiple initial application teams being brought together and asked to form a single application) – a few participants felt that this had reduced the impact of the research proposed in the original applications as there had been insufficient funding “to go around” and the administrative and co-ordination costs and complexity had been increased.



“Everyone is competitive for money and leadership of the area. The risk is they just chop up money. Researchers could just do a deal with each other and divvy up money via an MOU and do in an isolated way and have a workshop twice a year”—Peer reviewer

More broadly, a few participants noted that a drawback of national collaboration was that smaller institutions faced challenges in competing with larger institutions that had well-established research networks, infrastructure and resourcing to manage large scale collaborations. As such, having grant opportunities that facilitated their meaningful participation was seen as important by these participants.

3. Nature of collaboration achieved and perceived effectiveness

This chapter presents findings about stakeholder views of the overall effectiveness of the evaluated grant opportunities in supporting collaboration, and outlines the nature of collaboration both during and after the grant.



Key findings

- Around half of respondents provided positive ratings of the effectiveness, in terms of impact on national collaboration, of the NHMRC priority-driven grant opportunities and the NHMRC processes to develop and implement them.
 - However, this masks variation in ratings of these aspects between stakeholder groups. In particular, over 70% of successful applicants and peer reviewers rated these aspects positive, compared with only 33% of unsuccessful applicants.
- Collaboration between institutions (95%), disciplines (80%) and jurisdictions (76%) was common for successful applicants. However, less than half of this cohort indicated that sharing of resources and materials occurred during the grant.
- Most reported high levels of collaboration during grants, that collaboration increased following commencement of the grant, and that the extent of collaboration continued to increase during the grant. Collaboration occurred at most career levels and was slightly more prevalent at more senior level.
- Over 90% of respondents indicated at least some collaboration was sustained after the grant, with half sustaining collaboration at levels comparable to what occurred during the grant. The extent of ongoing collaboration after grants ended was often due to the success of participants in securing additional funding as well as the links and relationships between researchers.

3.1. Nature of collaboration during large scale priority-driven grant opportunities

The survey asked successful applicants to answer a series of questions about the nature and level of research collaboration that occurred during the term of their grant.⁶ Almost all (99%) of respondents indicated that at least some collaboration had occurred during the grant. Figure 8 shows that:

- Almost all respondents (95%) indicated collaboration included research activities involving teams from **multiple institutions**.
- Around three quarters of respondents indicated that collaboration involved research activities involving teams with **multiple disciplines** (80%), research activities involving teams from multiple **States and Territories** (76%) and **regular engagement** between research team (72%).
- Half of respondents indicated collaboration involved **sharing data and/or unpublished research findings** between institutions.

⁶ Respondents involved in multiple grants were asked to focus on the one grant they were most involved with in the application phase.

Less common collaboration activities included sharing of intellectual property between institutions (31%), sharing of research facilities between institutions (31%) and secondments/temporary transfers between institutions (23%).

Figure 8: Forms of collaboration during grant

Base: Successful applicants (n=94) Multiple responses accepted



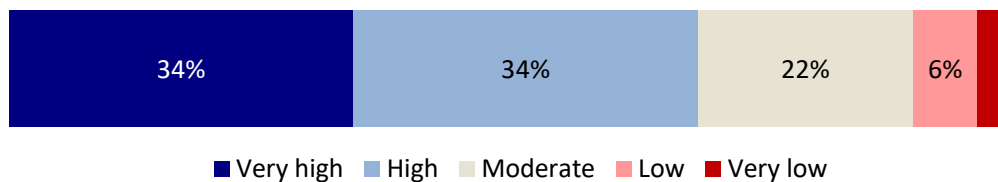
OVERALL LEVEL OF RESEARCH COLLABORATION DURING THE GRANT

The survey also asked successful applicants to indicate how they would describe the overall *level* of research collaboration that had occurred in their grant opportunity. Figure 9 shows that 69% of respondents considered the level of collaboration to be high, 22% considered it to be moderate and only 10% considered it to be low.

- The main reason that seven respondents considered the level of collaboration was low or very low was due to lack of genuine commitment to research collaboration from research team partners. The qualitative research found that the lead researchers and/ or lead institution for each grant had a significant impact on the level of genuine collaboration that was achieved throughout the grant, through the opportunities for sharing ideas and resources, and their overall commitment to fostering a culture of collaboration (discussed further in section 2.5).

Figure 9: Overall level of research collaboration during the grant

Base: Successful applicants (n=93)



The qualitative research identified the following strategies used by successful applicants to support effective collaboration during the grant:

- **Developing clear communications methods and channels** to facilitate collaboration and keeping all researchers informed about progress of different parts of the project, including by:
 - ensuring communication from grant leadership was open and transparent; and
 - developing a regular newsletter sent to all researchers to inform them of the progress of different aspects of the grant.
- **Facilitating knowledge sharing and building relationships between researchers**, including by:
 - holding conferences where all researchers could come together and share their research progress research to date (e.g. annually); and
 - ensuring that everything developed through the grant (e.g. particular research tools) were available for all researchers on the team to use.

“I was part of a couple of projects where we had subgroups of 10 or so people from different institutions that were interested and we started having monthly meetings and doing work, supervising students, testing patients and analysing data together... it kickstarted those relationships” –Successful applicant

“You can read all the literature you like to understand a topic, but what you can get from a conversation with someone on your team who has studied that for 20 years and can explain it to you... it’s so much more valuable” –Successful applicant

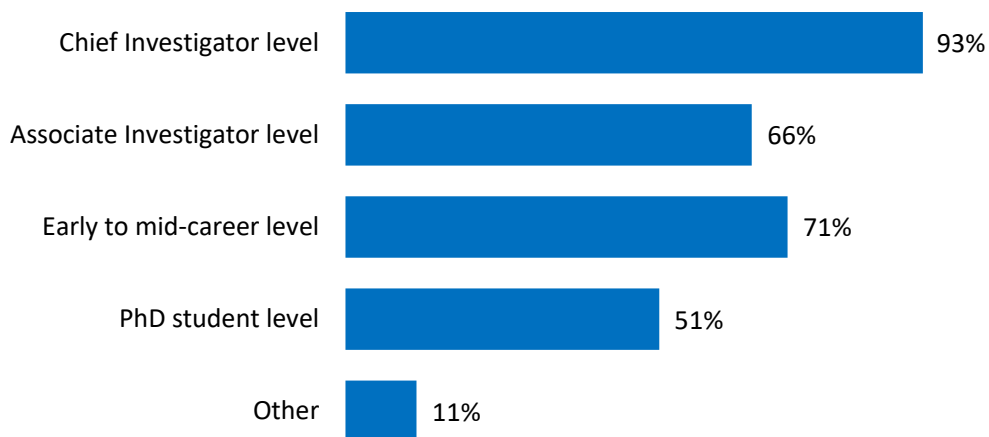
“This was a great opportunity with very successful results of trying to pull together a broad range of institutions and people... our motto was cross border, cross jurisdictional, cross disciplinary” –Successful applicant

CAREER LEVEL THAT COLLABORATION OCCURS

Most successful applicants indicated that collaboration occurred at all career levels in their grant, although it was most commonly observed at the chief investigator level (see Figure 10).

Figure 10: Career level of collaboration within grant opportunities

Base: Successful applicants and successful and unsuccessful applicants (n=87) Multiple responses accepted



CHANGE IN COLLABORATION LEVELS OVER TIME

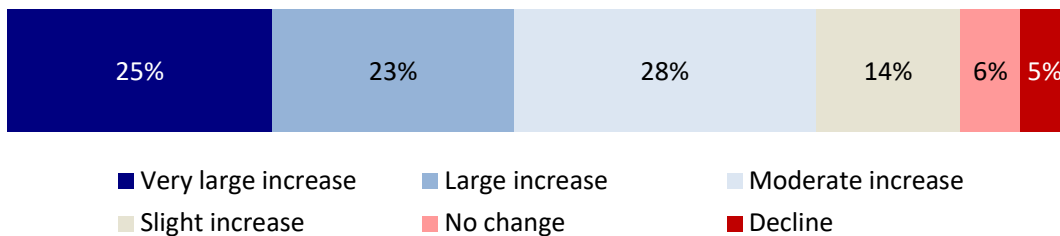
Successful grant applicants were asked the extent to which the level of research collaboration in their grant changed *compared to what existed prior to the grant* and how it *changed over the term of the grant*.

Changes in collaboration since before the grant commenced

Ninety per cent of respondents indicated the level of **collaboration increased compared to what existed prior to the grant**, while 5% indicated it declined. **Figure 11** shows that around half of respondents reported either a very large (25%) or large (23%) increase in collaboration compared with prior to the grant, 28% reported a moderate increase; and 14% reported a slight increase.

Figure 11: Change in research collaboration since before the grant

Base: Successful applicants (n=88)



Changes in collaboration over the term of the grant

Positively, **most respondents** also indicated that the level of **collaboration increased or remained consistent throughout the course of the grant**. **Figure 12** shows that 65% of survey respondents indicated the extent of research collaboration increased over the course of the grant, 24% indicated it remained consistent and only 11% indicated it declined.

Figure 12: Change in research collaboration during the term of the grant

Base: Successful applicants (n=79)



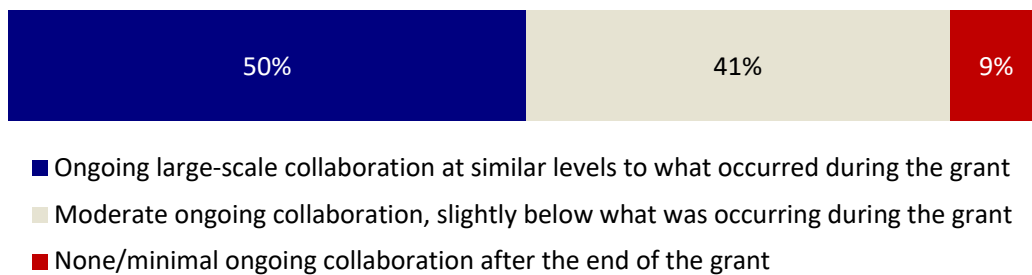
Although a high proportion of respondents considered grants have a clear positive impact on collaboration, the actual research outcomes of this collaboration are more difficult to measure, and were out of scope for the purposes of this research.

3.2. Collaboration after the grant

The survey also asked successful applicants whose grant had ended, the extent to which collaboration was sustained after the end of the grant. The survey found **an encouraging share of respondents noted ongoing collaboration had occurred after the grant had ended**. Figure 13 shows that:


- 50% of respondents indicated ongoing large-scale collaboration occurred after the grant ended, at similar levels to what occurred during the grant.
- 41% indicated moderate ongoing collaboration occurred (above what had occurred prior to the grant but below the levels during the grant).
- only 9% indicated no or minimal collaboration had occurred after the grant.

Figure 13: Extent of collaboration occurring after the grant ends
Base: Successful applicants whose research grant had ended (n=22)




When respondents were asked the reasons why the level of collaboration had either been sustained or had declined after the grant ended, most respondents linked this to the **availability of funding** as well as the **links and relationships between researchers** that had been built and/or strengthened during the grant. Several of those that indicated collaboration had been sustained linked this to securing new grants to pursue common areas of research and to maintain their network, while those who indicated their research team had not sustained collaboration after the grant ended commonly linked this to a lack of funding.

 *“Lack of ongoing funding”—Successful applicant*

 *“The relationships are sustained during the grant as there is funding and a financial backing. When the grant ends the collaborations will decline unless there is a further project or new grant work done”—Successful applicant*

The qualitative research also showed that ongoing large-scale collaboration requires further funding. However, participants also indicated that involvement in the priority-driven grants and the associated grant application process had created relationships that led them to apply for joint funding with other members of their research team and, in some cases, secure additional grants.

 *“I have since increased research collaboration with the people who were in bids I’ve been involved in – the successful bids but also the unsuccessful ones... we’ve got two or three bids currently in”—Successful applicant*

3.3. Effectiveness of NHMRC grant opportunities and processes in achieving national collaboration

EFFECTIVENESS OF GRANT OPPORTUNITIES IN FOSTERING COLLABORATION

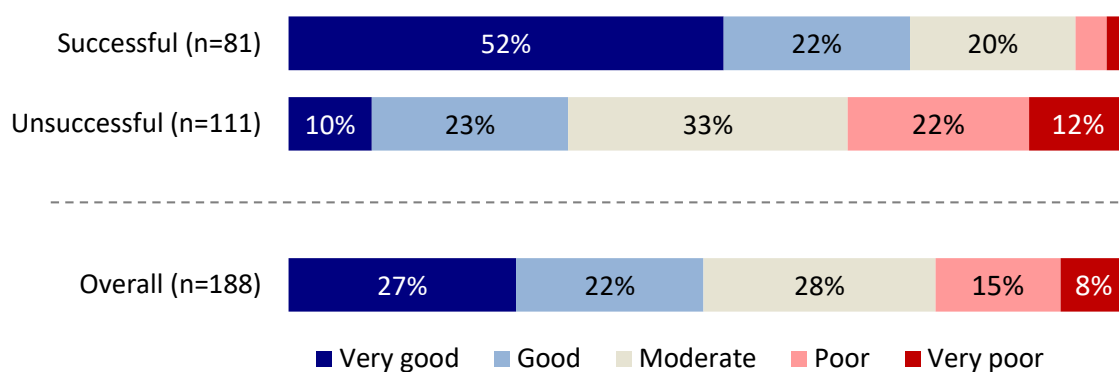
The survey asked all stakeholder groups except peer reviewers to provide their ratings of the overall effectiveness of the NHMRC priority-driven grant opportunity they were involved with in fostering effective national research collaboration.

Figure 14 shows that 49% of all respondents rated the effectiveness of their grant opportunity in achieving national research collaboration as good, while a further 28% rated it as moderate and 23% as poor. This figure also shows, however, that there was considerable difference in respondent ratings between successful and unsuccessful grant applicants:

- 74% of successful grant applicants⁷ rated the effectiveness of their grant opportunity in achieving national research collaboration as good and only 6% rated it as poor; and
- unsuccessful grant applicants were evenly split between good (33%), moderate (33%) and poor (33%) effectiveness ratings.

Figure 14: Overall rating of grant opportunity effectiveness in fostering national research collaboration

Base: All stakeholders apart from peer reviewers* (n=188)



* Only 3 RAOs answered this question and are therefore not presented separately in this chart.

The survey also found that there was considerable difference in effectiveness ratings between respondents involved in different grant opportunities. Table 5 shows:

- around two-thirds or more of respondents involved in the Targeted Call for Genomics Revolution and NA Tropical Disease Program grant opportunities rated the effectiveness of the grant opportunity as good (75% and 65%, respectively); and
- well under half of respondents involved in the SI in Mental Health (36%) and the National Network of First Nations Health Researchers (38%) grant opportunities rated the effectiveness as good, while 41% of respondents involved in the former grant opportunity rated its effectiveness as poor.

⁷ Throughout the report references to questions answered by ‘successful applicants’ also includes ‘successful and unsuccessful applicants’. See also section 1.4.1.

Table 5: Rating of grant opportunity effectiveness in fostering collaboration by grant opportunity*

	TCR Genomics (n=16)	Tropical Disease (n=19)	CRE Infectious Disease (n=5)	Human Health & EC (n=43)	CRE Dementia (n=52)	Boosting Dementia Research (n=5)	National FN Network (n=8)	Mental Health (n=39)	Total (n=188)
Good/very good	75%	65%	60%	53%	44%	40%	38%	36%	49%
Moderate	12%	20%	40%	21%	35%	60%	63%	23%	28%
Poor/very poor	13%	15%	0%	26%	21%	0%	0%	41%	23%

* Green highlighted results are more positive, and red highlighted results are less positive, than the total by at least 10 percentage points.

However, it is **important to take account of the compositional differences** in respondents involved in these grant opportunities when interpreting these finding (see box below).

Analysis of the impact of compositional differences in stakeholder type on ratings of grant opportunities' effectiveness in fostering collaboration

As noted in the methodology section (see section 1.3.3, pages 12-13), the Targeted Call for Genomics Revolution and the National Network of First Nations Health Researchers had no *unsuccessful* applicants, while most respondents involved in the SI in Mental Health, CRE in Dementia Research and NA Tropical Disease Program were *unsuccessful* applicants. When taking these compositional differences into account, the survey shows that:

- the highest effectiveness ratings for successful applicants were recorded for the CRE in Infectious Diseases Response (100%), CRE in Dementia Research (93%) and SI in Human Health and Environmental Change (86%), compared with under half of those involved in the National Network of First Nations Health Researchers (38%) and Boosting Dementia Research (40%) grant opportunities; and
- less than one-third of *unsuccessful applicants* provided positive ratings of the effectiveness of *most* grants in fostering effective collaboration. The one exception¹ was the NA Tropical Disease Program (57%).

Most successful applicants who participated in the qualitative research also indicated that various positive collaboration outcomes had been achieved during the grant opportunity (see section 3.1).

EFFECTIVENESS OF NHMRC PROCESSES IN FOSTERING COLLABORATION

The survey asked all stakeholder groups to provide their ratings of the overall effectiveness of NHMRC processes with respect to developing and implementing priority-driven grant opportunities in fostering national research collaboration.

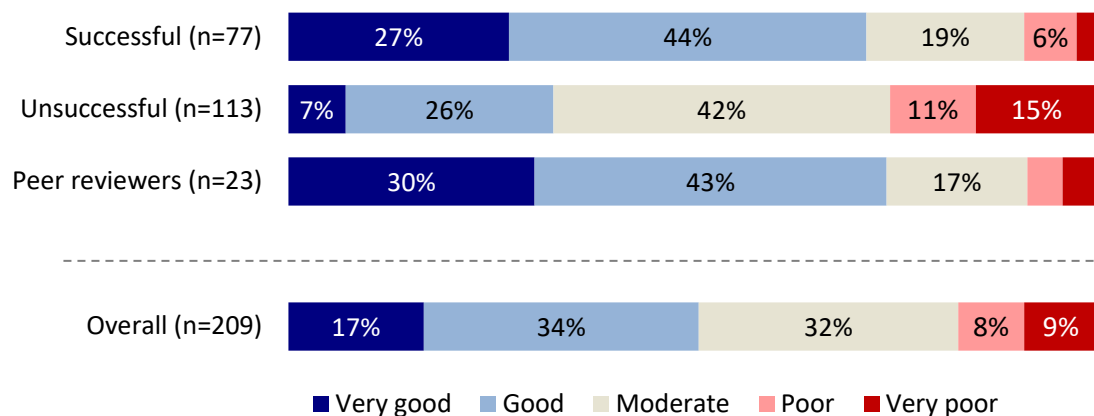
Figure 15 shows that 51% of respondents rated the effectiveness of NHMRC processes as good at fostering national research collaboration, 32% rated them as moderate and 17% as poor. Similar to the above findings about the effectiveness of the grants themselves, this figure also shows that a much lower proportion of unsuccessful applicants rated these processes positively than successful applicants or peer reviewers:

- 74% of peer reviewers and 71% of successful grant applicants rated the effectiveness NHMRC processes in development and implementing these grant opportunities as good at fostering national research collaboration, while 9% of both groups rated them as poor; and

- only 33% of unsuccessful grant applicants rated NHMRC processes as good in this area, 42% moderate and 26% poor.

Figure 15: Overall rating of effectiveness of NHMRC’s processes in fostering collaboration

Base: All stakeholders (n=209)



* Only 3 RAOs answered this question and are therefore not presented separately in this chart.

There was also considerable differences in ratings of NHMRC processes between respondents involved in different grant opportunities. Table 6 shows that:

- Almost three-quarters of respondents involved in the National Network of First Nations Health Researchers (73%), Targeted Call for Genomics Revolution (71%) and CRE in Infectious Disease Response (71%) grant opportunities rated these processes as good.
- Only 36% of respondents involved in the SI in Mental Health grant opportunity rated them as good and the same proportion rated them as poor.

Table 6: Rating of effectiveness of NHMRC’s processes in fostering collaboration by grant opportunity

	National FN Network (n=11)	TCR Genomics (n=14)	CRE Infectious Disease (n=6)	Tropical Disease (n=25)	Human Health & EC (n=51)	Boosting Dementia Research (n=6)	CRE Dementia (n=59)	Mental Health (n=37)	Total (n=209)
Good/very good	73%	71%	71%	60%	51%	50%	44%	36%	51%
Moderate	27%	14%	29%	28%	31%	33%	42%	28%	32%
Poor/very poor	0%	14%	0%	12%	18%	17%	14%	36%	17%

* Green highlighted results are more positive, and red highlighted results are less positive, than the total by at least 10 percentage points.

Differences in the composition of respondent stakeholder types between grants also impacted considerably on the ratings of the effectiveness of NHMRC processes in fostering collaboration (see box overleaf).

Analysis of the impact of compositional differences in stakeholder type on ratings of the effectiveness of NHMRC's processes in fostering collaboration by grant opportunity

Differences in the composition of respondent stakeholder types between grants also impacted considerably on these ratings:

- At least 70% of successful applicants in the CRE in Dementia Research (92%), SI in Human Health and Environmental Change (76%), and Targeted Call for Genomics Revolution (71%) grants rated NHMRC processes favourably with respect to achieving research collaboration.
- In contrast, less than one-third of unsuccessful applicants provided positive ratings of the effectiveness of NHMRC processes in most grants. The two more positively rated grant opportunities were CRE in Infectious Disease Response and NA Tropical Disease Program, where 67% and 53% of unsuccessful applicants respectively rated the NHMRC processes as good or very good.

4. Enablers and barriers to collaboration

This chapter presents findings about stakeholder views of the enablers and barriers to national collaboration identified through the research.



Key findings

- A broad range of factors impacted on the success of research collaboration in priority-driven grant opportunities. These were a mix of factors inside and outside the NHMRC's control.
- Existing relationships between researchers and institutions, the emphasis on collaboration in grant selection criteria, and funding amounts were the most cited enablers.
 - NHMRC workshops and the grant duration were less commonly cited.
 - Meaningful commitment of research team leadership and their skills and capability in fostering collaboration were also identified as critical.
- The limited time to prepare grant applications and grant funding amounts were the most cited barriers, reflecting the resource-intensiveness and administrative costs of collaboration.
 - Some identified competition between rival research teams as contrary to collaboration and cooperation objectives and resulting in some leading experts being unable to contribute to research in the national interest.
 - In contrast, a few felt that merging of different teams into a single bid could lessen the effectiveness of working relationships and dilute funding to the extent it could prevent achievement of significant outcomes.
- The identification of NHMRC process aspects as both key enablers and barriers suggests careful consideration of these design parameters could influence the success of collaboration, albeit within the context of environmental factors like the quality of existing relationships and compatibility of underlying views on the research topic.

4.1. Enablers

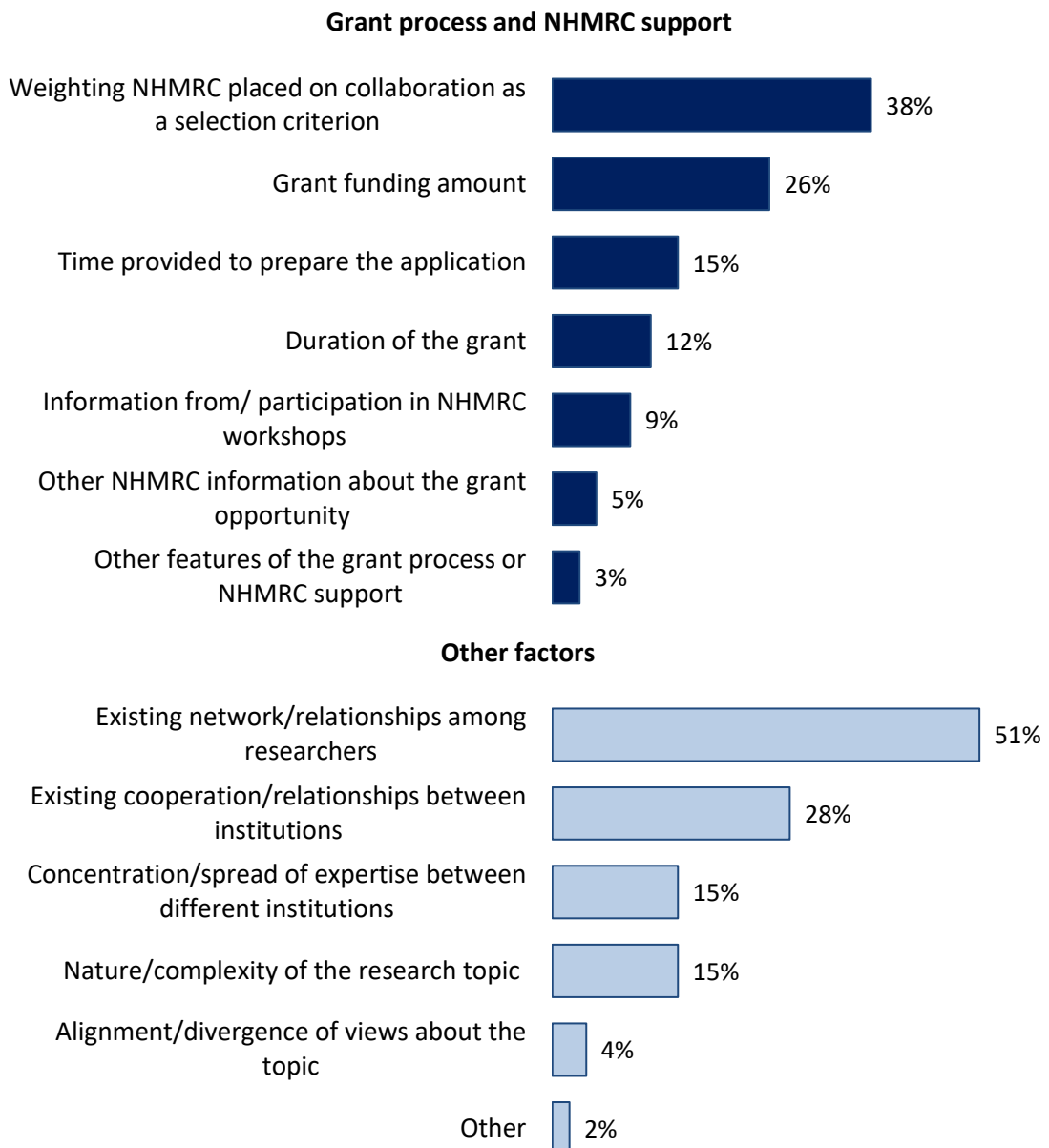
Respondents considered that the **most common factors that enabled or supported collaboration** for their grant opportunity were a mixture of NHMRC grant processes / support and factors beyond the control of the NHMRC. Figure 16 shows that:

- the two most important enablers related to grant processes and NHMRC support were **weighting or emphasis that the NHMRC placed on collaboration as a selection criterion** (38%) and **grant funding amount** (26%); and
- the two most important other enablers were the existing network of relationships among the researchers (51%) and the existing cooperation between research institutions (28%).

The figure shows that a further three grant process or NHMRC support factors were identified as key enablers by at least 9% of respondents, including the time provided to prepare applications (15%), the duration of grants (12%) and information from / participation in NHMRC workshops (9%).


Figure 16: Factors enabling collaboration in the grant opportunity

Base: Successful applicants, unsuccessful applicants and RAOS (n=247) Multiple responses (up to 3) accepted



The survey also asked respondents to provide a free text description of why they considered the factors they identified were the most common enablers to collaboration. The main themes of these comments include:

- Existing networks among researchers and/ or cooperation between institutions:** This was primarily because such existing networks and relationships facilitated team building, reduced risk and researchers preferred collaborating with those they already trusted. Respondents also reported these existing networks aided communication between institutions and mutual connections allowed researchers to foster new collaborations.


 *“This meant that we could get a team together in the short amount of time we had”—
Unsuccessful applicant*

 “[There is] too much risk involved unless most involved come from pre-existing networks”—*Successful applicant*

 “Existing levels of trust and prior relationships allowed proposals regarding collaboration to be developed rapidly and harmoniously”—*Unsuccessful applicant*


- **Weighting placed on collaboration** in the NHMRC selection criteria: The majority of respondents that chose this factor reported this helped streamline the important elements and focal points of their application. Many also reported this weighting encouraged them to consider the value of multi-disciplinary collaboration more deeply.

 “The weighting indicates the relevance of collaboration in gaining the grant and therefore encourages collaboration”—*Unsuccessful applicant*


 “The selection criteria are critical for a team to understand what is required for a successful outcome”—*Successful applicant*

- **Time provided to prepare the application:** respondents who chose this factor considered the available timeframe was adequate for communicating and planning with other researchers.
- **Grant funding amount:** these respondents considered the **large funding amounts** available through the grant opportunity was an **attractive incentive** for engaging in collaboration.
- **Duration of the grant:** respondent who chose this factor often indicated the **duration was sufficient for a more ambitious research design** that required collaboration.
- **NHMRC information and support processes** including workshops: this was felt to be an enabler because the resources **provided clear and accessible information**. Some also indicated the NHMRC workshops provided further **networking opportunities**.

Many participants in the qualitative research also noted that the commitment to meaningful collaboration of the grant leadership team and their skills and capability in building relationships and facilitating collaboration was a key enabler of successful collaboration.

 “I don't know how much the structural components of the [grants] have actually made it effective and how much is down to the skills, experience and abilities of the CI from that institution... what I've found is it's been more down to the individual and team [to drive effective collaboration]”—*Successful applicant*

Consistent with the survey findings, some participants in the qualitative research also felt that the **funding amount had also been a key enabler to collaboration**, as it had provided greater resourcing for research programs than what was typically available in their field, and had therefore **facilitated involvement of a greater number of institutions and researchers**. A few noted that in turn this had achieved efficiencies and economies of scale. However, many participants also raised insufficient funding as a barrier to national collaboration in general (i.e. in relation to other grant opportunities in their field), and a few raised it in relation to their specific grant (discussed in section 4.2 overleaf).

 “It was the economy of scale. There was enough resources to really support initiatives... rather than everyone scrambling for little bits... [the project] was able to achieve its goals far more effectively than if it had been 3 [grants] of \$500,000 a year”—*Successful applicant*

A couple of participants also emphasised the importance of effective governance and support within the successful research team to ensure that genuine collaboration occurred. This included having guidelines, rules and processes about the involvement of researchers from different institutions, and to facilitate decentralisation of decision making and support co-design. A couple of these participants also emphasised the importance of having effective administrative and support staff within teams to help coordinate and facilitate effective consultation, which was seen to be a valuable skill set and something that may not be done as well if allocated to researchers.



“Having an amazing admin person to coordinate the contract and arrange and facilitate communication. Having someone with a role to build and foster relationships can allow the researchers and stakeholders to focus on the research”—Peer reviewer

4.2. Barriers

The research also found that a mix of NHMRC process-related factors and other factors were also the main barriers to collaboration in large scale priority-driven grant opportunities, and that several of the factors that enabled positive collaboration could also be barriers (if ineffective).

Figure 17 shows that:

- the two most common barriers related to grant processes and NHMRC support were the **(lack of) time provided to prepare the application** (42%) and the **(limited) grant funding amount** (26%); and
 - A range of aspects of the NHMRC grant process and support were identified as major barriers by 7%-8% of respondents, including: the lack of weight on collaboration in selection criteria, grant duration, lack of involvement in / ineffective NHMRC workshops, and insufficient or ineffective NHMRC information.
- the four most common other enablers barriers were the alignment/divergence of views about the research topic (16%), low existing collaboration between institutions (13%), the concentration or spread of expertise between institutions (11%) and the nature/ complexity of the research topic (9%).

See figure overleaf for more details about these and other barriers from the qualitative research.

Figure 17: Factors that were barriers to collaboration in the grant opportunity
 Base: Successful applicants, unsuccessful applicants, and RAOS (n=184) Multiple response accepted

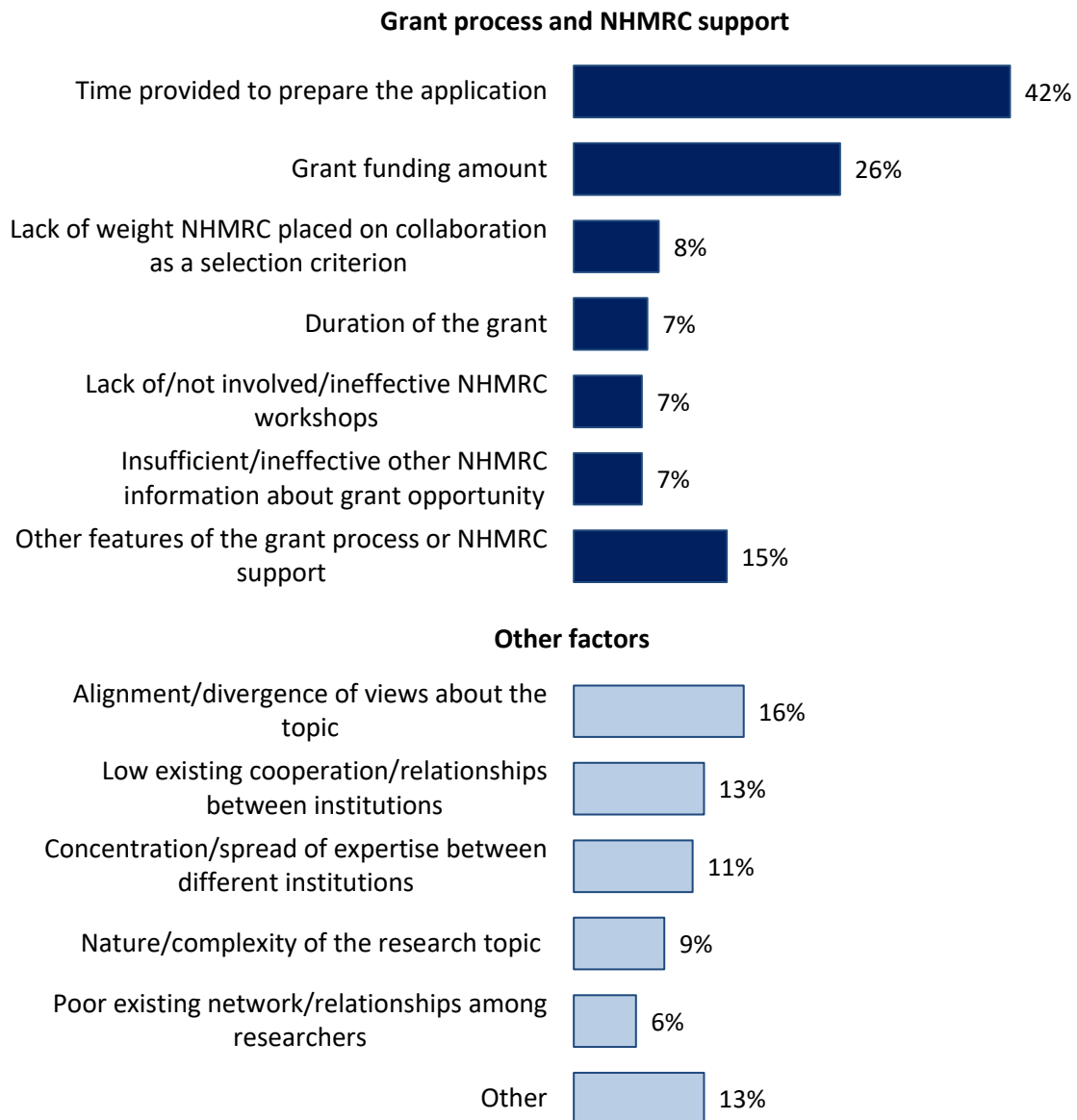


Figure 17 also shows that 15% of respondents identified an ‘other feature of the grant application process or NHMRC support’ as the main barrier for collaboration while 13% identified an ‘other’ barrier. The most common theme from these respondents was the **negative impacts of competition** for large-scale priority driven grant opportunities.

- These respondents, and several qualitative research participant, felt the competitive process divided the best researchers in Australia between alternative bids and that those involved in unsuccessful bids were unable to contribute to research in the national interest.
- Some of these respondents also felt the NHMRC should have done more to bring together the multiple bids.




“Why not repackage so we get Australia’s best working on this? This is a one-off chance we have wasted... we need Australia’s best people to get the right solutions”—Unsuccessful applicant

The qualitative research also asked participants to identify key barriers to collaboration and both the survey and qualitative research survey asked respondents to elaborate on why they considered identified factors were the most common barriers to collaboration. The main themes of this feedback included:

- **Time provided to prepare the application:** participants and respondents commonly indicated that the time available in the application process had limited the scope and form of collaboration. Effective collaborative research was seen to require specific intention and planning. This was particularly the case where collaboration included new relationships, as this required the opportunity for networking and building trust. Participants considered the time taken to prepare complex and large-scale collaborations, especially in new research fields was significant (see section 5.1 for further discussion). Some of these participants also acknowledged that time is a limiting factor for collaboration across all grants and is not an issue specific to NHMRC.

 *“Not sufficient time and opportunity to create new collaborations”—Unsuccessful applicant*

- **Grant funding amount:** participants and respondents also commonly indicated that insufficient funding for national collaboration was often a key barrier to effective national collaboration, especially as large-scale collaboration required significantly more investment than standard grants, due to the additional co-ordination and administrative costs. More specifically:
 - Inadequate funding amounts could make it difficult to get buy in from collaborators and institutions at the application stage, as it was not felt to be a good return on investment for institutions or enough to fund the involvement of CIs – this was raised by participants involved in the CRE in Dementia Research and the SI in Mental Health.
 - It was also noted that limited funding amounts had made it more challenging to include non-academic collaborators (such as peak bodies representing particular patient groups), who tended to have higher payment expectations than academic researchers funded by universities.
 - As discussed above, if a grant was not properly funded and/ or funding was **spread too thinly** across researchers it could **dilute impact** – some participants reported that once grant funding was split across many institutions and CIs the amount allocated to particular researchers was not adequate to support the intended research project/ and or additional funds were required from other sources.
 - This was a particular issue for the CRE in Dementia Research grant opportunity where funding was split into three \$3 million grants, which a few participants considered an insufficient amount, especially when collaborating with multiple universities. Additionally, it was noted that funding amounts for CREs generally had not been adjusted over the last 10 years to match inflation, while the expectations of the CREs had remained the same

 *“Although the grant funding amount was a significant enabler, it was not sufficient to directly support all Chief and Associate Investigators involved in the grant”—Successful applicant*

- **Lack of, or not being involved in, NHMRC workshops and support processes:** Those that identified this as a barrier to collaboration often reported they were unaware of these processes. Some also reported a lack of clarity in the information and support provided by the NHMRC.



“The lack of well described scoring descriptors meant we spent a lot of time disagreeing about what a good grant would look like”—Unsuccessful applicant

- **Lack of existing relationships between researchers and institutions:** These respondents indicated that these networks and relationships were important for collaboration (as reflected in section 4.1) and it was therefore difficult to manage, more time consuming and costly to establish them when they were limited or absent. Others indicated their existing networks often disagreed on how to approach the research.
- **Concentration or spread of expertise amongst institutions:** There was variation in respondents’ perspectives on how this constrained collaboration. Some felt the expertise was spread too widely to effectively coordinate collaboration, whereas others indicated the expertise was too concentrated, so it was easier to keep the collaboration narrow.
- **Increased difficulty for regional institutions/ researchers to collaborate:** This was considered an issue by some due to:
 - the travel time and costs associated;
 - having different local health/ community priorities that were not reflected by research projects undertaken by metropolitan research institutions;
 - not having up-to-date research or digital infrastructure which would be required to collaborate with larger institutions, due to limited resources; and
 - the lower geographic density of relevant researchers in their regional area;



“Sometimes funding gravitates to mature groups and better funded groups in Eastern Australia”—Successful applicant

- **Managing a large number of interests and egos** within a competitive academic environment: While this was seen to be more challenging in larger scale collaborations it was noted as an issue that could occur in any scale project.



“It can be difficult to build a network, there are always personalities involved”—Unsuccessful applicant

- **Merging of different research teams in a single bid:** The management of relationships among grant teams that had merged together from original proposals was also raised as a barrier to effective collaboration by a few participants. This provides a counterpoint to the commonly expressed view (see page 47) by participants and respondents that multiple competing bids could “split the field” and exclude some of the best researchers from winning research teams.



“As long as it is healthy competition it is a good thing. There was pressure to bring all researchers into the same [collaboration]. This can create some tensions. We did have negotiations to manage... forcing everyone into the same [group] may not necessarily work. Some work better together than others. It’s better to have a marriage of love than of convenience”—Successful applicant

- **Forming collaborations across areas/ jurisdictions with differing health and research priorities:** Some participants reported challenges in forming nation-wide collaborations on research topics or priorities which were specific to one area of Australia, such as tropical disease research.
- **Executing interstate collaborations during the COVID-19 pandemic due to lockdowns and/ or border closures:** Researchers impacted by this reported that they had received a grant extension to address this challenge and were still able to progress some aspects virtually.
- **Additional regulations involved when collaborating with clinicians** – which a few participants noted as increasing the time and complexity of establishing research collaborations.
- **Getting input from all key researchers on the application** – a couple of participants reported that the low success rate of grant applications meant that most applicants were working on multiple grant applications at once, and were more inclined to devote time to applications they were leading.

5. Consultation, application and peer review process

This chapter discusses findings related to the grant application and peer review processes, including time to establish teams and prepare applications and feedback on grant and Peer Review Guidelines. It also outlines suggestions for improvement in relation to these areas that were identified through the research.

Given that the research was conducted a considerable time after the application process was completed for some grants, as well as the fact that many participants were only involved in some aspects of the application process, some participants in the qualitative research experienced challenges in recalling the specifics of the processes and their experiences. As such, the findings in this chapter should not be interpreted as exhaustive.



Key findings

- Almost two-thirds of respondents took 2 months or less to establish the core members of their team.
- However, a higher proportion of those who took 3-6 months to establish the core members of their team considered this a sufficient timeframe to form effective collaborations.
- Participants suggested it would be beneficial to have a minimum of 6-12 months' notice before applications are due to allow adequate time to establish their teams.
- Respondents involved in a range of specified application processes (including expression of interest processes, briefings, workshops, peer review presentations and feedback processes) generally indicated they fostered collaboration.
- Most respondents indicated the Grant Opportunity Guidelines clearly emphasised the importance and nature of collaboration required for their applications.
- However, some participants felt the feedback they received was limited and difficult to implement, including feedback in relation to the nature of their research team/ proposed collaboration.
- Peer reviewers reported having insufficient opportunities for interaction with research teams about their grant applications.
- Almost all (91%) peer reviewers perceived the guidelines to place high importance on collaboration and indicated the weighting placed on national collaboration was particularly clear.
- Common suggestions for improvement included greater transparency regarding the opportunity and feedback and more emphasis of the nature of collaboration required. Participants also recommended the NHMRC discouraged institutions from limiting researchers to only one grant application (where NHMRC had scope to do so).

5.1. Time to establish teams and prepare applications

While almost half of respondents indicated that the time provided to prepare their application with respect to establishing an appropriate level of collaboration was 'about right', the qualitative

research found that even among participants who were able to complete their application within the allocated timeframe, most felt that additional time would have led to the formation of more effective collaborations and applications.

As shown in Figure 18 below, almost two-thirds (64%) of respondents took 2 months or less to establish the core members of their research team.

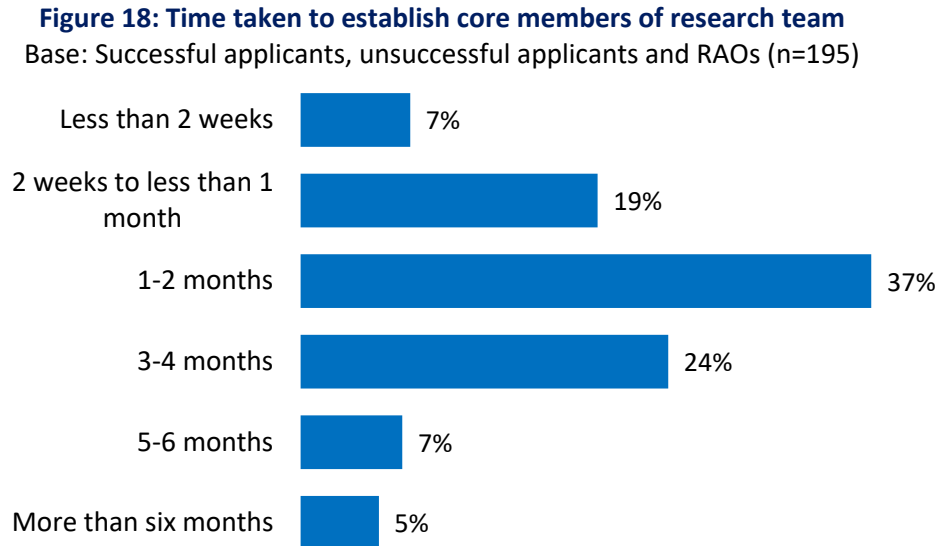


Table 7 shows that a higher proportion of successful grant applicants indicated they took 3 months or more (52%) to establish the core members of the research team than unsuccessful applicants (24%).

- At least half of respondents in the Targeted Call for Genomics Revolution (58%) and the SI in Human Health and Environmental Change (50%) indicated it took 3 months or more to establish the core members of their research teams.

Table 7: Time taken to establish core members of research team by stakeholder type

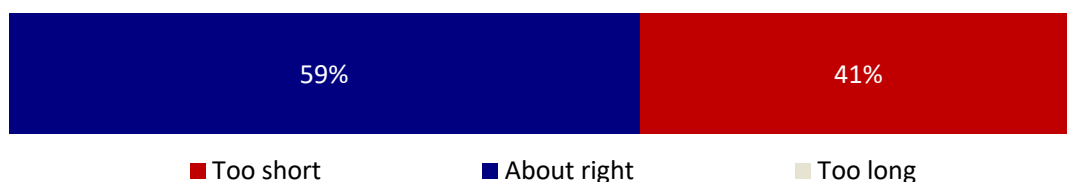
	Successful applicants (n=81)	Unsuccessful applicants (n=118)	RAOs (n=5)	Total (n=195)
Up to 2 months	48%	76%	60%	64%
3 months or more	52%	24%	40%	36%

Fifty-nine per cent of respondents considered there was an appropriate amount of time provided by the NHMRC to prepare grant application with respect to establishing an appropriate level of national collaboration for this grant, with the remaining 41% considering the time available was too short. No respondents considered that the timeframe was too long (i.e. longer than needed to establish the required collaborations).

- Over half of respondents in each grant opportunity considered that the time available was about right, with the highest proportion amongst those involved in the CRE in Infectious Disease Response and the Boosting Dementia Research grant opportunities (both 80% ‘about right’).
- Over 70% of those who took 3-4 months (72%) or 5-6 months (82%) to establish their core research team considered this timeframe about right to form effective collaborations.

Figure 19: Sufficiency of time provided by NHMRC to prepare application with respect to establishing appropriate national collaboration level

Base: Successful applicants, unsuccessful applicants and RAOs (n=216)



Qualitative research participants reported that it would be beneficial to have advanced warning of upcoming grant opportunities (i.e. a minimum of 6 months before the application was due, and up to 12 months) to provide adequate time to establish their team. Participants reported that establishing meaningful and effective research teams across institutions, jurisdictions and disciplines could be time consuming, particularly if they:

- **did not have an existing network of collaborators that would be well suited for the grant** – as such, participants felt that applicants with existing collaborative networks were advantaged in the application process and/ or that researchers may be discouraged from forming new or better collaborations due to compressed application timelines;
- **were working in a more complex field** which required collaboration across multiple disciplines (e.g. human health and environmental change);
- **needed a large number of CIs** to complete the grant application (e.g. in applications which called for/ allowed a large number of CIs); and/ or
- **were for newer areas of collaborative research** – i.e. without pre-existing research networks and/ or that were not aligned to expected areas of research.



“If you want national collaboration, you probably need at least 6 months from first call to application being due. That way you have time to think through what you want to achieve and who you think could be leaders in those areas, then you also need time to contact all of those people and get them on board... it’s a huge juggling exercise and the amount of time and work needed is exponential with a collaboration of this size” —Successful applicant



“Where we don’t get the [forewarning], you only have enough lead time to leverage collaborations that already exist” —RAO

5.2. Grant application processes

Survey respondents were asked to indicate whether they had been involved in five aspects of the grant application process and, if so, to rate these aspects on the extent to which they emphasized and facilitated collaboration.

Table 8 shows that between 10% (NHMRC workshops to develop full applications for successful research teams) and 25% (opportunity to submit an expression of interest) of applicants were involved in these five processes.

Table 8: Participation in grant processes and their focus on collaboration

Base: Successful and unsuccessful applicants (n=115-158)

	Proportion of respondents involved in this process	Did this process: emphasize the importance of new/expanded collaboration as a:				Did this process: provide the opportunity to identify/ initiate collaboration with other institutions/ researchers	
		selection criterion		grant outcome		% 'to a great extent'	% 'to a moderate extent'
	%	% 'to a great extent'	% 'to a moderate extent'	% 'to a great extent'	% 'to a moderate extent'	% 'to a great extent'	% 'to a moderate extent'
Opportunity to submit an Expression of Interest	25%	42%	42%	38%	50%	41%	38%
		84%		88%		78%	
NHMRC briefing to applicants about the grant opportunity	15%	44%	38%	56%	25%	47%	20%
		81%		81%		67%	
Workshop for successful teams to develop their full applications	10%	36%	36%	36%	45%	9%	55%
		73%		82%		64%	
Presentation by applicants to the peer review panel	18%	46%	33%	52%	26%	18%	59%
		79%		78%		77%	
Opportunity to revise their approach in response to NHMRC feedback	17%	53%	37%	55%	25%	26%	47%
		89%		80%		74%	


Table 8 also shows that most respondents who had participated in these processes considered they had to at least a moderate extent:


- emphasized the importance of new and expanded collaborations as a selection criteria;
 - the **opportunity to revise their approach** in response to NHMRC feedback (53%) was considered to do this 'to a great extent' by the highest share of respondents;
- emphasized the importance of new and expanded collaborations as a grant outcome;
 - over half of respondents considered that **NHMRC briefings** (56%), the **opportunity to revise their approach** in response to NHMRC feedback (55%) and the opportunity to **present to peer reviewers** (52%) did this to a great extent;
- provided the opportunity to identify and initiate collaboration with other institutions and researchers.

- the two early-stage processes, **NHMRC briefings** about the grant opportunity (47%) and the opportunity to submit an **expression of interest** (41%), were seen to do this ‘to a great extent’ by a higher share of respondents than the other processes.


The qualitative research also emphasised the importance of several of these processes in facilitating collaboration outcomes and generally supporting researchers in preparing their applications.

- A few participants in the qualitative research felt that including **NHMRC briefings/workshops about the grant opportunity** in addition to written grant guidelines was a very valuable part of the application process for large scale grants of this nature. Those that attended these briefings appreciated the scope it provided to receive clarification and ask questions, while those that were unable to attend them or who felt they had been excluded were often more critical of the application process in general (see below).

 *“I think there is value... to having those workshops, especially if you're either new to the process or it's a new version of the application process... doing it through a workshop allows a dynamic discussion on it, and questions and answers is helpful”—Successful applicant*

 *“The workshop was very collegiate. It was clear the grant was extremely important. NHMRC were keen to ensure all understood and had an easy time to put in application for those putting it together”—Successful applicant*

- A few participants considered the briefings/ workshops had not been well communicated and/ or were “closed”. They indicated it was difficult to identify who and how attendees were chosen and/ or felt the workshops were not easily accessible in their locations.
- **While participants generally provided positive feedback about communication from the NHMRC** during the application process, **a few applicants perceived a lack of follow-up** from NHMRC after they had registered their interest in the grant.
- The **importance of the expression of interest process** was also emphasized by several applicants as providing a way for research teams to put forward their broad research approach and potentially receive feedback and guidance from the NHMRC, without having to spend the considerable time and resources required for a full application. It was seen to allow more opportunity to adapt and fine tune approaches and establish and build more effective research teams over multiple stages.

 *“For such a big investment to just have one stage, one grant application and 6 months later you are successful or not. To just get one shot. I would have expected a more staged approach with an EOI, application and interview”—Successful applicant*

5.3. Grant opportunity Guidelines

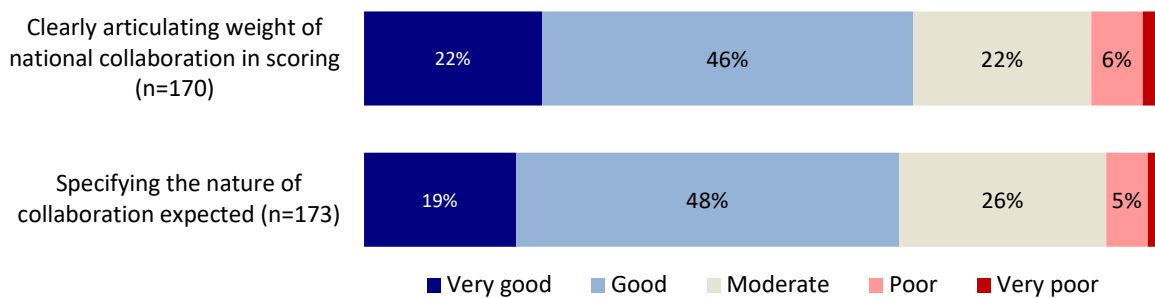
Eighty-four per cent of respondents considered that the Grant Opportunity Guidelines placed a high importance on collaboration, including 35% who rated this very high, while only 2% of respondent rated it as low.

Most respondents also provided positive ratings of the clarity of the Grant Opportunity Guidelines in specifying the nature of collaboration expected (67%) and its importance in scoring applications (69%) (see Figure 20).

- At least 60% of respondents in each grant opportunity considered the guidelines provided good clarity in specifying the nature of collaboration expected.
- At least two-thirds of respondents from most grant opportunities rated the Grant Opportunity Guidelines as good in specifying the weight of collaboration in scoring applications. The only exception was the SI in Mental Health (56%).

Figure 20: Clarity of the Grant Opportunity Guidelines

Base: Successful applicants, Unsuccessful applicants, and RAOs



While feedback on the clarity and importance of collaboration in the grant guidelines in the qualitative research was largely positive and many participants appreciated that the requirements for collaboration were not too prescriptive, a few applicants and RAOs felt that the application and assessment process lacked a requirement to demonstrate:

- how the collaboration would operate, including by justifying the involvement of the nominated CIs on the project – as a result a few had experience of being named in an application but not being able to meaningfully contribute to project; and
- appropriate consideration and allocation of funding – only a few participants had formally considered and agreed to funding arrangements during the application. As a result, the research found that there were some substantial delays in commencement of projects and/ or a few reports of researchers not being allocated funding they had expected to receive at the application stage and as a result felt they were not making a meaningful contribution.

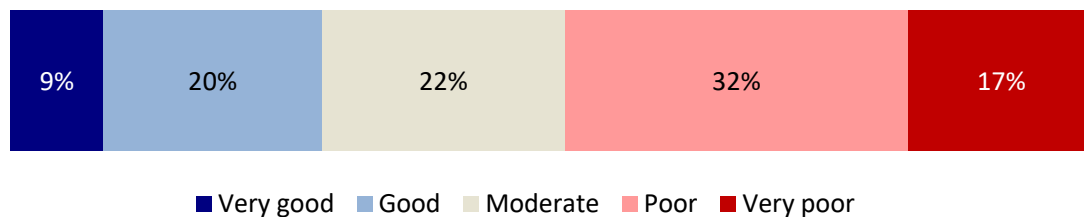
5.4. Satisfaction with feedback about application

The research found that a high proportion of respondents considered there was scope for improvement in the provision of feedback about the outcome of grant applications, particularly when they were unsuccessful.

Figure 21 shows that only 29% of grant applicants indicated there was good opportunity to obtain feedback about the reasons behind their grant application outcomes, while 48% considered this opportunity was poor.

- Only 16% of unsuccessful applicants considered there was a good opportunity for feedback, while 61% considered this opportunity was poor, in contrast to successful applicants (54% good, 24% poor).

Figure 21: Opportunity to obtain feedback on why application was successful or unsuccessful
 Base: Successful applicants and unsuccessful applicants (n=174)



A few participants in the qualitative research who had provided poor ratings in relation to the opportunity provided to receive feedback on their application reported that this was because they were not provided with detailed descriptive feedback as to why reviewers had provided a specific rating and/ or they had received limited constructive feedback about the perceived quality of the research team – which limited their ability to apply lessons from feedback to future applications. A few other participants felt it was not a useful exercise to obtain feedback as the grant was atypical.

“When you receive no feedback on an application that you’ve invested significant time in... you don’t know if the issues were something that you could have addressed, or if you were never in the ballpark in the first place. It feels like a waste of my time” —Unsuccessful applicant

5.5. Peer review process

The survey asked peer reviewers to rate several aspects of the peer review process for the grant(s) they were involved with in the context of facilitating national collaboration. The survey recorded **mixed ratings of aspects of the peer review process.**

Figure 22 shows that the **highest rated aspects** were:

- the process was the **briefing/ background provided to peer reviewers** by the NHMRC (rated positively by 85% of peer reviewers);
- over two-thirds of peer reviewers also provided positive ratings of the process **taking account of all peer reviewers’ views** when making decisions (73%), their overall **ability to assess applicants’ capacity and capability to form effective national collaboration** (71%) and the **sufficiency of information** to assess applications against selection criteria (68%); and
- 60% of peer reviews provided positive ratings of the **inclusion of stakeholder input** (including from communities, consumers and representative bodies).

“It came down to the way we were briefed and reminders... there were clear expectations, excellent communication, and an experienced chair. They got it right, the expertise in the room was right” —Peer reviewer

This figure also shows, however, that **less than half of peer reviewers provided positive ratings of:**

- **the time provided to review documents** – 43% rated this good and 26% poor;

“[Grant applications] are very substantial, detailed documents and the funding amounts at stake are significant. The amount of time given for them to be read and assessed is really quite short by comparison... it doesn’t take into account that while you’re reviewing these applications you’re also teaching or doing your own research work, it’s very intense” —Peer reviewer

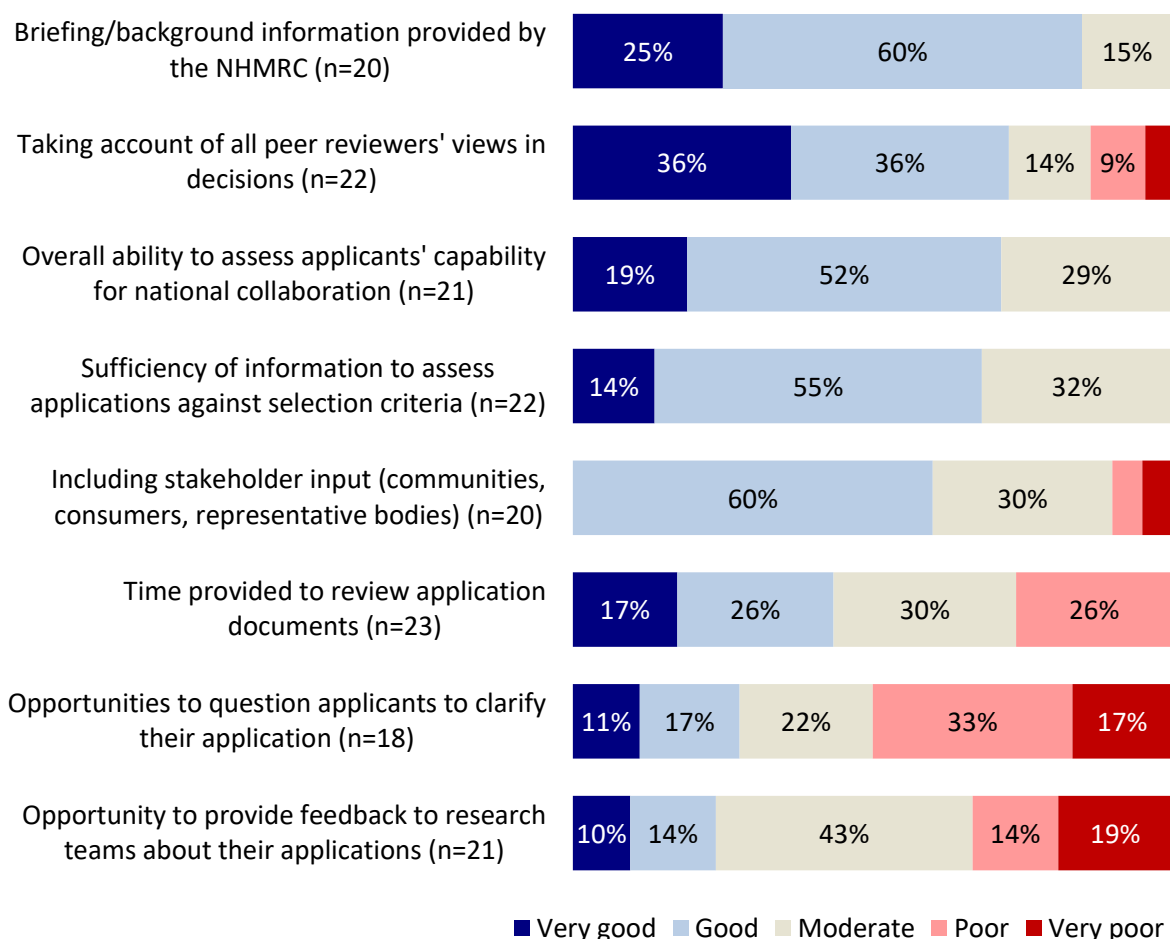
- **the opportunity to question applicants to clarify their application** –28% rated this aspect as good and 50% rated it poor; and

“NHMRC could include stage 1 review and interview of the key/ lead investigator prior to finalising the shortlist. For large projects when shortlisted candidates are invited this provides the opportunity for the panel to seek clarity and comments with the team to support more effective decisions”—Peer reviewer

- **the opportunity to provide feedback to research teams** about why their applications were successful or unsuccessful – 24% rated this as good and 33% rated it poor.

“More opportunities to engage with applicants and provide feedback as to how well their application has been received. This is especially useful for newer researchers who require a fuller understanding of the entire process”—Peer reviewer

Figure 22: The extent to which aspects of the peer review process facilitate national collaboration
Base: Peer reviewers



Peer reviewer participants in the qualitative research also reported that they were **generally satisfied with most aspects of the peer review process and the Peer Review Guidelines** provided by the NHMRC. In particular, participants reported that the evaluation process was smooth and consistent with other peer review processes they had been involved with previously, and the Peer

Review Guidelines provided by the NHMRC were clear and provided them with the information required to undertake their reviews.



“The NHMRC process was good because we had a good chair, documents were clear, they were willing to take feedback from the panel without being defensive... communication was constant, they were responsive, we developed the evaluation framework collectively and it was fun to be involved with”—Peer reviewer

However, the qualitative research also identified **scope for improvement in aspects of the peer review process** from both peer reviewers and applicants. A few peer reviewer participants reported that the **guidelines provided only limited or broad guidance in terms of how best to assess a proposed collaboration** in a grant application, and that they often drew instead upon their own professional experiences in assessing components of the applications.

In addition, a couple of participants in the qualitative research felt the process could be improved through **increased and more effective discussion and debate**. This included providing panels with increased capacity to directly compare competing bids across selection criteria and a return to more face-to-face panels and meetings for the evaluation of grant applications. For example, some of these participants felt that, as the review process has become increasingly fragmented and often undertaken remotely, there was a reduction in the quality and trustworthiness of the assessment process among some in the research community. However, the preference for face-to-face panels was not consistent amongst peer reviewer participants. A few of these participants considered that online panel arrangement had been effective (particularly since the start of the COVID-19 pandemic) and had the advantage of being able to include leading experts that would be unable to participate face-to-face.



“The grant panels not being in one room when they assess a grant has reduced the level of collective knowledge available and peer control, and peer control was a huge factor in these panel discussions”—Unsuccessful applicant



“They are all rated independently. We never compare and contrast or discuss their relative merits”—Peer reviewer

5.6. Peer Review Guidelines

Overall, **peer reviewers provided favourable ratings of the Peer Review Guidelines** in terms of their overall usefulness in the peer review process and considered they placed a high importance on national collaboration as an assessment criterion for grant applications.

- 65% of peer review respondents rated the guidelines as very useful, while a further 26% rated them as moderately useful or useful and only 9% rated them as not very useful.
- 91% of peer reviewers considered that the Peer Review Guidelines placed a high importance on collaboration, including 50% who rated this very high (see Figure 23).

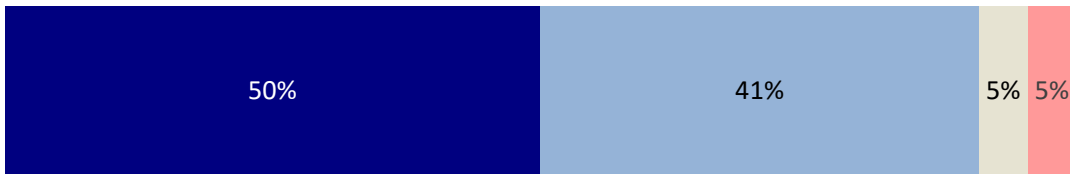


“It was very clear from the guidelines that the collaboration was considered an important component of the applications”—Peer reviewer



“There was a lot [to read] but it is big money. [The Peer Review Guidelines] were so simple. It would be great to have this process for other grants. It should be a solid template for all assessing committees”—Peer reviewer

Figure 23: Importance placed on collaboration by Peer Review Guidelines
Base: Peer reviewers (n=22)



- Very high importance - Clearly specified as a critical criteria/outcome area
- High importance - An important criteria/outcome area
- Moderate importance - An area that needed to be considered but not a key focus
- Low importance - Mentioned but less important than most other criteria
- Very low importance - Not a key aspect/focus in the guidelines

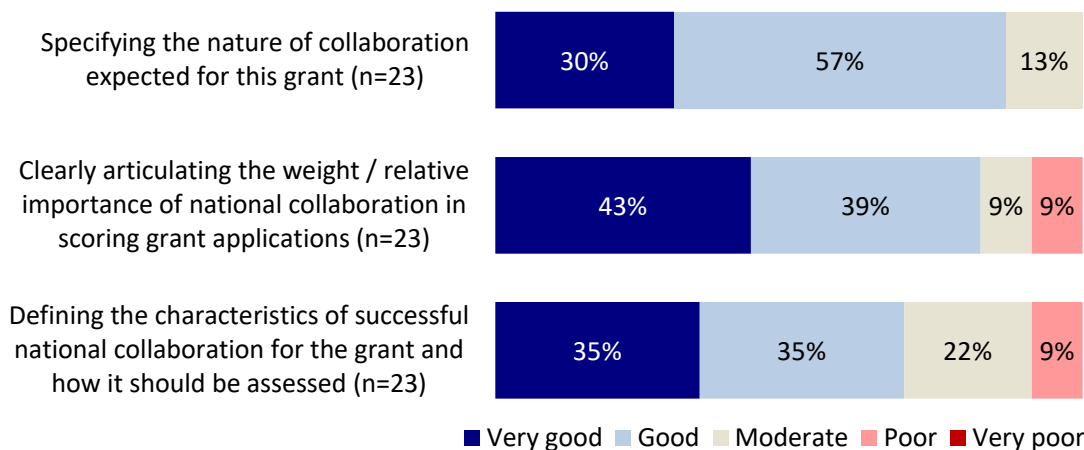
A high proportion of peer reviewers also provided positive ratings of how clearly the Peer Review Guidelines defined the nature, characteristics and importance of collaboration in the assessment process. Figure 24 shows that:

- Over 80% of peer reviewer respondents rated the Peer Review Guidelines as good at specifying the nature of collaboration expected for the grant (87%) and clearly articulating the weight given to national collaboration in the scoring of applications (83%).
- 70% of peer reviewer respondents rated the Peer Review Guidelines as good at defining the characteristics of successful national collaboration and how it should be assessed, while 22% rated this as moderate and 9% poor.




“The NHMRC have done a good job at building scoring around what they want. It is clear [and] explicit” —Peer reviewer

Figure 24: How clearly the Peer Review Guidelines define how collaboration should be assessed
Base: Peer reviewers





The slightly lower ratings of the Peer Review Guidelines in defining the *characteristics* of successful collaboration aligns with some of the feedback received in the qualitative research. A few peer reviewer participants reported that although collaboration was clearly outlined as an assessment criterion in the guidelines, they considered there was:

- **Little guidance as to what constituted a good collaboration and how this should be assessed** – it was felt that this could lead to inconsistent scoring of this part of the grant and was a missed opportunity to provide clear guidance to applicants about how to build a functional and sustainable national collaboration.
- **Limited requirement for applicants to demonstrate how the collaboration would work in practice, or to justify why certain applicants/ CIs had been included** – a couple of peer reviewer participants felt that this sometimes led to applicant collaborations being based on assembling CIs with the most impressive CVs to increase their chances of winning the grant, without providing a clear rationale for why each CI had been included, what their specific role/ responsibilities within the collaboration would be, or why they were best suited to this role.

 *“When you look at the assessment matrix for peer reviewers, it just says ‘outstanding level of collaboration’, ‘good level of collaboration’ etcetera... it doesn’t say much about what constitutes a good collaboration, or how to assess whether or not it’s going to work in practice”—Peer reviewer*

In addition, a few peer review participants reported that the **lack of a standalone section on the proposed collaboration within the application made it more challenging to assess**, as descriptions and rationales for collaborations were woven throughout the application rather than as a clear and discrete component. One peer reviewer suggested research teams could be required to specify how they are going to guarantee collaboration via specific monitoring and assurance controls.

 *“I’ve seen other grants where applications have a whole separate section focussing on the collaboration, and applicants need to draw out how it’s going to work, what the management structure will be and why they’ve allocated the roles the way they have. I find that gives much greater clarity when reviewing the applications”—Peer reviewer*


 *“You could say that they must put 3 pages on how collaboration will work rather than just say 25 pages on the whole application. You could regulate the structure of the application... put the onus on the researcher to say ‘How are you going to measure [collaboration] and how are you going to achieve it?’ Put it on them ... [to produce] specific KPs rather than just fluff”—Peer reviewer*

5.7. Suggestions for improvement


Grant application process and guidelines

Survey respondents were invited to make suggestions for changing aspects of the application process to support an increased focus on national collaboration. One hundred and two responses were received to this question, of which 28 had no suggestion for improvement. The most common themes from the remaining comments that did provide suggestions for improvement were:


- **Improving aspects of NHMRC’s decision-making for selecting applications (n=14 responses)**— including making selection decisions fairer for those who don’t already have many NHMRC grants (e.g. to encourage new and innovative approaches), better assessment of aspects of research, less perceived ‘political’ decisions and bias / nepotism.

 *“In the broader structure, the money goes to the same places, Sydney, Melbourne, Brisbane. It’s difficult for researchers outside of the Eastern States to receive funding. The same researchers are on the panel and they review each other’s grants”—Unsuccessful*


- **More emphasis on collaboration or specific forms of collaboration (n=13 responses)**– including NHMRC weight collaboration more highly in selection criteria, and emphasising it in guidelines and communication. Respondents suggested that international collaboration, collaboration across diverse states and territories and new collaborations should be particularly emphasised.

 *“Try to ensure that it is national. So put a recommendation that it is multi state and not East Coast Centric”*—RAO

- **Providing more and clearer feedback (n=13 responses)**– providing feedback at each stage of the application process, and ensuring this feedback was detailed and constructive, would be key for improving the application process.

 *“It would be good in the future for more feedback to be provided. Sometimes it happens but often enough there is minimal feedback provided for applicants, especially when unsuccessful”*—Unsuccessful applicant

- **Increase time for preparing applications and responding to feedback (n=10 responses)** – to provide sufficient time to foster collaboration, especially for those who wanted to establish new collaborative relationships.
- **Clearer and more specific information (in Grant Opportunity Guidelines and other communication) explaining the details of the grant opportunity (n=9 responses)**– respondents suggested that the NHMRC could provide more details about what is expected in the application process, such as concrete scoring descriptors. Some also suggested these details could be communicated more widely to the research teams.

 *“Clearer and more concise guidelines in what is expected from collaboration in order to achieve success in the application phase”*—Unsuccessful applicant

Additional suggestions for improvement raised in the qualitative research included:

- **Introducing measures to prevent institutions restricting researchers on their bid being involved in other bids** – some participants noted this had occurred in their grant application and were concerned that this could lead to instances where leading/ important researchers in a particular field were not able to be part of the successful grant and that it unfairly restricted researchers – specific suggestions included encouraging and/ or stating in grant guidelines that researchers are encouraged to be part of multiple bids and/ or should not be restricted from doing so by institutions. While it was noted that this may be difficult for the NHMRC to enforce and some institutions may not be supportive, many participants were supportive of this suggestion.
 - While a couple of participants felt that the introduction of such a measure would likely discourage researchers from sharing information with collaborators who were involved in multiple bids due to concerns about a loss of competitive advantage, a few participants who had been involved in applications where researchers had been allowed to be named on multiple competing bids had found strategies to manage this. For example, there were agreements that those named on both did not get exposed to detailed information. However, other participants considered this ‘difficult to handle’.
- **Refining the focus on collaboration in the grant guidelines to emphasise the importance of forming the best collaboration to improve research outcomes/ address the grant objectives, (rather than forming the biggest or most diverse research collaboration)** – a few grant applicants/ RAOs suggested this as they perceived the focus on national collaboration in the grant guidelines had encouraged research teams to include unnecessary collaborators to “tick a

box” (e.g. to include researchers from each State and Territory) and/ or to not select the best team for the project. They felt it could be beneficial for the grant guidelines to provide a more balanced approach that focuses on both the breadth/ diversity and effectiveness of the research team.


Peer Review Guidelines

Peer reviewer respondents were invited to make suggestions for changing aspects of the peer review process to support increased focus on national collaboration. Eleven responses were received to this question, 3 of which had no suggestion for improvement. The most common themes from the remaining comments were:

- **More dialogue and feedback between reviewers and applicants (n=6 responses)** – respondents suggested that a dialogue between applicants and peer reviewers would be helpful for appropriately accessing applications and passing on lessons.
- **Increased time for the review process (n=3 responses)**– as the process involved many people and some reviewers indicated more time was required.

Additional suggestions for improvement in the peer review process/ guidelines made by peer reviewers in the qualitative research included:

- **Providing greater guidance on the characteristics of an effective national collaboration and how this should be assessed** – to support greater consistency in the assessment of the collaboration component of grant applications, and facilitate more meaningful collaboration in the successful grants by having clear expectations for collaboration.
- **Having a discrete section in grant applications for the collaboration component of the application** – to encourage applicants to thoroughly explain and justify their choices for the collaboration and make assessment of the collaboration easier and clearer.

 *“I think the real challenge is if national collaboration is highlighted and asked for without clearly defining what it should look like and the rationale of why it’s being sought, then it’s much more likely to be non-meaningful collaboration – just a list of names on applications” – Peer reviewer*

6. Perceived priority and suggested improvements to priority-driven grant opportunities to encourage national collaboration

This chapter discusses feedback from stakeholders who participated in the qualitative research in relation to the role and priority of large scale priority-driven grant opportunities should have in the NHMRC grant program, as well as suggestions for improvement to enhance effectiveness of national collaboration.



Key findings

- Participants felt these large-scale priority driven opportunities were integral for research impact, so the NHMRC should continue to prioritise these types of opportunities. Participants recommended reinforcing priority driven opportunities with significant time and resource-investment to facilitate collaboration. Some participants also recommended targeting these grants towards fields with low collaboration.
- Participants gave several additional suggestions for improvement, including:
 - More inclusive and equitable NHMRC structures that mitigated competitiveness. Alternative funding structures and measures that allow multiple institutions to lead a grant may be more effective at fostering collaboration.
 - Increased clarity about the grant opportunities and how to collaborate meaningfully. They provided practical suggestions including an expression of interest process to ascertain eligibility for grant opportunities.
 - Ensuring genuine collaboration through monitoring relationships, e.g. requiring grants to submit summary reports of collaboration activities.

6.1. Role and importance of large scale priority-driven grant opportunities

Overall, most participants felt that large scale **priority-driven grant opportunities were a valuable part of the NHMRC grant program and should continue** to be offered in the future, provided they were adequately funded.



“I believe that the scope and the scale of the work we have done over the last few years wouldn’t have been possible without this grant... it’s built the capacity of the researchers involved in a way that other grant types couldn’t have facilitated, and if they’ve been as successful in other research areas as they have been in ours then I hope they continue”—Successful applicant



“Overall, the [priority driven grant process] has been very effective. It has had a lot of impact. It helped bring coherence to the field, more resources and visibility to the field. If this was split into 10 grants I am not sure we would get the same impact”—Successful applicant




“Large grants motivate and prompt people to work together. They are helpful in nurturing diversity of world views. It is very easy to get caught in this one-eyed opportunity. Bringing diverse perspectives brings life into applications”—Peer reviewer

However, it was also noted that effective and meaningful national collaboration **required a significant financial investment** and that without appropriate funding the impact and effectiveness of such grants would be compromised. Some participants acknowledged it may be difficult for NHMRC to fund large scale research given competing pressures to fund a range of research areas. These participants felt that if sufficient funding was not available to support the expected high levels of collaboration it would be better directed elsewhere/ to smaller grants.


Some participants noted that large scale priority-driven grant opportunities **should be directed to areas and fields where there were clear gaps in/ need for collaboration**, to ensure they created additional and meaningful (not tokenistic) collaboration. A few participants reported that they could be particularly effective mechanisms to **'kick-start' fields where Australia's research program was immature/ lagging internationally**.

Although a few participants also noted that funding smaller “seed” collaborations and partnership grants before moving to larger scale CREs was important to build up a research basis, connections and networks in particular fields of research.

 *“It's a journey to get to this point, which means you need all the steps beforehand... like seed collaborations”—Successful applicant*

Only **a few participants** felt that large scale priority-driven grants with a focus on national collaboration should be less of a priority for the NHMRC going forward. These participants **expressed concerns that these grants may reduce the funding available for other grants** (e.g. ideas grants) and narrowed the scope of research being funded, meaning that research in particular fields could become:

- overly focused on translational and clinically applicable research at the expense of ‘basic science’; and/ or
- too concentrated (i.e. projects outside the specific grant were put on hold/ would not progress), particularly in smaller and less established fields of research that had limited alternative funding sources.

 *“The focus on translational and clinical research has made it harder to get funded for basic scientific research. If they keep just focussing on translational research, eventually there won't be anything left to translate”—Unsuccessful applicant*

6.2. Suggestions for improvement

Survey respondents were asked to provide an open-ended comment about how the NHMRC can change its grant process, communication or support to better facilitate or encourage large-scale national collaboration in its priority-driven grant opportunities. Of the 134 comments received for this question, 9 suggestion no change were needed and 23 had no specific suggestion.

The main themes from comments that did include specific suggestions for improvement overlapped with the main themes about how to improve the grant application process⁸ (see Section 5.7).

Additional themes, included:

- **More inclusive approaches and less focus on competition (n=15 responses)**– these respondents considered that a highly competitive application process and the encouragement of research collaboration was inconsistent. They suggested such an approach discouraged national research collaboration.



“Demanding a competitive approach while also requiring a very broad collaboration was divisive and unfortunate”—Unsuccessful applicant

- **Increased funding amounts (n=14 responses)**– increased funding was considered important to facilitate meaningful collaboration involving larger teams and to allow grants to achieve significant research outcomes.



“For high impact research involving several institutions the amount of funding needs to be significantly increased”—Successful applicant

- Including an **expression of interest process (n=9 responses)**–prior to applying for the grant to assist researchers understanding their eligibility and competitiveness for the grant and allow collaborations to be formed after expressions of interest have been submitted (potentially facilitated by the NHMRC).



“They should have an expression of interest and then get the top two or three groups to work together so there's a broader sharing of critical resources”—Unsuccessful




“...[Include] a simple EOI process prior to releasing the main grant”—Successful applicant

Participants in the qualitative research provided a number of suggestions for how the design, structure and/ or administration of large scale priority-driven grants could be improved to maximise their effectiveness in supporting collaboration. These included:


- **Considering how large scale priority-driven grants could be designed to be more collaborative and avoid enhancing competitiveness** – many participants noted that for large scale grants institutions could often be highly competitive which detracted from the most effective and expert teams and collaboration being formed. While it was acknowledged that this was a broader funding and cultural issue within the research sector in Australia (which was felt to create a highly competitive system) suggestions to reduce this for priority-driven grants included:

⁸ The most common themes for this question that are not mentioned due to overlap with analysis in Section 5.7 were: more emphasis or weight on collaboration or specific forms of collaboration (n=19); more time for applications and responding to feedback (n=17); improved and more equitable NHMRC decision-making in assessing applicants (n=17); and clearer and more specific information for grant applicants (n=12).

- considering ways to avoid having only one lead institution on a grant, such as requiring co-administration (i.e. at least two institutions) to be nominated as leading institutions and adopting more Research Centre models;
- funding more partnership grants as another option to support collaboration; and
- considering alternative approaches to funding networks to reduce the administrative burden and cost on researchers, such as: NHMRC to employ a few people to administer a network and run an annual conference in combination with funding a range of smaller grants in a particular target field.
- **Requiring more detail in terms of how a larger network collaboration/ ties would be maintained throughout a grant at the application stage** (e.g. a budget allocation and plan) – some participants noted that this was sometimes not given enough consideration at the outset and felt that effective large scale and cross institutional communication was not always maintained effectively as researchers/ scientists had a pre-disposition towards focusing on and allocating funding towards the research/ researchers at the expense of appropriately resourcing administration and networking, or that such tasks ended up being performed by less suitable personnel.

 *“Often national networks fall down because they end up splintering into small closer-knit groupings. If the NHMRC wants to make a bigger collaboration work, they should require proof of a budget and a plan of how these network ties will be maintained” —Unsuccessful applicant*

- **Additional and/ or strengthened monitoring**, including:
 - **strengthening monitoring of grants** – a few participants perceived that annual reports submitted to oversight committees were not engaged with and that there was minimal monitoring. They felt this could be strengthened to ensure value for money was obtained from public funding; and
 - **measures for monitoring the functioning of the collaboration/ relationships** (e.g. requiring grant teams to submit a summary report of collaboration activities once a year) – so that emerging issues in the collaboration could be identified and any necessary changes (such as alteration to roles within the collaboration, adjustments to funding distribution across institutions, or extensions of the research/ collaboration) could be implemented. A few participants reported that this may also improve accountability/ encourage administering institutions and lead researchers to honour the level of involvement of other nominated researchers/ institutions as described in the initial application.

 *“Having national [collaborations] is valuable, but I don’t think there’s anybody who is having a hard look at what is really being delivered... there has to be a solid set of expectations about how collaboration would work and monitoring of the translation of outcomes to be worthwhile and really change things for Australians” —Successful applicant*


- Providing **earlier notification of upcoming large scale priority-driven grant opportunities**, including some basic details about the requirements – to enable researchers more time to consider their approach to the application and the most effective research collaborations before the formal application period. However, it was noted that this would require some level of specific information about the requirements (i.e. could not be so broad/ vague as to prevent any consideration).
- **Consideration of how equity could be supported for regional researchers and institutions when competing for large scale grants** – a couple of participants from regionally based

institutions suggested that when appropriate for a particular research topic, large scale grants could be split in two (one component for metropolitan-based and one for regionally-based institutions and researchers) to “level the playing field” and account for additional challenges faced by regional researchers and institutions when competing for grants.

- **Measures to encourage the successful consortium to collaborate with researchers outside the winning grant team** – a range of specific suggestions were made by unsuccessful applicants for the Human Health and Environmental Change who was concerned that researchers outside the winning grant application were “locked” out of the funded grant projects. These participants felt that encouraging the winning grant team to collaborate more broadly with others in the field would have been beneficial, for example by allowing greater potential for the work conducted under the funded HEAL network to be leveraged internationally. Specific suggestions included:
 - Including a second phase in the grant review process to bring the bids together and identify scope to combine both to maximise involvement;
 - Requiring the winning bid to reserve a portion of grant funding to find and leverage researchers outside the grant team (e.g. from other bids) and/ or phase the grant into two stages, with auxiliary funding reserved to add more researchers once the research program was more fully developed;
 - Including a mechanism in the grant structure to enable researchers to join a grant program if they were able to bring their own funding to the project. To support this, it was suggested that the successful grant applicant should be required to provide up-to-date publicly accessible information about what projects were being undertaken to allow experienced researchers to identify opportunities where they could be involved/ contribute to the funded grant and plan their own research activities to prevent wasted effort and knowledge (e.g. designing PhDs to build on work being undertaken in the grant);
 - Allowing experienced researchers with particular expertise to register interest to be involved in a successful grant in other ways, including acting as mentors for early career researchers involved in the grant or being on grant advisory committees; and
 - Including a criterion in annual grant reporting requirements requiring successful grant applicants to demonstrate that they were reaching out and involving other researchers/ stakeholders in Australia.

In addition, a few participants felt that it would be beneficial for NHMRC to provide an **ongoing path/ support (i.e. some continued funding) for collaborations** that had been developed through their priority-driven grant programs, particularly for those that were shown to be highly successful and/ or had strong potential for successful translation research. However, participants recognised that the feasibility of this would depend on NHMRC priority areas.

In addition, a few participants felt that there should be scope to **extend the duration of the grant** if the project was producing quality research outcomes or if necessary to fully address the research questions or to allow enough time to entrench and sustain collaborative networks. These participants felt that the fixed duration of the grants meant that they were not always able to adapt their research projects to maximise the value or outcomes of the grant.

 *“What would be beautiful, would be if there was an option of an add-on if you can show your program works. Like an extra 2 years for the translation work if there is a strong evidence base” —Successful applicant*

“The program was extraordinary and much better than any CREs I’ve been involved with in terms of building something like this, but in a way I think it was also a lost opportunity. There was a chance here to sustain the benefits and to build upon this and do even better if they’d put it out to tender again... it will start to wither out if it’s not funded. There’s only so much you can build on goodwill and relationships”—Successful applicant

“With such a large network all aspects take time and you need to think about the next steps. After 5 years, is it all over? ... it would be such a shame if there is not continuing support. Another 5 years to develop a sustainable network in the long term. It could allow negotiation of co-funding. It is not just the timing, it is the quantum of funding as well as the long-term commitment that it is important”—Successful applicant

7. Conclusion and recommendations

7.1. Conclusion

Stakeholders of NHMRC large scale priority-driven grant opportunities considered that these grant opportunities formed a valuable part of NHMRC’s grant program and should continue to be offered in the future. The grants were seen to play a unique role that could be transformative in building momentum and focus in research priority areas, particularly in emerging or underdeveloped fields, due to the scale of funding and their objectives around capacity building, sustainability and collaboration.



Stakeholders placed a high value on national collaboration and saw it as a crucial element of effective modern research. They indicated that solving complex research problems often required collaborative teams to bring together the leading experts in the relevant field, including by forming multidisciplinary and multi-institution research teams.

COLLABORATION WAS BOOSTED BY LARGE SCALE PRIORITY-DRIVEN GRANT OPPORTUNITIES ...

While most researchers were already regularly collaborating prior to being involved in NHMRC priority-driven grant opportunities, their **level of collaboration often increased considerably both at the grant application stage and during the grant**. A strong majority considered the benefits of this collaboration outweighed the negative impacts. Encouragingly, a higher proportion of successful applicants whose grants had ended indicated that collaboration levels had been sustained after the end of their grant, often at a similar level to what occurred during the grant.

ENABLERS AND BARRIERS TO SUCCESSFUL COLLABORATIONS

Stakeholders identified **several key enablers and barriers** to promoting effective national research collaboration, both at the application stage and during the grant, with **many of these factors within the control or influence of the NHMRC** (as outlined in the below diagram).

 Key Enablers	 Key Barriers
<ul style="list-style-type: none"> • Weighting/emphasis on collaboration as a selection criteria in guidelines • Sufficient grant funding / additional funding after grants • Sufficient time to prepare applications • Longer grant duration • Collaboration commitment from Chief Investigators • Stakeholder engagement / information through NHMRC consultation 	<ul style="list-style-type: none"> • Insufficient time between announcement and closing of grants to prepare applications / form genuine collaborations • Limited grant fundings amounts / relative to the size of the research team • The competitiveness of the grant application process • Centralisation of decision-making in administering institutions / lead researchers • Geographical isolation of some regional organisations

Stakeholders stressed that these grant opportunities could only be successful with **significant funding provided over an extended time horizon**. This provides adequate support to offset the significant time, effort and costs required to achieve genuine large-scale collaboration. It also

provides the scope and time to allow research networks to develop and mature during the grant so that they can be sustained after the grant ends.

COMPETITIVENESS OF THE GRANT OPPORTUNITIES HINDERED COLLABORATIONS

The number of research teams that apply for grant opportunities and the level of competition between those teams was another key factor identified as impacting on levels of collaboration and the perceived effectiveness of grants. **Many stakeholders, particularly those from unsuccessful applications, considered** that priority-driven grant processes that involved **multiple competing research teams had resulted in reduced and less effective collaboration**. They considered that dividing Australia's leading researchers into rival bids, and creating winners and losers in the application process, diminished the likelihood of collaboration outcomes including innovation and capacity building and was a missed opportunity to harness available talent and resources for the national interest. The reasons behind the formation of multiple competing applications were varied and mainly based on factors external to the NHMRC, including the extent and nature of existing relationships and degree of alignment and compatibility of underlying views on the research topic.

However, aspects of the grant opportunity design and process and the way it was managed by the NHMRC were also considered to have an important role in influencing this. **Many stakeholders considered that the NHMRC could do more to promote cooperation and partnership** between researchers through stronger collaboration requirements within the grant design and assessment process, **allowing longer and more flexible timeframes** to allow collaborations to form **and through greater encouragement and influence to bring parties together**. Other stakeholders considered, however, that the **NHMRC should not be too prescriptive and attempt to "force" teams together**. These stakeholders emphasised the risk of creating too large a research team that could be unwieldy, may not have harmonious or well-functioning relationships and could 'dilute' the funding between too many researchers to allow the achievement of significant research outcomes or the meaningful involvement of named investigators.

WAYS TO IMPROVE THE GRANT OPPORTUNITY PROCESSES TO BETTER SUPPORT COLLABORATIONS

The **Grant Opportunity Guidelines, Peer Review Guidelines and associated processes** were rated highly by most stakeholders. Stakeholders considered that these documents and processes **clearly emphasised that national collaboration**, including the requirement for new and expanded collaboration, **was an important selection criterion and outcome area**. There were, however, some stakeholders who considered that both the Grant Opportunity Guidelines and Peer Review Guidelines **could more clearly define the expected characteristics of better practice collaboration** and how this is assessed. Some stakeholders also considered more emphasis could be placed on applicants to demonstrate how collaboration would work in practice and that additional monitoring and assurance should occur by the successful applicant and the NHMRC to ensure it occurs as intended.

Another element of the NHMRC grant application process that was considered to have a key influence on the level and effectiveness of collaboration was the initial stakeholder engagement and consultation by the NHMRC. **NHMRC workshops to inform applicants about the grant opportunity were considered particularly important to help clarify the nature of the opportunity and emphasise the importance of collaboration**. For some grant opportunities, they were also considered to provide an important opportunity to identify and initiate collaborations with other researchers and institutions. The **effectiveness of these workshops appeared to partly depend on the extent of NHMRC engagement and communication activities** to raise awareness of the opportunity amongst key researchers. When this was not done effectively it had a negative impact

by making some researchers feel intentionally excluded. The time between the commencement of these initial consultations and when applications were due had an importance influence on the level and type of collaboration achieved. In some cases, stakeholders indicated the limited available time meant it was only practical to rely on existing relationships, while in other cases (most notably the National Network for First Nations Health Researchers) longer and more flexible timing at the consultation stage resulted in greater levels of collaboration and an increase in new collaborations.

The presence of **specific elements of NHMRC's application process, particularly the inclusion of an expression of interest** stage and the **opportunity for grant applicants to receive feedback and provide clarifications** about their approach, **was also considered important** to achieve the best collaboration and research outcomes. The inclusion of these stages was also considered justified due to the scale and importance of these opportunities.

Another key theme was that the **character and ethos of the administering institutions and Chief Investigator A (CIA) had an important influence whether genuine collaboration and cooperation occurred** on grants. Several positive examples were provided of committed CIAs that were passionate about the topic and in fostering collaboration. However, there were other negative examples with reports that collaboration was not sufficiently encouraged, decision making was too centralised in the administering institution, funds were not allocated where originally stated and grant activity was perceived to focus on the CIA's or administering institution's goals.

CHALLENGES WERE OFTEN MORE SIGNIFICANT FOR SMALLER AND REGIONAL INSTITUTIONS ...

The research also highlighted that **challenges and barriers to collaboration** were often **more significant for smaller institutions** and researchers **located outside east coast metropolitan areas**. Some researchers in these locations considered that specific measures should be taken to improve equity of access for them in collaborations, and to ensure that regional communities who often have different priorities to metropolitan areas are sufficiently represented.

7.2. Recommendations

1. Improve guidance on the characteristics of better practice collaboration and how it will be assessed in priority-driven grant opportunities.
 - a. Grant Opportunity Guidelines and Peer Review Guidelines should:
 - i. clearly emphasise the importance of collaboration and attach a high weight to this criterion; and
 - ii. Include an increased focus on assessment of the quality of collaboration and justification/rationale for including researchers;
 - b. The NHMRC could also consider expanding and/or supplementing the NHMRC Collaborative Research Guide⁹ with additional guidance on what constitutes better practice national research collaboration, including case studies and advice to applicants about how they can incorporate key elements into their approach.
2. Adjust NHMRC application, communication and support processes to facilitate researchers to form more meaningful collaborations.
 - a. Provide increased time (e.g. minimum of 4-6 months) between the announcement of the grant opportunity and the due date for applications.
 - b. NHMRC workshops about grant opportunities should be open to all interested researchers and clear communication should be provided about attendance details to all those that register their interest.
 - c. Include an expression of interest process as a standard component of large scale priority-driven grant opportunity application processes.
 - i. Applicants could be provided with informal feedback about their broad approach at this stage, including with regard to the focus on collaboration, ahead of preparing a full application.
3. Increase the opportunity for applicants to receive feedback and provide clarification both during the grant application process and after awarding the grant.
 - a. Peer reviewers should be provided with the opportunity to question applicants to clarify aspects of approaches.
 - b. Provide more detailed feedback and opportunities for debrief about why applications were successful or unsuccessful and the reasons for ratings.
4. Consider the size of funding and the maximum number of named chief investigators on each funding call to balance the competing objectives of inclusion of sufficient leading researchers, while avoiding excessive dilution of funding.
 - a. The size of funding should be increased above the standard amount and/or a focus placed on applicants securing co-funding, when larger research teams are required.
 - b. Consideration should be given to increasing the 'standard' funding amount for priority-driven grant opportunities from \$10,000,000 to account for inflation since 2016 and to build in regular inflation adjustments in the future.
5. Consider extending the duration of some grants beyond 5 years and options for additional funding mechanisms after the end of grants to allow sufficient time for collaborations to form and for gains in collaboration to be sustained.

⁹ [Collaborative research: A guide supporting the Australian Code for the Responsible Conduct of Research \(nhmrc.gov.au\)](https://www.nhmrc.gov.au)

6. Consider adjusting grant requirements and/or selection criteria to encourage research teams to increase the opportunity for a wider range of researchers to be involved in grant activities. This could include:
 - a. encouraging grant applicants to outline mechanisms for other researchers (e.g. from unsuccessful grant teams) to be involved in research activities linked to the grant.
 - b. discouraging institutions and research teams that apply for priority-driven grant opportunities from imposing their own restrictions preventing researchers involved in their bids from being involved in other bids.

7. Consider implementing additional methods to increase the likelihood of administering institutions and CIAs providing genuine collaboration in line with their application. This could include:
 - a. ensuring that Grant Opportunity Guidelines and Peer Review Guidelines include an assessment of the quality of governance, monitoring and assurance mechanisms to ensure that collaboration is achieved in line with the proposed approach;
 - b. grant recipients to include reporting against collaboration outcomes (including proving monitoring evidence specified in their governance framework) as part of NHMRC grant reporting; and
 - c. consider providing or directing researchers to an appropriate dispute resolution mechanism for researchers who consider that administering institutions have used funds in a manner contrary to that specified in their application.