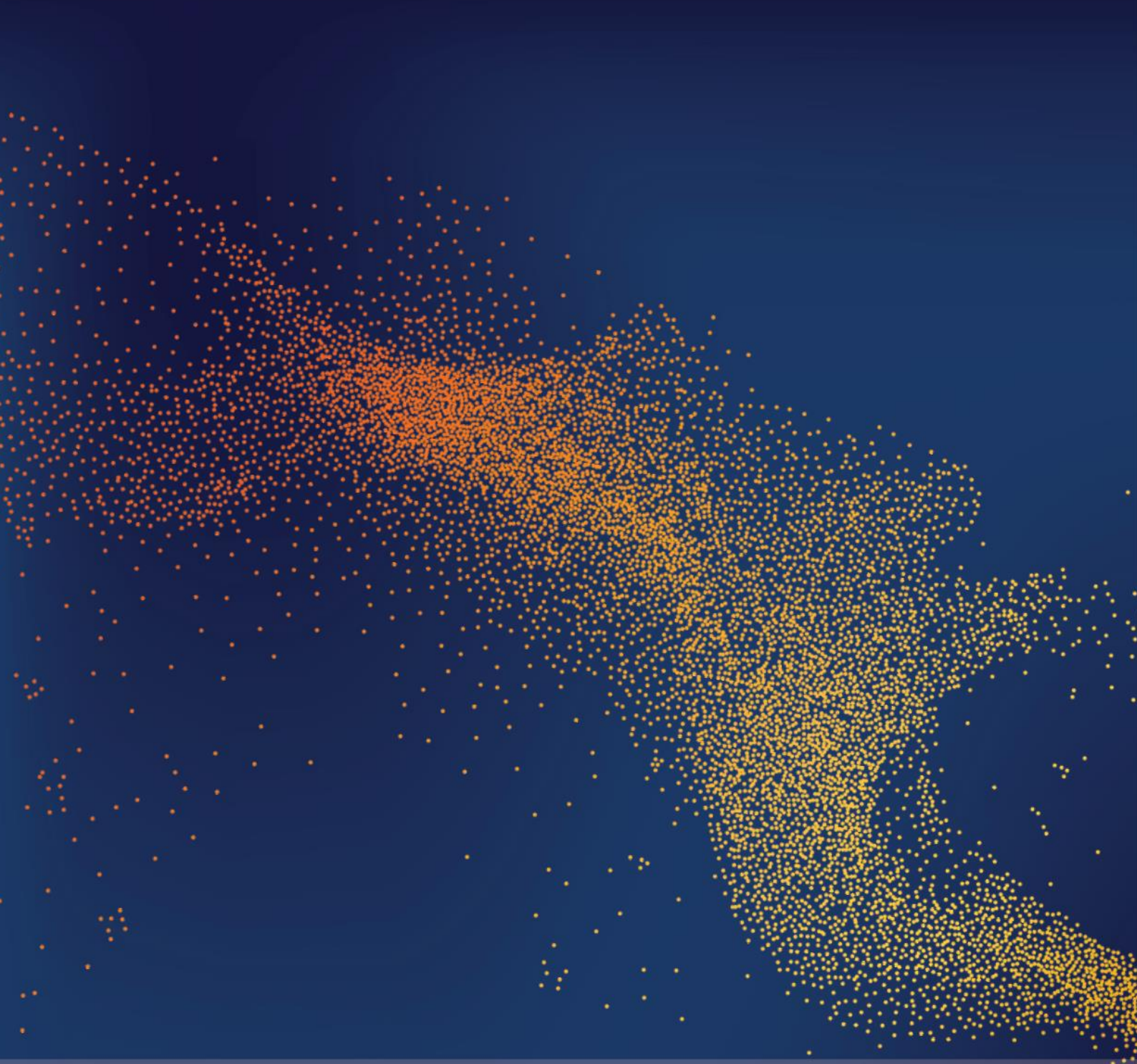

National Health and Medical Research Council

Consultation on the development of peer review for NHMRC's new grant program

Final Report

April 2018

nous

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Contents

Executive summary 2
Part A: The public consultation 2
Part B: The targeted consultation 4
Part C: Consultation themes for ongoing consideration 5
1 Introduction 6
1.1 Purpose and context 6
1.2 Document structure 7
1.3 Analysis and limitations 7
1.4 The use of key themes 8
2 Part A: The public consultation 9
2.1 Consultation approach 9
2.2 Public fora 12
2.3 Macro level themes 14
2.4 The six assessment parameters 15
2.5 NHMRC's Relative to Opportunity and Career Disruption policies 30
2.6 The Peer Review Process 36
2.7 Peer review of the specific grant programs 45
3 Part B: The targeted consultation 52
3.1 Consultation approach 52
3.2 What is important for the future of peer review 53
3.3 What is contentious about the current peer review 54
3.4 The emerging Track Record assessment framework 57
3.5 The draft peer review process for Investigator and Synergy Grants 60
3.6 The draft peer review process for Ideas Grants 63
3.7 Final reflection on the proposed changes to peer review 65
4 Part C: Consultation themes for ongoing consideration by NHMRC 67
Appendix A: NHMRC consultation paper 69
Appendix B: Analysis approach 84
Appendix C: List of submissions received 86

Executive summary

The National Health and Medical Research Council (NHMRC) is introducing a new grant program. An integral element of awarding NHMRC grants is peer review. In developing the peer review process for the new grants program, NHMRC has consulted extensively with stakeholders to determine the most appropriate models.

This independent report has been prepared by the Nous Group for NHMRC. It summarises the key themes and findings from the public consultation and a targeted consultation session facilitated by Nous. The public consultation included written responses to a public consultation paper and six public fora in capital cities. The targeted consultation workshop was held on 2 February 2018 with representatives from across the health and medical research community.

The report is structured as follows:

- Part A: The public consultation
- Part B: The targeted consultation
- Part C: Consultation themes for ongoing consideration

A summary of key findings for these three elements is presented below.

Part A: The public consultation

The public consultation comprised two elements:

- **Written submissions:** The consultation paper was issued at the start of the consultation period with an associated online portal for written submissions. 113 written submissions were received with an equal split between submissions submitted on behalf of organisations and by individuals.
- **Public fora:** Six public fora were held across the country during September – November 2017. It is estimated that more than 450 stakeholders attended these workshops.

Feedback through the public consultation process was structured in four categories – peer review parameters, relative to opportunity and career disruption policies, peer review processes and specific peer review processes for the new grant schemes. Each section presents consultation headlines, themes and implications for NHMRC. A summary of overarching key themes is presented in the sections below.

Peer review parameters

Six assessment parameters will support the new grants program, with different parameters applying to each of the three new grant types. The six parameters are Track Record, Knowledge Gain, Innovation and Creativity, Significance, Synergy, and Feasibility. NHMRC sought feedback on the six parameters through the consultation process. In particular, information on the types of information and evidence that should guide assessment against these criteria was requested.

Six macro-level themes were identified through the public consultation related to the parameters for peer review for NHMRC's new grant program. These were:

- A need to focus on impact and outcomes rather than solely on outputs
- That assessment of parameters (criteria) is highly subjective. Need more guidance and greater clarity on the parameters to avoid overlaps
- A need for appropriate subject-matter expertise in the peer review process
- That peer review assessment criteria should recognise and support diversity of research and researchers
- That good research design is critical, preliminary data is less so

- The need to ensure basic science research is not inadvertently discriminated through the application of the parameters.

Relative to opportunity and career disruption

Relative to Opportunity and Career Disruption policies are intended to enable comparison of Track Record across the diverse range of applicants to ensure decisions are equitable and based on opportunities researchers have had. NHMRC sought feedback on these two policies and how they should be included in the peer review process for the new grants program.

Four macro-level themes were identified through the public consultation related to NHMRC's relative to opportunity and career disruption policies. These were that:

- The intention of the policies is sound and fair and should enable greater diversity, but the policies have potential to be broader in scope
- The application of the policies is inconsistent and there is limited confidence they work in practice
- There are differences of opinion between individual researchers and organisations
- There are differences of opinion between male and female researchers on fairness.

Peer review process

NHMRC presented a generic peer review process in the consultation paper and at the public fora outlined the different components that could be included in peer review for the new grant program. Feedback was sought on these elements by NHMRC.

Six macro-level themes were identified through the public consultation related to the process for peer review for NHMRC's new grant program. These were that:

- None of the existing processes were seen as superfluous, although there was mixed support for the Applicant Response (rebuttals and interviews)
- There were mixed opinions on whether an Expression of Interest or blinded reviews should be used
- Many respondents wanted the peer review process to include more feedback
- There was support for 'Near miss' applications to be identified and able to re-submit in the next round (i.e. applications that were close to the cut-off for funding)
- Some support for approving the best applications straight after Independent Assessment without going to the Grant Review Panel (GRP)
- There was support for multiple rounds per year.

Peer review of new grant schemes

Three new grant schemes will be introduced as part of the new grant program – Investigator Grants, Synergy Grants and Ideas Grants. NHMRC asked stakeholders to provide feedback on their preferred peer review process for each of the three new grant schemes.

Two macro-level themes were identified through the public consultation related to peer review for the new grants schemes being introduced by NHMRC. These were that:

- The proposed parameters (assessment criteria) for each of the three new grant schemes were supported by respondents
- There was some support, especially for Synergy Grants and Ideas Grants for shortlisting based on assessment against a key assessment criterion (e.g. 'Synergy' in the Synergy Grants scheme).

Part B: The targeted consultation

On 2 February 2018 a by-invitation workshop was held to test stakeholder's perspectives on draft peer review processes for Investigator, Synergy and Ideas Grants, and the emerging framework for assessing Track Record. These were presented by NHMRC to workshop participants with stakeholders provided the opportunity to provide feedback.

The consensus from workshop participants was that all of the proposals were appropriate based on the current level of detail provided, but the implementation and application of the processes will ultimately define the success of the processes.

Key themes on each of the three areas are outlined in the sections below.

The emerging track record assessment framework

A draft framework for assessing Track Record was presented to workshop participants. This included three elements – Publications (comprising 'Outcomes' and 'Recognition'), Research impact (in areas including 'Knowledge', 'Health', 'Economic' and 'Social') and Leadership. The framework received strong support from workshop participants with some areas identified for further consideration.

Feedback from workshop participants identified several strengths in the proposed framework. These included:

- The focus on leadership in the framework
- The increased emphasis on research outcomes and impact
- Use of case studies to demonstrate impact
- A focus on introducing objective measures
- Continued assessment of applications relative to opportunity

Potential issues with the assessment framework were also identified by workshop participants. It was raised that the framework may be unable to support researchers from diverse backgrounds (such as non-health and medical research backgrounds), that there was minimal emphasis on collaboration within the framework and that there were challenges in attributing impact to applicants.

Several elements were also identified as needing further consideration – including the format for case studies, the metrics to be used to assess publications, challenges in identifying research impact, how leadership is to be measured and the appropriate weighting between the different categories of the framework.

The draft peer review process for Investigator and Synergy Grants[1]

A draft peer review process for assessing Investigator and Synergy Grants was presented at the workshop. This process included a single track record assessment for both the grant schemes before separate assessment of the applications for the Investigator Grants and Synergy Grants. Participants supported the intent of the changes with some areas identified for further consideration.

The following strengths of the proposed process were identified by workshop participants:

- Increasing the number of assessors
- The use of panel discussion 'by exception' only
- Removing the applicant response from the process
- Shortlisting Investigator Grants applications.

[1] Investigator and Synergy Grants are different and will be assessed using different parameters. They have been grouped together when reporting on the targeted consultation as they were discussed together in the workshop due to several commonalities in the proposed peer review processes.

Whilst attendees were largely supportive of the draft process in principle, they expressed some concerns about how it would operate in practice. In particular, attendees identified challenges in identifying the recommended five assessors with expertise, and whether assessment of five applications was sufficient to allow assessor to benchmark their own scores. Appropriateness of the process for Synergy Grants was also raised as an area of concern, in particular the focus on individual Track Record assessment.

There were several elements of the process identified as requiring further consideration, including the appropriateness and availability of assessors, assessment of Track record for Synergy Grants, the nature of feedback to applicants, and the criteria to support collaboration for Synergy Grants.

The draft peer review process for Ideas Grants

A draft peer process for Ideas Grants was presented to participants. The proposed process included a full application, independent assessment with five expert assessors and a review by panel 'by exception' only. Participants were supportive of the proposed process.

The following strengths of the proposed framework were identified by workshop participants:

- Five assessors was identified as a sufficient number
- Ranking of applications will allow for greater nuance for similarly scored applications
- Panel discussion by exception will reduce the burden on the research community
- Video conferencing for the panel will make panel participation more inclusive
- Providing feedback to applicants or assessors was highly valued.

The primary issue identified in relation to the peer review process for Ideas Grants was the potential volume of applications during the initial rounds of the grant program. Several approaches were suggested to mitigate the potential increased workload based on the high application volume.

Several elements were earmarked for further consideration by workshop participants. These included defining 'by exception' for the use of panels, use of phased implementation to manage risks, balancing innovation and feasibility in assessment scoring and limiting the ability to re-submit proposals to reduce application volume and burden.

Part C: Consultation themes for ongoing consideration

Seven key 'elements for success' have been identified based on the key themes throughout the consultation process. These are summarised below for ongoing consideration by NHMRC as they prepare to open applications for grants under the new grant program. These are not likely to be addressed solely by processes and frameworks but will need to be key considerations for NHMRC. The identified elements for success are:

- **Explicit guidance and definitions** to support the implementation of the new peer review model
- **An increased pool of expert assessors** to ensure that appropriate expertise and capacity is in place to support the proposed peer review models
- Opportunities for **ongoing support to develop the capability of assessors** through working with administering institutions
- **Avoiding biases in the peer review process and enabling diversity** through the introduction of the new peer review process and parameters
- **Being clear on what constitutes an 'exception'** that would precipitate a panel discussion of proposals to avoid perceptions of bias and to ensure that the new processes do not increase burden

- **Support for applications that were close to the cut-off for funding** by providing feedback to applicants and having a defined process for re-application
- **Monitoring and refinement of the peer review model in the short to mid-term** based on early lessons from its implementation**.**

1 Introduction

1.1 Purpose and context

In May 2017, the Federal Minister for Health announced a reformed architecture for the National Health and Medical Research Council's (NHMRC) investment in health and medical research[2]. The new structure for the NHMRC grant program was based on extensive consultation and expert advice. The new program will comprise four funding streams – Investigator Grants, Synergy Grants, Ideas Grants and Strategic and Leveraging Grants. The purpose of each stream is summarised in Figure 1.

Figure 1: The new NHMRC grant program structure (Source: NHMRC presentation) [3]

INVESTIGATOR GRANTS	To support the research program of outstanding investigators at all career stages
SYNERGY GRANTS	To support outstanding multidisciplinary teams of investigators to work together to answer major questions that cannot be answered by a single investigator
IDEAS GRANTS	To support focussed innovative research projects addressing a specific question
STRATEGIC AND LEVERAGING GRANTS	To support research that addresses identified national needs

An integral element of awarding NHMRC grants is peer review. NHMRC has invited suggestions and comments on the approach and process of peer review in light of the changes to the grant program structure. In doing so it has consulted extensively on the future of peer review, predicated on the basis that some form of peer review will be retained as the most appropriate mechanism for ensuring finite funding is allocated appropriately[4].

This independent report has been prepared by the Nous Group ('Nous') for NHMRC. It summarises the key themes and findings from the public consultation and a targeted consultation undertaken at the conclusion of the public consultation. In undertaking the consultation NHMRC, with Nous as independent observers, has:

- Prepared a public consultation paper and sought written responses through the NHMRC consultation portal (this consultation closed on 4 December 2017)

[2] http://stagingconnections.org/eventstream/ACT/NHRMC.html
[3] https://www.nhmrc.gov.au/restructure
[4] This assumption has not been challenged during the consultation process.

- Held six public fora across the country during the period from September – November 2017. Each forum comprised a presentation from the NHMRC CEO followed by a question and answer session with the attendees.
- Hosted a targeted consultation workshop on 2 February 2018 with researchers from across the health and medical research community. The CEO and colleagues from NHMRC presented at this workshop, and Nous were used as the independent facilitators of this workshop.

The outcomes of the public consultation were summarised in a draft report by Nous and provided to NHMRC for consideration as they prepared draft models for peer review in the future. Drafts of the proposed models were presented at the workshop.

1.2 Document structure

This report has been structured into three parts, as follows:

- **Part A ('Public consultation')** – an analysis and summary of the public consultation process and feedback. At the commencement of the consultation process, NHMRC published a consultation paper (see Appendix A). This section has been prepared using the same structure as the consultation paper (peer review parameters, Relative to Opportunity and Career Disruption policies, peer review processes, and peer review in the context of the new grant program).
- **Part B ('Targeted consultation')** – a summary of the day-long workshop held in February 2018. This section includes details on the new draft peer review processes and the emerging track record assessment framework. It also presents the feedback provided by the invited guests at the workshop, both on peer review in general and specific to the models/framework presented.
- **Part C ('Key themes')** – a brief summary of the key feedback themes that have emerged from both the public and the targeted consultations, the implications for NHMRC, and, where possible, how NHMRC has sought to address these key themes through the development of the peer review model.

1.3 Analysis and limitations

The key themes and findings in this report have been determined based on the analysis of the responses and discussion at the consultation fora, a review of written submissions and the feedback provided at the workshop.

There are three key limitations in the findings presented in this consultation report:

- Identification of speakers and attribution – the format of the public fora and workshop meant that it was not possible to consistently or accurately identify who provided which piece of feedback. For this reason, no analysis has been undertaken on who asked questions at the fora or workshop.
- The written submissions respond to a set of specific consultation questions. Qualitative responses to each of the questions were requested. Although the phrasing of the questions has enabled some quantitative analysis on strengths and weaknesses, the questions were not intended to provide a definitive conclusion on the support (or otherwise) for specific elements of the process.
- 113 written responses were received and approximately 50 researchers attended the workshop. This volume of responses enables an analysis of key themes, but with an estimated 23,000 medical researchers practicing in Australia[5] the analysis presented in this report may not be considered fully representative of the views of the research community as a whole due to the sample size.

Further information on the analysis approach is presented in Appendix B.

[5] https://aamri.org.au/health-medical-research/fast-facts-on-medical-research/

1.4 The use of key themes

The findings presented in this report are the key themes from the consultations. This means that the information presented is that which was repeated consistently in the public fora, on multiple occasions in the written submissions, and/or the workshop. This does not mean the theme is presented as a conclusive finding; rather it represents a weight of opinion from those within the research community who were engaged through the consultation exercise.

In Part A ('Public Consultation'), Nous has applied a general rule that **at least ten** submissions need to have proposed a similar theme for it to be identified as a key theme. For each key theme, the proportion of submissions that supported the key theme has been presented.

The questions and comments made at the six public fora have been reflected within these key themes including the use of quotes from the fora.

2 Part A: The public consultation

2.1 Consultation approach

2.1.1 Overview

NHMRC launched the consultation process on 23 September 2017 with submissions closing on 4 December 2017. The consultation comprised two elements:

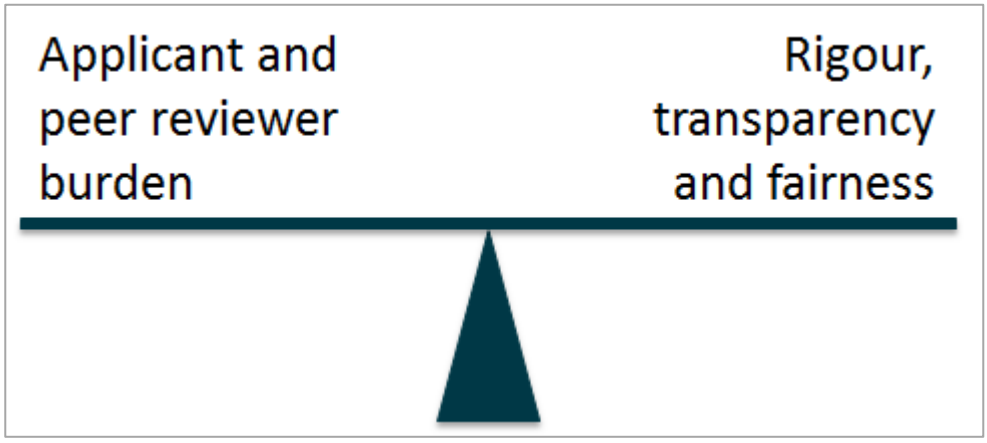
- **Written submissions:** The consultation paper was issued at the start of the consultation period with an associated online portal for written submissions
- **Public fora:** Six public fora were held across the country during September – November 2017.

The intent of the consultation was to gather feedback on the current peer review approach, and to consider how this approach could complement the objectives of the reforms to the grant program structure:

- Encourage innovation and creativity across all fields of health and medical research
- Provide opportunities for talented researchers at all career stages and across all disciplines
- Minimise burden on researchers, freeing up time for research
- Retain a core focus on improving human health and wellbeing through research.

In doing so, it is important that the approach to peer review finds the appropriate balance between burden on the research community, and the rigour, transparency and fairness of the peer review approach (see Figure 2).

Figure 2: The critical balance for peer review (Source: NHMRC presentation)



This section summarises the format, focus and profile of responses for the two elements of the consultation process.

2.1.2 Written submissions

Format

NHMRC used their online portal for written submissions. The de-identified submissions were provided to Nous within 24 hours of the written submission deadline. The written submissions included two elements to the response:

- **Respondent details:** A small range of information about the responders was requested. Of particular importance to the consultation analysis is whether the response was from an individual or organisation, and for individuals, their:
  - Broad research area
  - Gender
  - Research role
  - Were they of Aboriginal or Torres Strait Islander descent?
- **Consultation responses:** 18 (character limited) free-text responses to a series of questions; spanning four categories:
  - Peer review parameters – 6 questions
  - Relative to Opportunity and Career Disruption policies – 4 questions
  - Peer review processes – 5 questions
  - Peer review approach for specific grants – 3 questions

For a range of reasons 13 organisations and individuals provided written responses directly to NHMRC; rather than utilising the portal.

Focus

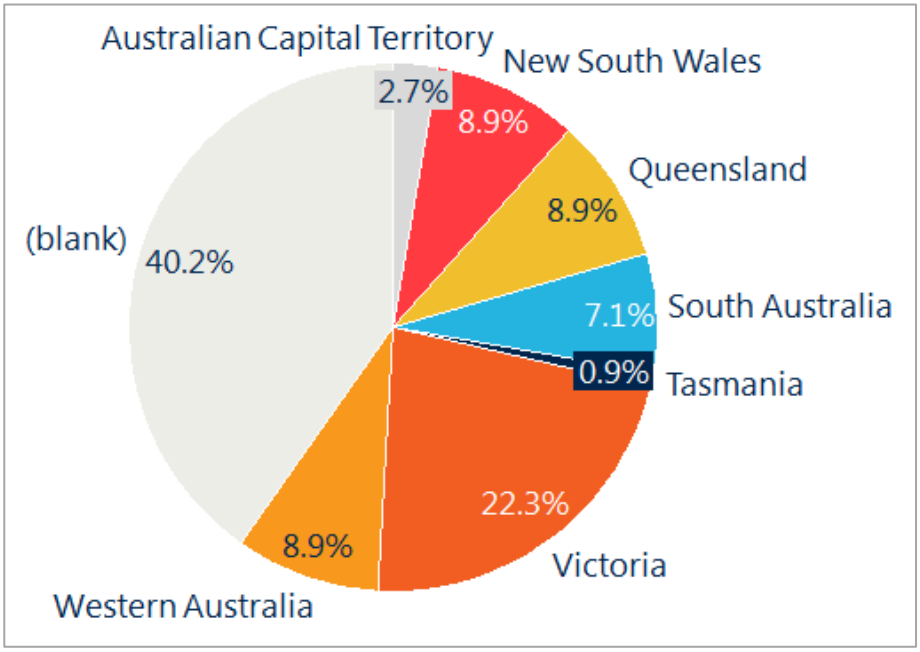
The focus of the questions varied for each of the four categories:

- **Peer review parameters** – what elements of each parameter are important in the context of a peer review assessment?
- **Policies** – for each policy, what are the strengths and areas for improvement?
- **Processes** – for each step in a generic peer review process, what are the important features?
- **Approach for specific grants** – describe the process that would best support the assessment of the specific grant type.

Responses

There were 113 written submissions. Of these submissions: **51%** were submitted by organisations and **49%** were submitted by an individual. The submissions were from across Australia, with New South Wales significantly underrepresented and Queensland/Tasmania marginally underrepresented relative to the other states (see Figure 3).

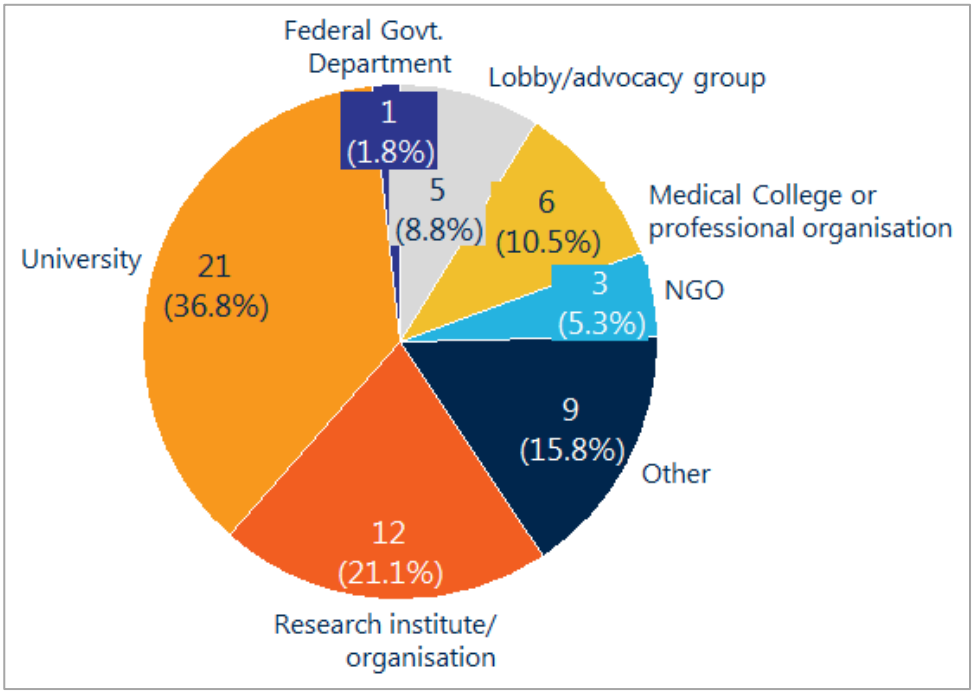
Figure 3: The proportion of responses by the State/Territory indicated in the respondent details



Organisational responses

Of the 57 organisational responses, universities and research institutes accounted for over half of the responses (see Figure 4). The list of organisations who submitted a response and gave permission to be identified is included in Appendix C.

Figure 4: The breakdown of organisational responses, by organisation type

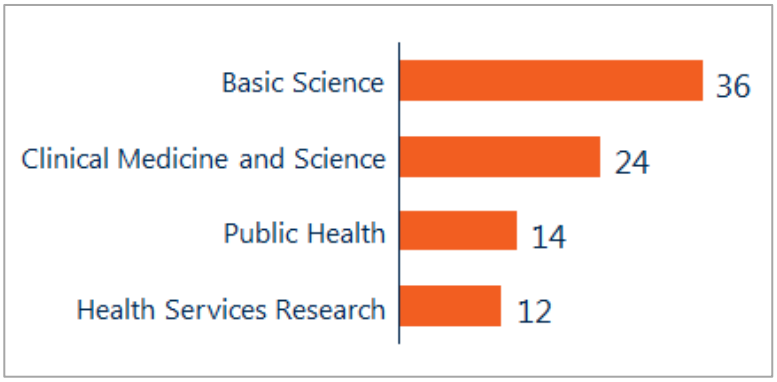


Individual responses

Of the 55 individual responses received:

- 93% were NHMRC grant applicants, 84% were NHMRC peer reviewers (Note: This means that five individuals responded who have applied for NHMRC grants but who are not peer reviewers)
- 49% of individual responders were male, 46% female and 5% did not identify their gender
- The research focus for majority of individual responders was Basic Science (see Figure 5)

Figure 5: The number of individual responders by research focus (Note: Individuals could select multiple areas of research focus)



2.2 Public fora

2.2.1 Format

NHMRC organised six public fora across the country during September – November 2017 (see Table 1). At each forum, the NHMRC CEO delivered a summary presentation on the changes to the grant program and the importance of finding the right approach to peer review for each grant type. The presentation included a summary of proposed assessment criteria for each grant type and a generic peer review process. A discussion session followed the presentation.

Table 1: The six public fora

Date	Location	Approximate attendees
29 September 2017	Garvan Institute of Medical Research, NSW	50-60
04 October 2017	University of Adelaide, SA	70-80
19 October 2017	Walter and Eliza Hall Institute of Medical Research, VIC	140-150
01 November 2017	NHMRC, ACT	70-80
21 November 2017	The Harry Perkins Institute of Medical Research, WA	80-90
24 November 2017	Mayne Medical School, QLD	40-50

2.2.2 Focus

The attendees to each forum were given the opportunity to:

- Ask questions about the potential approach to peer review
- Provide comments and observation on the current peer review approach
- Make suggestions on the peer review approach in the future

The attendees were asked to primarily focus on: the peer review parameters, how relative to opportunity and career disruption are utilised, and/or the peer review process.

2.2.3 Responses

Each of the fora allowed 90 minutes for the plenary session, and with all but one exception the full amount of allocated time was utilised. Whilst full transcripts of the sessions were not recorded, the approximate emphasis of the sessions – as noted by the Nous observers – is summarised in Table 2.

Table 2: The approximate balance of consultation responses

Focus	Approximate proportion of responses
Questions on the peer review approach	50%
Comments and observation on the current approach	25%
Suggestions for the future approach	10%
Questions/comments not related to peer review	15%

Given the focus of the fora, the questions, comments and suggestions aligned with seven areas relating to peer review:

- Trade-offs in the peer review model
- Assessment consistency
- The capability development of peer reviewers in undertaking peer review
- The provision of feedback to successful and unsuccessful applicants
- The types of research that should be funded
- The quality of peer review assessments
- The fairness of the peer review approach

These seven areas align with some aspects of the written consultation and as such the responses have been reflected where appropriate and where relevant in the thematic analysis presented in the rest of this report.

2.3 Macro level themes

Figure 6 summarises the macro level themes from across the consultation responses. These themes are explored in more detail throughout the remainder of the report

Figure 6: The macro level themes from the consultation

PEER REVIEW PARAMETERS

- Need to focus on impact and outcomes, rather than solely on outputs
- Assessment of parameters (criteria) is highly subjective. Need more guidelines and clarity on the parameters and to avoid overlaps.
- Need appropriate expertise in peer review
- Peer review assessment criteria should support/ recognise diversity of research and researchers
- Good research design is critical, preliminary data is less critical
- Need to ensure basic science research is not inadvertently discriminated through the application of the parameters.

RELATIVE TO OPPORTUNITY AND CAREER DISRUPTION POLICIES

- The intention of the policies is sound and fair and should enable greater diversity, but the policies have the potential to be broader in scope
- The application of the policies is inconsistent and there is limited confidence they work in practice
- There are differences of opinion between individual researchers and organisations
- There are differences of opinion between male and female researchers on fairness

PEER REVIEW PROCESSES

- None of the existing processes were seen as superfluous, although there was mixed support for the Applicant Response
- There were mixed opinions on whether an Expression of Interest or blinded reviews should be used
- Many respondents wanted the peer review process to include more feedback
- There was support for 'Near miss' applications to be identified and able to re-submit in the next round
- Some support for approving the best applications straight after Independent Assessment without going to the GRP
- Support for multiple rounds and iterative peer review

PEER REVIEW OF NEW GRANT SCHEMES

- Proposed parameters (assessment criteria) for each of the three new grant schemes were supported by respondents
- There was some support, especially with Synergy and Ideas Grants for shortlisting based on assessment against a key assessment criterion (e.g. 'Synergy' in the Synergy Grants scheme)

2.4 The six assessment parameters

The peer review approach is based upon assessing an application against a series of assessment criteria – or parameters. Six parameters have been proposed by NHMRC that will be used to assess the three new grant types[6]. Table 3 summarises which parameters will be used for each of the new grant types.

Table 3: The use of assessment criteria/parameters in assessing the new grant types

	Track record	Knowledge gain	Innovation and creativity	Significance	Synergy	Feasibility
Investigator	Yes	Yes				
Synergy	Yes	Yes			Yes	
Ideas		Yes	Yes	Yes		Yes

The consultation paper requested that: *NHMRC seeks your suggestions on the types of information and evidence that should guide assessment of applications against the parameters.*

The following sub-sections summarise the feedback relating to each of the six parameters. For each key theme the following information is provided:

- An illustrative quote that was noted at one of the fora or contained within a written submission
- The proportion of organisational responses that contained this key theme (shown in orange)
- The proportion of individual responses that contained this key theme (shown in yellow)
- Whether this was a repeated theme from the public fora.

2.4.1 Track record

Guidance in the consultation paper

Respondents to the consultation process were asked to reflect on track record as a parameter for the new grant program, with the paper noting that current elements that are used to assess track record include:

- Research outputs and outcomes relevant to the proposed fields of research
- Contribution to the discipline area
- Other research-related achievements
- Mentoring environment to support junior emerging researchers.

Consultation headlines

- **Track record is an essential parameter, but it is currently too subjective and weighted towards quantity of output rather than the impact and outcomes.**
- **Track record assessments could be more nuanced than they are currently.**
- **There is no support for a single track record assessment per application round (as mooted during the public fora).**

[6] The guidelines for each of the parameters are in development and how each parameter is tested in relation to each grant type requires finalisation.

Key themes

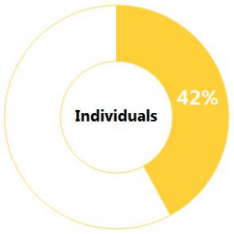
There should be a greater focus on the outcomes and impact of research

> **"It is important to consider the way track record output is measured relative to grant funding that is received. Someone may not have a grant and another that did receive a grant with the same output"**

The current Grant Review Panel (GRP) process has tended to assesses research outputs primarily in terms of number of publications and other volume based measures.

Many submissions emphasised that there should be an increasing focus on outcomes and impacts of an individual's research and a de-emphasis on the volume of publications as a key measure for track record.

20% of organisational responses went further than this and specifically proposed that quantity of research output (or publications) should not be included as a consideration in assessment of track record.



Public fora

The submissions included suggestions of the how the outcomes and impact of research could be assessed. These suggestions included:

- Assessing the quality of the journals that publish an individual's research
- Considering the relevance of the journals specific to the grant application
- Demonstrated impact of research on the community or policy level
- Greater use of bibliometric analysis to produce a comparative 'rating' or 'score' for an individual's publications
- The individual's record of research translation as a distinct consideration should be taken into account

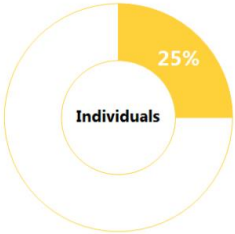
In addition to these specific suggestions, multiple submissions indicated that value for money / impact relative to funding levels should also be factored into the track record assessment.

Track record assessments should take more account of the relevance for the field of research

Multiple submissions concluded that there is a need to place greater weight on elements of an individual's track record that are related to the research area within the application. In particular, it was commented that differences within specific fields such as publication practices, the nature of the research, international recognition, and the broader experience of researchers makes it complex to do comparative assessments of track record across applications between different fields of research. Some respondents expressed concern that the process for assessing track record is therefore biased towards some types of research.

> **"Expertise in the peer review process is one of the big problems at the moment. The push to collaborate creates conflicts of interest, eliminating a lot of good people from the pool"**

Many responses demonstrated support for greater nuance when assessing track record. Suggestions were put forward as to how track record could be appropriately assessed across fields, including:



Public fora

- The use and development of guidelines to outline expectations of track record for different fields of science, including thresholds or benchmarks for publications
- Weighting elements of the track record assessment that are applicable to the relevant field of science or type of research of the applicant
- Consideration of broader experiences beyond academic research outputs, especially for more practical fields of research.

In their submission, a university gave examples of the different types of weighting that could be considered, which are presented in Table 4 as an example of the nuances that could be considered.

Table 4: Areas of focus for track record assessments by research type (provided as an illustration)

Research type	Area of focus for track record
Basic research	Strong focus on publications, industry engagement and development of patents on research outcomes.
Epidemiological/ best practice studies	Broader consideration of track record including development of procedural guides and influence on health and public policy
Translational research	Increased focus on changes of clinical practice and establishment of clinical trials, as well as publication measures

There was not unanimous support for track record assessment to consider the research area in the assessment, with some responses concerned that this would make it harder for researchers to diversify their area of focus.

Track record assessments should support greater diversity in the backgrounds of researchers

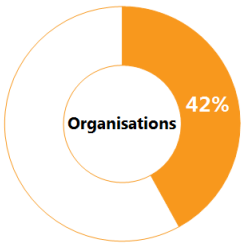
Many submissions outlined examples where a wider range of factors should be considered in the track record assessment; enabling broader participation in health and medical research from those with more diverse backgrounds or non-research commitments.

(Note: Feedback relating to 'relative to opportunity' is summarised in Section 2.5).

Multiple responses indicated support for an assessment that considered:

- **The role of mentoring and coaching** - many responses called for greater recognition of an individual's track record of mentoring and coaching other researchers. Challenges with this type of assessment were acknowledged, notably the assessment of quality in mentoring and coaching. It was proposed that a proxy for mentoring quality could be the success of mentees through supervision arrangements; noting that there would be a lag in making this assessment and that there are many other factors that influence a mentee's success. Some organisations did not support inclusion of coaching and mentoring on the basis that it was difficult to meaningfully assess, or would introduce bias towards research intensive universities.

"Equity and unconscious bias is a challenge. One option would be to award equally to men and women."



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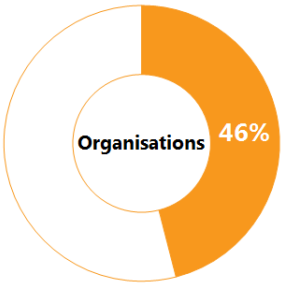
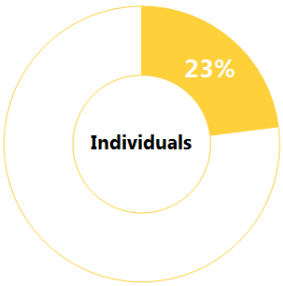
- **Non-research experience –** including practitioner experience, clinical roles, or community health roles to encourage participation of those with relevant qualifications but not with research-focussed backgrounds. This also applies where individuals have partnered with non-research organisations in the past.
- **Role in community and consumer engagement –** acknowledging that community engagement and experience working with consumers was an important attribute that is not fully acknowledged in the current track record assessment.
- **Researchers in Aboriginal and Torres Strait Islander health –** feedback indicated that past research with Aboriginal and Torres Strait Islander clients, experiences in Aboriginal and Torres Strait Islander research and capacity building roles with other Aboriginal and Torres Strait Islanders researchers should be included for those conducting research with Aboriginal and Torres Strait Islanders.

Alternative approaches to track record assessments

Within the responses there were suggestions and observations related to alternate/enhanced approaches that could be used to appropriately assess track record, including:



- **There are reservations about the use of a single track record assessment for each round** – the potential for a single track record assessment per application round was mooted at the public fora. Multiple submissions expressed reservations about this approach, with most noting that a single track record submission would not have enough nuance to address the type of grant and the specific area of research proposed in the application. There were no submissions that indicated support for a single track record assessment.



- **The use of a finite number of best research publications** - many respondents proposed that applicants should submit a finite number of their best research publications to demonstrate their track record rather than list all publications in the last five years. This is an approach utilised by other research funders (for example the NIH 'Contribution to Science' response). The view is that this will support an assessment of quality rather than quantity and would also mitigate – to some extent - the impact of career disruption in the last five years. Several approaches were put forward, including identifying the best or most impactful:
  - Ten research outputs over a period of time or over the course of a career
  - Five research outputs in past five years and five over course of a career

> **"Research outputs should focus on up to 5 career publications most relevant to the project, along with the best 5 publications over the last 5 years, along with a description of the researcher's contribution to them.**

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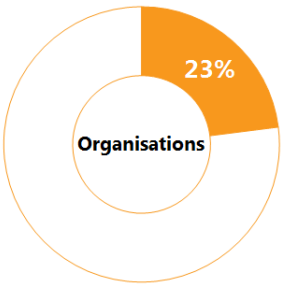
- **The use of quantitative assessments** - there is an opportunity to use standard metrics to improve consistency and reduce the subjectivity in current assessment practices. Several submissions suggested a formula based approach to assessing track record. It was also proposed that this would remove some biases, such as gender, from the assessment. Suggested types of analysis that could be used include: H index, a count of citations and the number of clinical translations. Some submissions warned that while these metrics were useful, it was important to understand the limitations of these measures and contextualise them in the assessment.
- **The use of short-form track record submissions** – other research funders utilise space limited track record submission forms. It was noted that this would ease the burden of track record assessment and force applicants to focus on the quality elements within their track record rather than padding out their submission. One example cited on multiple occasions was the 'National Institutes of Health (US)' *Biosketch* track record form; which is limited to four pages and is based around a personal statement and a 'Contribution to science' summary.

More guidelines on track record assessments will improve equity of track record assessment

[Note: This was not a repeated theme in the responses from individuals]

> **"Different Chief Investigators give you different scores to assess track record. Consistency and a set of things you need to include would be useful"**

Multiple submissions indicated that the publication and application of clear and consistent guidelines would improve the equity and transparency of the track record assessment. Several organisational submissions outlined that this would be a valuable way to support consistency of track record assessment. The type of guidance highlighted included how differences in track record across a range of individual backgrounds is reflected – including the difference between career researchers and those with clinical responsibilities, and how specialist roles such as biostatisticians or health economists who do no lead project teams is assessed.



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Implications

- **Approaches that improve the objectivity and transparency of the track record assessment should be examined.**
- **The track record assessment should be a more holistic assessment with a greater emphasis on the impact and outcomes of an individual's research track record.**
- **The written submissions did not support a single track record assessment per application round for all NHMRC schemes. If the burden on the peer review process is to be reduced, then other approaches will be needed.**

2.4.2 Knowledge gain

Guidance in the consultation paper

Respondents to the consultation process were asked to reflect on the quality of the proposed research, incorporating theoretical concepts, hypothesis, research design, robustness and feasibility, to assist reviewers to assess 'scientific quality' under current NHMRC peer review arrangements.

Consultation headlines

- **The knowledge gain parameter lacks sufficient clarity/guidance to differentiate itself from the innovation and feasibility parameters, which is seen to be confusing given all three will be used to assess Ideas grants.**
- **Assessing knowledge gain will be too subjective unless subject matter experts do the assessment**
- **There is a concern knowledge gain will be harder to demonstrate for discovery/basic science research compared to translational research.**
- **Knowledge gain should not be assessed in such a way that it hinders innovation.**

Key themes

The knowledge gain parameter needs clearer definition

[Note: This was not a repeated theme in the responses from individuals]

The responses demonstrated that knowledge gain needs further definition to differentiate it from the significance and innovation parameters, with concern that there is – on face value – a lot of overlap between these three parameters.

"The focus for knowledge gain should be on how the research will move a field forward"

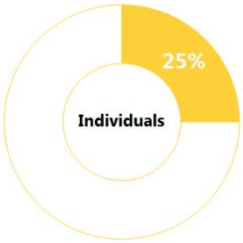
Particular concern was expressed with regards to the relationship between quality and knowledge gain, with multiple responses stating that knowledge gain is not the only indicator of the quality of a proposal. A small number of responses went further than this and stated that they did not agree with the definition of knowledge gain contained within the consultation paper.

Multiple responses suggested that there is a relationship between knowledge gain and the Vision parameter currently used in NHMRC Research Fellowship application.

Assessors need to have relevant experience to determine knowledge gain

The feedback that was most repeated within the submissions was that knowledge gain can only be assessed by those with relevant expertise. Three key areas of relevant expertise were identified:

- Assessors with expertise in the field of research
- Assessors with expertise in the methodology or approach
- Assessors with relevant technical knowledge – such as effect sizes, statistical skill set, etc.



"Knowledge Gain requires subject matter experts, especially to balance discovery and more targeted/translation al research."

Relevant expertise helps assessors to objectively identify the potential knowledge gain that may be achieved through the research application. Many submissions concluded that without relevant expertise then the assessment of knowledge gain would be too subjective and open to interpretation.

Given the need for relevant expertise, multiple responses suggested that it may be necessary to utilize overseas assessors; especially where the depth in some fields is relatively low in Australia.

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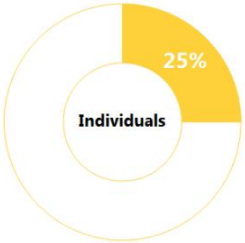
Sound research design should underpin the breadth of scientific approaches

Responses highlighted the importance of valuing different research approaches. Specifically, responses indicated that the assessment process can favour research design based around Random Controlled Trials over other research techniques. Alternate research design that is well designed and appropriate to the research context should not be disadvantaged. The key to this feedback is that the proposed research method is well designed, clearly articulated and feasible (noting that Feasibility is a separate assessment for Ideas grants).



"Knowledge gain assessment should include: Robustness and novelty of hypothesis vs current knowledge and the capacity of the approach to fully test the hypothesis and provide new knowledge or directly impact on healthcare"

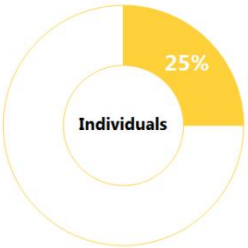
There was a lot of support for greater focus on translational research when assessing knowledge gain. The counter to this is that there were also multiple submissions concerned that knowledge gain would devalue basic science applications in favour of translational research.

As such, it was proposed that there needs to be clear guidelines and descriptors that acknowledge the different types of knowledge gain related to basic science/discovery, translational research, population health and clinical research.

Some responses contend that knowledge gain needs to be balanced by consideration of ethical issues – particularly for health research projects working with vulnerable populations.

The knowledge gain parameter should not hinder innovation or creativity

While identification of the likely knowledge gain from a research project was identified as important, some responses were concerned that this would hinder innovation. Challenges were identified with assessing the likely knowledge gain that will result from a project while supporting innovative projects that are less likely to have clear foreseeable outcomes. Knowledge Gain should therefore proactively balance innovation and risk – ensuring that there is not a detrimental effect on basic science due to the inability to demonstrate feasibility. Some suggested there was a need for a safeguard to ensure that basic research is still funded.



"Requiring supporting data should be instructive in terms of likelihood of successful completion but not an absolute requirement, lest it stifle creativity and excellent ideas"

There was support for less emphasis on large amounts of preliminary data with multiple organisational submissions proposing that the current

emphasis placed on preliminary data should be removed or significantly lessened for all grant types.

Other factors that were proposed when assessing knowledge gain – that would support more innovation – include:

- The significance of the problem being targeted
- The current size of the knowledge gap
- Advancing the contemporary use of technology, equipment and software
- Are the outcomes likely to be sustainable?

Implications

- **There may be a need for NHMRC to provide greater clarity on how knowledge gain will be assessed, ensuring that it is distinctly different to other parameters.**
- **There may be a need for NHMRC to consider whether non-experts assessing an application can objectively assess knowledge gain.**
- **Assessing knowledge gain needs to have sufficient nuance so that it does not inadvertently favour conservative research.**

2.4.3 Innovation and creativity

Guidance in the consultation paper

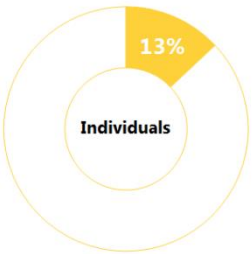
Respondents to the consultation process were pointed to the NHMRC's current Project Grant scheme, where assessment of innovation is based on the extent to which the proposed research seeks to shift current paradigms and introduce or advance concepts, practices or approaches. Responses were sought as to what are important factors in assessing 'innovation and creativity'.

Consultation headlines

- **Innovation and creativity are important factors, but there is uncertainty about how they differ from Knowledge Gain and Significance.**
- **Clearer definitions and guidelines of all parameters are needed for assessments to be as objective as possible.**
- **There is a trade-off between creativity and feasibility that needs to be taken into account.**

Key themes

[Note: Based upon the consultation responses, not all respondents had observed that the 'Innovation and Creativity' parameter would only be assessed for Ideas grants.]



Encouraging innovation and creativity in research is seen as important, but needs a clearer definition and guidelines

There is broad support for the value of innovation and creativity in health and medical research. Innovation was seen as critical to progress in sciences and was identified as something that should be encouraged to avoid only funding conservative research.

Responses outlined the importance of a clear but broad definition – several stakeholders identified that the definition of innovation should not just be focused on clinical trials or commercialisation – but should also support projects across the full research spectrum, including basic research through to changes in clinical practices. Discovery research in

Innovation and creativity should be an assessment criteria, with clear definitions of these concepts including novelty and creativity in approach to a problem, new techniques and new tools, or creativity in deployment of existing approaches.

particular was identified as important, even if the immediate end-user or translation outcome is not necessarily clear

Multiple organisation submissions recommended that different category descriptors for innovation at different stages of the research pipeline should be developed, and applicants should choose those relevant to their research. There was also recognition that innovation can take many forms, including the focus of the research, the research design, the use of emerging technologies and the broader methodology.

In addition, several submissions outlined the need for clear guidelines on the assessment of innovation with examples and descriptors to outline the differences between different fields of research – i.e. biomedicine compared to translational research.

Assessment of 'Innovation and Creativity' may be better aligned with other parameters

[Note: This was not a repeated theme in the responses from individuals]

Several submissions demonstrated uncertainty in the difference between 'Innovation and Creativity' and other parameters such as 'Knowledge Gain' and 'Significance'. Others observed that an 'Innovation and Creativity' parameter in some ways was contradictory with both 'Knowledge Gain' and 'Significance'. By their very nature, the knowledge gain or significance of an innovative project may not be immediately apparent.

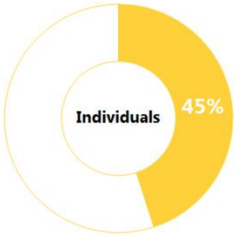
"This is interlinked with the assessment of 'knowledge gain' and guidelines available to determine innovative/creative proposals is appropriate"

Some respondents asked for further clarification from NHMRC on the criterion terminologies for Knowledge Gain, Innovation and Creativity and Significance. For example, it was noted that Knowledge Gain is defined as the 'quality of the proposed research', however innovation could be viewed as a key part of an assessment of research quality.

There were suggestions on how to address this conflict:

- The applicant responding to only one of the Knowledge Gain, Significance or Innovation for assessments parameters
- Coupling Significance and Innovation as a single assessment
- Coupling Knowledge Gain and Innovation as a single assessment
- Incorporating "Significance', 'Knowledge Gain' and 'Innovation and Creativity' as a single 'impact' criterion.

A balance is needed between supporting innovation and basic science



Respondents proposed that there is a clear trade-off between innovation[7] and basic science. It was suggested that it is important to consider weighting the parameters. For example, mandating a previous track record could result in an outcome that does not align with supporting novel and new research.

I think this is a controversial area...it is worrying to me that so much emphasis is placed on the concept of 'novel'. While it is critical that we explore new ideas and concepts...this seems to sometimes mean that an application must only be about new and novel, and 'first time'

It was emphasised that recognising preliminary work in the current assessment can stifle creativity – with too much focus in existing NHMRC grant programs on the provision of expansive preliminary data. It was argued that this runs counter to genuine innovative research - truly novel and cutting-edge study ideas are less likely to be able to provide a lot of pilot/preliminary work to justify the argument or project feasibility.

There is a balance between basic science and innovation that should be considered, but current assessment practices are seen to focus too much

[7] There was no suggestion that basic science is not in itself innovative, rather in the context of innovation being interpreted as being new and without precedent and without preliminary data.

on the extremes; i.e. either too great an emphasis on risk aversion or too much emphasis on innovation. Reducing the emphasis on extensive preliminary data provides one way to achieve this. Instead, to support more innovative research whilst still appropriately funding basic science it is important that the primary focus should be on the idea; rather than amount of preliminary data produced.

Key considerations were presented for how 'Innovation and Creativity' could be assessed

[Note: This is a collection of suggestions, rather than a single key theme and as such the proportion of respondents has not been reported.]

Multiple submissions included factors that could be considered as to how applicants could demonstrate 'innovation and creativity'. These have been grouped in Table 5.

Table 5: Considerations for innovation and creativity parameter

Consideration	Specific feedback
What is the focus of the research?	• Is the research trying to solve a new problem? • Is the research hypothesis novel? • Are the theoretical framework and/or concepts original? • Is the research focusing on an existing approach with a new target population or to ensure it is culturally appropriate for a new client group? • Does the research challenge existing views or positions, while maintain a sound hypothetical basis?
How is the research delivered?	• Is the methodology innovative or new? • Is there a novel or creative approach to solving this problem? • Is there creativity in the deployment of existing approaches? • Is the technical approach to the problem novel? • Are new techniques or tools used to address this research question? • Is the research design distinct from existing approaches to this problem?
Who delivers the research?	• Does the research team support a new or novel way to address this problem? • Is the team multi-disciplinary and does it provide a different approach to others?
What is the impact of the research?	• Is the research likely to generate a new paradigm? Or shift an existing paradigm? • Is the research likely to deliver significant changes or ongoing incremental changes? • Will the project advance the research topic or advance practices and approaches?

Implications

- **NHMRC needs to provide greater clarity on how innovation and creativity should be assessed, ensuring that it is distinctly different to other parameters.**
- **Peer review assessors need to understand that innovative research may be ground-breaking and it may be difficult to judge the feasibility of an innovative proposal.**

2.4.4 Significance

Guidance in the consultation paper

Respondents to the consultation process were asked to consider significance in respect of the extent to which research findings will be of great importance in the research area by substantially advancing knowledge, clinical and/or public health applications, policy development or change in the field.

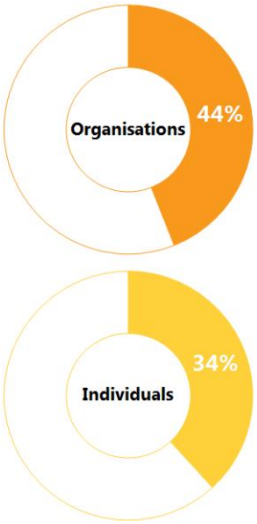
Consultation headlines

- **There is dissatisfaction with how Significance is currently assessed.**
- **Testing Significance requires nuance when assessing translational research compared with basic science.**
- **It is not currently clear to stakeholders that the current policy focuses on the significance of the research in the context of the field of research, as well as the significance of the field of research.**

Key themes

There are some challenges with assessing significance with current system

The current assessment of significance is seen to be too subjective and inconsistent. Clearer guidelines would help identify what is meant by significance and enable consistent application.



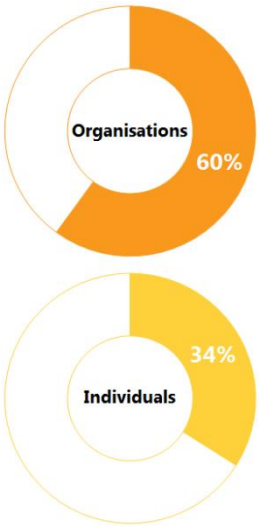
"High health system/societal burden significance should continue to elevate importance of research with perceived lower innovation/creativity."

Some submissions reported that there is an inadvertent impact on the types of research funded due to the strong focus on translation. This shift in emphasis may have been misinterpreted by assessors and panels to indicate that all research should deliver immediate clinical benefits. There is a perception that this has resulted in basic research being negatively affected by the Significance assessment. Counter to this point of view was the submission from a smaller number of organisations who stated that it was important that Significance maintained a clear ongoing focus on and demonstration of the translation pathway for the research.

It was noted that the Significance parameter is perceived as having a detrimental impact on public health research. It was argued that projects focused on system changes are often not scored highly due to an assumption that the research does not 'directly save lives'.

Significance has more than one facet

Some submissions noted that the Significance parameter focuses on assessing the importance of the field of research or the associated health condition; as opposed to the potential significance of the research within a field. This means that burden of disease is seen as a key influence on Significance scores.



"In the past, significance seems to have been linked with issues like the prevalence and burden of diseases, not necessarily emphasising the importance of a research question for advancing a field for a condition which might be less common, or common conditions whose health effects are not measurable in large losses of life or high levels of disability but nonetheless have impacts at the patient level"

Most respondents that commented on this outlined the importance of more balance in the assessment, so that the significance of the potential outcomes of the research is regarded as the same as the significance of the health problem or the burden or prevalence of disease that exists in the population.

The counter view, put forward by some submissions, is that assessment of Significance should focus on the scale of the health problem. It was also emphasised that significance should be considered in the Australian context – some research may be

significant in Australia but not internationally. This may include knowledge or approaches that are obtained internationally but are being applied in an Australian context.

Key considerations were submitted for how the 'Significance' parameter could be improved

[Note: This is a collection of suggestions, rather than a single key theme and as such the proportion of respondents has not been reported.]

Several suggestions were put forward to improve the way in which significance is assessed. These include:

- **Providing clearer guidelines** – outlining standards for Significance based on different research types (such as basic science and clinical research)
- **Distinct assessment based on types of categories** – for example, applicants being able to respond under the definition, 'immediate health impact' or 'increase in knowledge base', to allow for support of translational and basic research.
- **Increased focus on consumers and end users** – ensuring that the impacts of research on individuals, despite prevalence not being high, are not under-acknowledged in the new grants program. This includes a suggestion that it is important to include end-users in GRP decision making on this particular point – providing a perspective on what is important to the community.
- **A clear distinction between significance and feasibility** – ensuring that concerns about feasibility or approach do not negatively (or positively) impact the Significance score. Proposals should be assessed on the assumption that the research will be successfully conducted.

Implications

- **The NHMRC definition of Significance needs to reflect that significant research does not (always) equate to research in a significant field.**
- **Guidelines, particularly with regards to significance of different research types, should be developed.**
- **There needs to be a clearer distinction between significance and feasibility.**

2.4.5 Synergy

Guidance in the consultation paper

Respondents to the consultation process were asked to consider that assessment of Synergy Grant applications will need to emphasise the value of multidisciplinary and diverse teams whose skills and perspectives will enable complex research questions to be addressed. Respondents were asked to propose what elements should be considered in assessing an application against "Synergy" assessment criteria.

Consultation headlines

- **The Synergy parameter needs to assess that the potential outcomes of any collaborative effort are greater than the potential of its individual team members.**
- **The Synergy parameter needs to be targeted to support collaboration where collaboration is expected to have the greatest impact.**
- **A demonstrable track record of collaboration is a positive in assessing an application, but must not be so important that it precludes new collaborations forming.**

Key themes

[Note: it is likely that the responses to the Synergy parameter are being conflated with opinions on the Synergy grant type.]

Applications should outline where individual team members add value and how they collectively will deliver the research

[Note: This was not a repeated theme in the responses from individuals]

Many submissions identified that collaboration was valuable; but noted that there needs to be a defined 'value-add' as a result of any collaboration; and that the distinct value of each team member needs to be thoroughly articulated and justified in the applications.

> **"Synergy should be about gain that is more than just additive - how will the named people working together achieve more than funding each separately to address different components of a research question?"**

Applications should propose why the team's combined skill set would achieve a better outcome than alternative approaches and outline how the breadth and complementary expertise within the team will support delivery of the research project. In other words, is the combination of individuals in the team 'sufficient' and 'appropriate' to deliver a successful outcome for the project, and is each member of the team 'necessary' to deliver the project?

Key elements that were identified to outline the appropriateness and value of the team included:

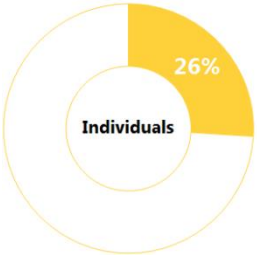
- Outline of value of individual skills and role on the research project
- An assessment whether all individuals are needed to deliver the project
- A clear framework for how the team will work effectively together
- A statement of how the diversity of the team strengthens likely research outcomes.

The intent of Synergy is not clear to all respondents

> **"A clear definition of the term "multidisciplinary" should be given, acknowledging that teams working in the same broad discipline are in fact multidisciplinary due to their specialisation."**

Some submissions called for greater clarity on the types of research that would be most appropriate for the Synergy parameter; on the basis that this will ensure the peer review parameters clearly support that intent.

It was suggested that data could be used to understand where there are "collaboration gaps" in the current grant programs, and that Synergy grants should be targeted towards fields of research where synergy is expected to have the greatest impact. That said, some of the responses were not convinced that NHMRC needed to incentivise Synergy and that it would happen naturally and where there is a desire to collaborate.



There are mixed views as to whether previous collaboration experience should be considered

> **"Much of this collaboration would have happened organically, without particular NHMRC incentivisation. Many of these research teams already have connections with one another, and the benefits of collaboration are well-known through experience."**

Several submissions commented on the balance between demonstration of current collaboration and not hindering new collaborations.

Broadly, these responses made three distinct points:

- **Assessing existing partnerships –** there should be a positive recognition where there is a history of prior collaboration and significant outputs from that collaboration; this may indicate the potential for future successful collaboration.
- **Over emphasis on existing collaborations will hinder new teams forming –**too much emphasis on previous collaboration can have a negative impact on the development of

new collaborations. The requirement for extensive previous collaboration should be acknowledged but carry less significance. Teams should not be marked down if they have not collaborated in the past.

- **Demonstrated collaboration, not necessarily in current team** – some submissions argued that while it was important to have the demonstrable ability to collaborate, it was not necessary to demonstrate you have worked with the same team.

There is potential for Synergy to increase opportunities for some groups

[Note: This is a collection of suggestions, rather than a single key theme and as such the proportion of respondents has not been reported.]

Submissions outlined that the Synergy parameter should consider the diversity of the team delivering the work. Many of the organisational submissions identified demographic diversity (gender, age, cultural background) as a key consideration for the Synergy grants; as well as experiential diversity (career stage and research background). It was seen that both should be key considerations for the Synergy parameter to support team diversity.

Opportunities were outlined for Synergy grants to better support involvement of five distinct groups in NHMRC funded research, including:

- **Multi-disciplinary researchers –** providing an opportunity to bring together individuals from different research fields who often do not work together, but who in this instance would deliver significant outcomes. Submissions also outlined that it was important to define "multi-disciplinary" for this to be effective.
- **Early career researchers –** inclusion of juniors and clear mentorship was identified as important for the Synergy parameter; while some submissions identified that it was important to outline the benefits for the early and mid-career researchers in the team. Improving equity of funding based on career stage was seen as important.
- **Women –** opportunities for greater inclusion of women in research teams were identified as an opportunity for the Synergy parameter.
- **Under-represented groups –** such as Aboriginal and Torres Strait Islander researchers, researchers from different ethnic backgrounds and LGBTIQ researchers, with opportunities to explicitly value the inclusion of the perspectives and backgrounds.
- **Consumers and/or end users –** could be encouraged to participate in the preparation or review process for research projects.

Some submissions raised a concern that the Synergy parameter (and Grant) would have a negative impact on specialist fields (e.g. health economics and biostatistics), because they would be forced into support roles on collaborative teams and not considered for other grant types.

Several submissions suggested that introducing 'bonus points' or quotas for some or all of the groups outlined above would offer one way to address current equity concerns and encourage greater diversity in research project teams.

The potential to encourage international collaboration was also identified as an important opportunity. This would create opportunities for Australian research institutions and Australian researchers to work with the best researchers around the world. NHMRC could play a role in explicitly valuing international collaborations in its Synergy assessment; requiring applicants to outline their international linkages and how they will be utilised.

Implications

- **NHMRC needs to review the definition of Synergy to ensure it clearly articulates the intent of the criterion.**
- **NHMRC should consider the extent and the ways in which the Synergy criterion should support the participation of under-represented groups in NHMRC funded research projects.**

2.4.6 Feasibility

Guidance in the consultation paper

Respondents to the consultation process were asked for their input on approaches for the appropriate assessment of feasibility that would not have an over-reliance on the team's track record. The responses could refer to existing grant schemes and/or to other elements considered to be important in assessing 'feasibility'.

Consultation headlines

- **The assessment of feasibility should account for the skills and facilities that will be utilised.**
- **Clarity in the research design should be acknowledged as an element of feasibility.**
- **Preliminary data should be less relevant in assessing Ideas grants.**
- **The Feasibility parameter should include a risk assessment.**

[Notes:

- Several submissions commented on a lack of clarity on the difference between the Feasibility and Track Record parameters. As there are no grant types where both Feasibility and Track Record will both be used in the assessment, these comments have not been presented as a key theme.
- There were no clear themes emerging from the individual responses.]

Key themes

Research design, skills and facilities are important elements for assessing feasibility

The feedback indicated that research design, skills and facilities should be the key focus of assessing feasibility. Key considerations are summarised in Table 6.

Table 6: Proposed considerations for assessing Feasibility

Factor	Considerations
Research design	• Is the budget adequate to deliver the project? • Is there a clear project plan on how to deliver work in the agreed timeframes? • Are the steps to deliver the project clear? • Is there access to the data needed? • Is there access to the population needed to recruit for the study? • Is the research generalisable to the broader community?

Factor	Considerations
Skills	• Does the team have ability to draw on institutional knowledge that exists within other teams in the organisation? • Does the team demonstrate experience of using the techniques, methods and expertise previously; including experience with similar study design and the use of relevant technologies? • Does the team demonstrate a collaborative network; including organisational support structures that support collaboration with others?
Facilities	• Does the team have access to the appropriate infrastructure and the ability to use it? • Does the team have access to appropriate equipment and technology and the ability to use it? • Is the research to be conducted in the right research environment; including facilities, support personnel, mentoring capacity?

It was noted that for Aboriginal and Torres Strait Islander projects, experience in working with and engaging with Aboriginal and Torres Strait Islander researchers and participants is important.

There are mixed opinions on the use of preliminary data to assess feasibility[8]

"A major criticism of project grants has been that so much pilot data is required by reviewers that you have to do the study to get the grant.."

"Pilot data is needed… but the need for this should be reduced for Ideas grants vs current Project grant"

"Preliminary data and access to necessary equipment and/or personnel) and are both important for assessment of feasibility."

Multiple submissions commented on the issue that the use of preliminary data can create a bias in the success of grants applications. Comments fell into three key groups:

- **Preliminary data should be a focus for feasibility –** preliminary data represents a key determinant of the feasibility of a research project and should be retained as a measure.
- **Preliminary data should not be used to assess feasibility –** the importance placed upon pilot and preliminary data can result in projects being funded where a significant amount of work has already been delivered. This is counterintuitive for grants – such as Ideas grants – which are intended to be relatively untested areas of research.
- **Preliminary data should have lower prominence in assessment than it currently does –** there is a perception that currently where preliminary data is provided in support of an application for a Project Grant it will see the application scored more highly by assessors. There were multiple responses indicating that there should be less significance placed upon preliminary data in the assessment of the Feasibility parameter.

The use of an appropriate risk assessment was identified as important for assessment of feasibility. Being able to demonstrate, and account for, how risks will be identified, managed and mitigated – with the inclusion of alternative strategies and milestones – was proposed for inclusion in the Feasibility parameter. It was suggested this could/should be a separate section of the application document.

As previously referred to in Section 2.4.3 'Innovation and Creativity', some submissions outlined that Feasibility should be considered alongside Innovation and Creativity as a single (or linked) assessment. There is a trade-off between these parameters which should be acknowledged, in that the assessment of feasibility has the potential to stifle creativity and innovation.

[8] It should be noted that NHMRC does not specify that preliminary data is a requirement to support applications and does not provided guidance to suggest applications supported by preliminary data should receive higher scores by assessors

Implications

- **There is a need for clear guidelines about how preliminary data will be assessed in the future; especially with regards to Ideas grants applications**
- **If risk assessments are used, there could be a standard structure and guidance for how risks are presented and rated**

2.5 NHMRC's Relative to Opportunity and Career Disruption policies

The assessment of track record is a fundamental element of the peer review approach for Investigator and Synergy grants. When assessing track record, it is critical to ensure that the assessment is as equitable as possible. In the effort to ensure equity, the *Relative to Opportunity and Career Disruption* policies are intended to enable comparison across the diverse range of applicants. The key elements of these policies are:

- **Relative to Opportunity –** all applications submitted to NHMRC are assessed "relative to opportunity". This reflects NHMRC's policy that assessment processes accurately assess an applicant's track record and associated productivity relative to stage of career, including consideration as to whether productivity and contribution are commensurate with the opportunities available to the applicant.The types of circumstances that are taken into account include: amount of time as an active researcher; career disruption, available resources; non-research workloads; relocation; research outputs and productivity commensurate with time spent employed in other sectors, activities associated with working with Aboriginal and Torres Strait Islander communities and community obligations for Aboriginal and Torres Strait Islander applicants.
- **Career Disruption (as part of the Relative to Opportunity assessment)** - *A career disruption involves a prolonged interruption to an applicant's capacity to work, due to: pregnancy; major illness/injury; and carer responsibilities.*

The consultation paper stated that: *NHMRC's 'Relative to Opportunity' and 'Career Disruption' policies are essential to the rigorous and equitable assessment of applicant track records. Ensuring a robust framework for these policies will be particularly important in the new grant program, given the track-record focus of Investigator and Synergy Grants.*

The following sub-sections summarise the feedback relating to these two policies.

2.5.1 'Relative to Opportunity' policy

Consultation headlines

- **In general, the policy and its intent were endorsed as appropriate and necessary.**
- **There are some suggestions for improvement to the detailed elements of the policy.**
- **There are issues with the application of the policy, both in terms of whether it is applied consistently and whether it is appropriately taken into account in the assessment.**

Key themes

Table 7 summarises the five key themes that were identified within the responses to the consultation.

Table 7: Strengths and opportunities for improvement in the Relative to Opportunity policy

Theme	Current strengths	Opportunities for improvement
Opportunity for input	• Relative to Opportunity provides an opportunity for the applicant to explain their experiences and contextualise their track record	• A narrative approach would allow clearer explanation of impact on an individual's research career
Fairness	• The policy was seen as fair and took into account many of the key factors that lead to career disruption for researchers	• The replacement value does not adequately capture the impact of leave – replacement value should better reflect the impact of leave, acknowledging the impact may have been longer than the last five years of publications
Clarity and consistency	• Half of the organisational responses reported that the clarity of the policy and ease of comprehension was a key strength of the current policy • No individuals commented positively about clarity and consistency	• Some suggested that guidance for applications could be clearer on what is included in the policy • Could be measured more consistently – suggestions included development of a quantitative measurement • Impact on decision is not always clear to applicant
Use by panels and implementation	• GRP members are actively reminded to consider relative to opportunity across all assessment criteria • The policy provides guiding principles for panels • Very few responses commented positively about how the policy was implemented	• There is a perception that the policy is overlooked or ignored by some assessors • There is some concern that full disclosure of Relative to Opportunity factors may result in a project not being supported due to concerns about resource availability
Diversity	• The policy considers a diverse range of circumstances that can lead to career disruptions • There is flexibility within the application to advocate for individual situations • Supports participation of individuals from diverse backgrounds in the research community	• A broader policy may be valuable – for example to include part-time work, flexible work arrangements or cultural and community commitments • There could be improved guidance on how clinical load could be assessed • There needs to be more allowance for industry experience and how this informs track record • Gender neutral language could be introduced to the policy

In addition to the general feedback on strengths and weaknesses, there were three further areas that were suggested for inclusion in the future policy. These were:

- **Mentoring responsibilities –** inclusion of mentoring responsibilities should be identified in the policy as having a potential impact on the opportunity of a researcher
- **Clinical or teaching responsibilities –** should also be included as activities that can limit the opportunity that a researcher has to publish their research
- **Access to resources and infrastructure –** can create more limited opportunities for some researchers than others, this should also be considered.

"For relative to opportunity and career disruption, there is a tendency to add X time or X number of publications, but there is likely to be an exponential growth in publications. Adding that amount of time does not capture the full impact"

There were also several suggestions made as to how the application of the Relative to Opportunity policy could be improved in practice. These included:

- Introducing tick boxes to make the criteria for Relative to Opportunity clearer
- Adopting a narrative based approach to allow an individual to explain the impact of career disruption on their career and research output
- Providing unconscious bias training to assessors and panels to address biases that may exist in the assessment process
- Consistency with the Australian Research Council (ARC) policy to ensure consistency across funders
- Relative to opportunity to be assessed by a single panel to deliver consistent scoring.

Implications

- **There needs to be a focus on how Relative to Opportunity is applied, potentially through clearer guidelines and user cases.**
- **The potential to broaden the definition could be considered.**

2.5.2 Career Disruption policy

Consultation headlines

- **There is broad support for the Career Disruption policy, but some challenges have been noted in its application.**
- **There is a view that careers can experience ongoing disruption (for example, parenthood of young children) that is not properly reflected.**
- **There is a view that the policy needs to reflect a broader set of disruptions.**

Key themes

Table 8 summarises the four key themes that were identified within the responses to the consultation.

Table 8: Strengths and opportunities in Career Disruption policy

Theme	Current strengths	Opportunities for improvement
Acknowledging the challenges	• There is a clear recognition that some researchers are impacted by career disruptions that affect their research output	• The policy needs to consider other factors other than the duration of the disruption • Broader challenges could be included – such as international re-locations, institutional moves, clinical involvement, time spent in commercial, industrial or non-research settings.

Theme	Current strengths	Opportunities for improvement
Fair and equitable	• The policy intent deals with career disruptions in a fair and equitable way • It potentially empowers people to take time off knowing they will not be negatively impacted • It should support gender equity through reasonable parental leave allowances	• Cutting off disruption at five years means there can be an adverse effect when assessing whole of career outputs
Simplicity and clarity	• There is strong support for the simplicity and clarity of the policy • The types of disruptions are clear and unambiguous – pregnancy, major illness/injury or carer responsibilities • The approach of amending track record is relatively simple	• The simplicity of current model may fail to identify the full impact of the career disruption and does not fully account for changes in research outputs that result from leave • It does not account for ongoing impacts at work; for example ongoing parental responsibilities
Policy implementation	• Some believe the policy is generally applied appropriately	• There is some perception that the policy is not always implemented as intended by assessors and panels

Several direct suggestions were also made about how the policy could be amended. These included:

- Increasing the replacement value for publications that are included in assessment of track record when career disruption occurs, to better account for impact on researchers
- Changing the current policy for the length of absence from 28 days to 14 consecutive days for eligibility to be considered for career disruption
- Applying an adjustment factor post-assessment based on experience of career disruption
- Sectioning off a pool of funds for individuals that have been impacted by career disruption
- Aligning the policy with the Australian Research Council process which provides a blanket of replacing two years per child with past research outputs.

"For relative to opportunity and career disruption – could this be a back-office assessment? And take some of the bias out of it "

"Aware that NHMRC says we need to take into account career disruptions. Not very consistent between reviewers. How will NHMRC improve? It could be an independent panel that takes account of track record."

Implications

- **There needs to be a focus on how Career Disruption is applied, potentially through clearer guidelines and user cases.**
- **The potential to broaden what constitutes disruption could be considered.**

2.5.3 Analysis of responses

The responses were analysed to see if there were different opinions expressed between organisations, and the individual responses of male and female researchers. All responses for the two questions related to Relative to Opportunity and the two questions related to Career Disruption were coded against the key themes identified and whether the sentiment was 'positive' or 'negative', Figure 7 shows the proportion of positive responses for each of the themes identified for the Relative to Opportunity and Career Disruption policies as a proportion of all responses to that theme.

[Note: The figures presented below show the proportion of positive responses where there was a specific response related to this theme; as opposed to being a proportion of the total responses received.]

Figure 7: Positive responses as proportion of all responses on theme, by response type

		Respondent			
		All	Organisations	Male researchers	Female researchers
Relative to Opportunity	Opportunity for input	100%	100%	n/a	n/a
	Fairness	75%	100%	80%	0%
	Diversity	54%	67%	25%	44%
	Clarity and consistency	38%	50%	0%	0%
	Use by panels and implementation	7%	10%	0%	0%
Career disruption	Simplicity and clarity	91%	91%	n/a	n/a
	Fair and equitable	81%	83%	67%	100%
	Acknowledges challenges	21%	20%	33%	20%
	Implementation of policy	5%	11%	0%	0%

This analysis demonstrates that:

Relative to Opportunity

- No female researchers responded positively with regards to the **fairness** of the policy; compared to 100% of organisations who responded positively and 80% of male researchers – primarily negative responses by female researchers suggested that even with the current relative to opportunity there was still bias towards male researchers
- Only 25% of male researchers positively responded that the policy supported **diversity;** compared with 44% of female researchers and 67% of organisations – negative responses from male researchers primarily related to challenges for non-full-time researchers and the inclusion of clinical, teaching and administrative responsibilities in the policy

- No individual responses responded positively to the **clarity and consistency** of the policy – negative responses related to the guidelines that were provided for the policy
- Only 7% of all responses responded positively about **how the policy is applied** – with many identifying there were challenges with how it was applied with panels or explicitly outlining that there were instances where it had been ignored

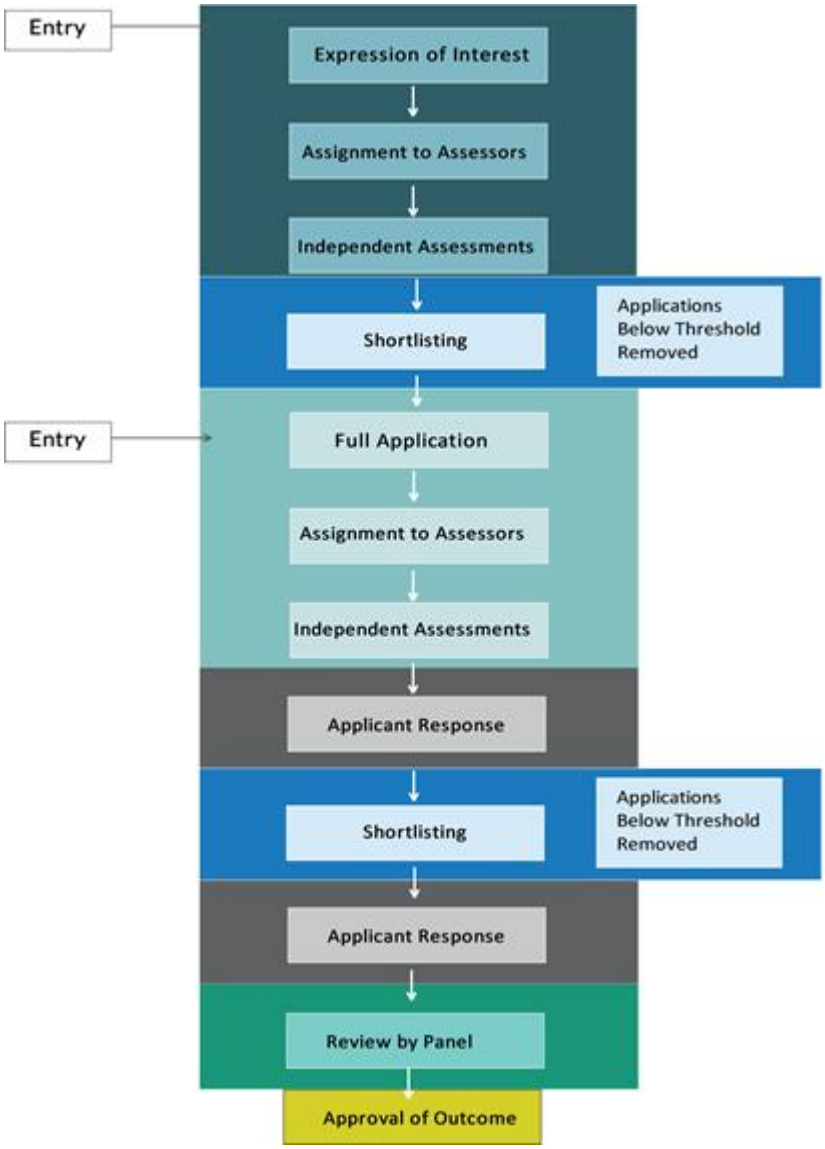
Career Disruption

- 83% of respondents responded positively that the policy was fair and equitable; although the lowest proportion of positive comments came from male individuals
- Only 5% of responses responded positively about **how the policy is implemented –** with suggestions including greater emphasis in the panel process, clearer guidelines for panels, introduction of a standard format and revision of the replacement value for Career Disruption.

2.6 The Peer Review Process

NHMRC presented a generic peer review process in the consultation paper and at the public fora. The process (shown in Figure 8) incorporates the steps currently included for peer review, plus other elements regularly referred to by the research community and seen in other jurisdictions. The consultation paper indicates that *the peer review process for NHMRC's current Project Grant scheme starts at the second entry point and takes approximately 6 months for 3,500 applications*.

Figure 8: The generic peer review process presented in the consultation



This section summarises the feedback for each of the key stages in the process.

2.6.1 Expression of Interest (EOI)

The consultation stated that: *NHMRC has received feedback that some applicants would favour using an Expression of Interest as the initial module of the peer review process for research grant schemes.*

Respondents were asked what they think about using an Expression of Interest module in peer review of Ideas Grants in the new grant program.

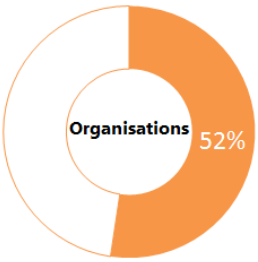
Consultation headlines

- **There was a mixed response relating to the EOI process, with a similar number of responses for and against the intent to introduce EOI into the overall process.**
- **In general there was support for the principle of an EOI, but negativity towards how it would work in practice.**
- **EOI was seen as potentially beneficial for very specific grant types, for example, targeted calls for research.**

Key themes

Feedback on the Expression of Interest process was varied

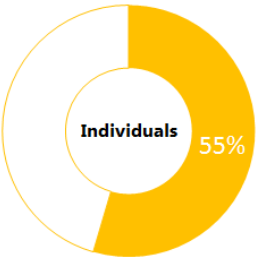
An equal number of organisational submissions expressed a positive and negative response to the potential introduction of an Expression of Interest (EOI) process. A small number of respondents provided mixed feedback on the EOI process. Feedback was also mixed as to whether the introduction would result in a reduction in the burden on peer reviewers and applicants.



Negative perspectives - A broad range of potential negative impacts were identified by those that did not support the introduction of this module. These included:

> **"Expressions of Interest often work best where the funder has specific goals or objectives and wishes to quickly screen the field of applications for those that best target their objectives... It is not clear that this will sit well in the Idea or Investigator grant schemes."**

- That an EOI process would result in an additional burden on peer reviewers and lengthen the duration of the peer review process
- That the increased length of the process due to the inclusion of the EOI stage would represent a trade-off with an expressed desire to move to two funding application rounds per annum
- An EOI process will result in assessment of a potential project with insufficient information provided to allow for an informed decision
- An EOI process could result in funding extremes such as safe projects where the benefits are clear or new and exciting projects that may lack feasibility



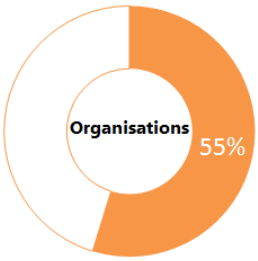
Public fora

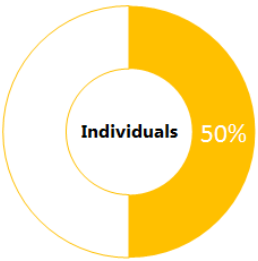
During the public fora, there were multiple comments that the introduction of an EOI process in other countries had not been successful; Ireland was highlighted as an example of this.

Positive perspectives - Several stakeholders outlined key features that may be included in an EOI process. These included:

- A strong emphasis on the idea of the research, as opposed to a project's feasibility
- A restriction on the length of the EOI form – no more than five pages in length
- The need for a clear cut off for the proportion of projects not progressing – with some suggesting 25%
- The introduction of a ranking system for EOIs, so applications are comparatively assessed
- The requirement for feedback for those that have just missed out and the opportunity to resubmit at the next opportunity
- Feedback for those that have been shortlisted so they can reflect this in their full application
- Assessment by a number of reviewers to ensure a strong and consistent decision

> **"I have a personal experience of the Expression of Interest system and found it fantastic as an applicant and a reviewer"**





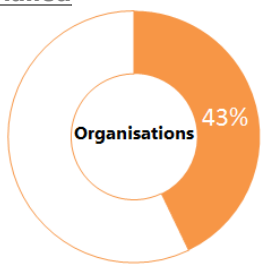
Public fora

Other comments:

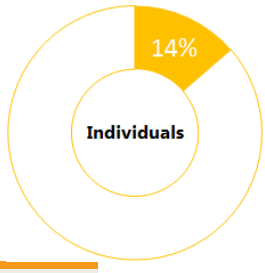
- There were several responses that supported a blinded review process for the EOI stage. However, others outlined that challenges may exist in the process being 'truly blinded' and maintaining anonymity given the small pool of researchers in Australia.
- Some respondents commented on the inclusion of consumers during the EOI stage but few responses were clear whether this would deliver better outcomes or other clear benefits.

Expressions of Interest would be more appropriate for some grant types and could be trialled

Several responses outlined that an EOI process is most appropriate where there is a clear defined focus of research and the EOI serves to provide eligibility screening for an application. For this reason it was suggested that the EOI would only be suitable for specific schemes such as Targeted Calls for Research; as this could be used to decide which aspects of a given call are the priority and for assembling assessor panels ahead of time. It could also be appropriate for disease specific grants schemes.



Some suggested that there may be opportunities to trial EOIs. This would allow for an assessment of what the impact is on application numbers, the burden on assessors and on the system more broadly.



Finally, others suggested the impact of moving to a EOI process could be modelled to understand the impact on timelines and burden on researchers.

Implications

- **The lack of support for EOI is primarily based upon a belief that it will add to the burden of the process; for this reason it might be worth considering testing an EOI process before it is fully implemented.**

2.6.2 Independent Assessments

The consultation stated that: *Independent Assessments are provided by assessors without discussing the application or conferring with other assessors. A Full Application includes all the information required to enable review against a grant scheme's assessment criteria.*

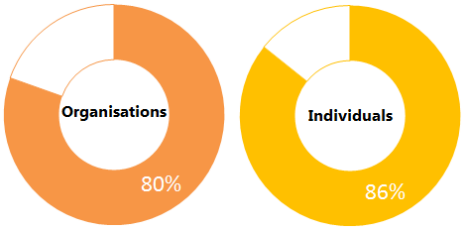
Respondents were asked what they think are the important features of Independent Assessments.

Consultation headlines

- **Independent Assessment is supported by the majority of respondents.**
- **There are operational challenges with ensuring the right expertise is deployed in assessing applications.**
- **There is a need to increase the pool of assessors.**

Key themes

Independent Assessments are supported as a key part of peer review



> **"The number of reviewers is critically important. Smaller number of researchers lead to greater scholastic variability"**

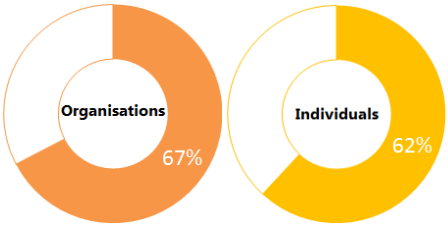
Most of the submissions were supportive of the inclusion of Independent Assessments in all peer review processes. Indeed, the majority of responses indicated that a larger number of independent assessments than those currently utilised would be the ideal (i.e. the majority of responses said a minimum of 4 or 5 assessors should be used per application).

Those that did not support independent assessments suggested that it would be less of a burden if resources were directed towards a more comprehensive panel process.

✓ Public fora

There are challenges associated with the expertise of assessors

Several challenges were identified in the current Independent Assessment step of the process. These were primarily concerns about the expertise of assessors, in particular those assessing projects outside their field of expertise. It was highlighted that this is a particular issue in smaller research fields where conflicts of interest preclude expert assessors from being involved.



> **"Independent Assessments are currently core to the peer review system for project grants. To be acceptable they need to include a mix of relevant expertise and experienced assessment"**

Concerns were also expressed that the current pool of assessors is too small which creates a disproportionate burden.

Several mechanisms were proposed to address some of these concerns, including:

- Making participation as an assessor or panel member a condition of accepting a NHMRC grant
- Increasing the number of assessors that consider an application to five or six to provide a wider range of expertise and more consistent assessment
- Introducing self-nomination for assessors to identify relevant research applications they can provide appropriate assessment on through a portal or similar system
- Introducing a greater numbers of international assessors
- Revising the current conflict of interest policy to ensure people in the relevant field are assessing applications

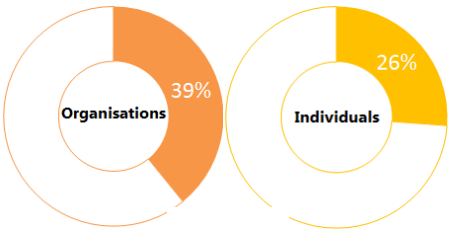
✓ Public fora

> **"There should be a consequence for not reviewing. If you don't get involved in review process, you can't put a grant in next year."**

From these proposed mechanisms, a tension between the burden on assessors and the need to have greater levels of specific expertise is apparent. Any changes to Independent Assessment processes will need to consider how to manage this tension.

A blinded review presents potential challenges

The consultation paper hypothesized that the Independent Assessment step was an opportunity for a 'blinded' assessment. Where this was commented upon the majority of respondents noted that there were challenges associated with adopting a 'blind review'. This was primarily the challenge associated with maintaining anonymity due to the small pool of researchers in Australia, particular in smaller fields.



Some respondents suggested that a blinded review could be most appropriate for Ideas Grants where there is a lesser focus on the assessment of Track Record.

✓ Public fora

Implications

- **Mechanisms to increase the pool of assessors should be considered, including refinement of the conflict of interest restrictions, and establishing obligations for researchers with NHMRC grants.**

2.6.3 Shortlisting

The consultation stated that: *NHMRC uses a variety of approaches to reduce the burden of peer review on assessors. Most commonly, this involves removing the least competitive applications from further review based on the outcomes of the first phase of the peer review process.*

Respondents were asked what they think are the important features of Shortlisting.

Consultation headlines

- **Shortlisting is an important step in the process and helps minimise the burden.**
- **There need to be clear thresholds that are well understood, with the potential for near-misses to be given an opportunity to re-apply.**
- **Comparing/ranking submissions could be a fairer way of shortlisting than using a simple scoring mechanism.**

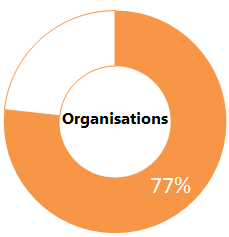
Key themes

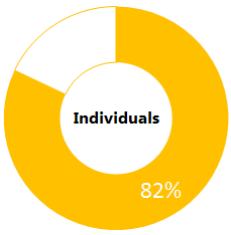
There was generally positive feedback relating to the Shortlisting process

> **"Given the proposed changes to the major NHMRC grants will in all likelihood limit the numbers of grant applications it is questionable whether shortlisting will be needed."**

Shortlisting is seen as significantly reducing the burden for peer reviewers and is an appropriate stage to remove applications that will not be funded from the process.

Those that did not support shortlisting felt that other modules (e.g. EOI) being considered are likely to reduce the need for the Shortlisting process. This also includes the impact of capping the number of grants researchers can apply for.





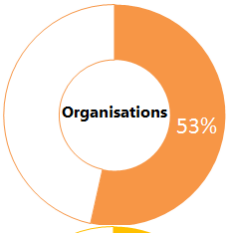
There should be a clearly defined and communicated threshold for shortlisting

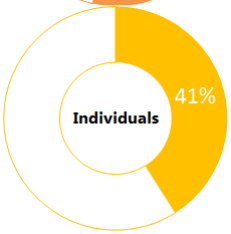
Respondents supported establishing a cut-off threshold for each of the different grant types where applications would continue or not continue through the process. There was support for these thresholds to be different across the different grant types and related to the expected success rates for the grant type.

> **"The threshold probably needs to vary with success rates. The 50% shortlisting cut off is probably appropriate for low success rate schemes."**

The current approach of removing the bottom 50% applications was seen as sensible by many; but some felt there was an opportunity to increase this if the track record evolves to focus on outcomes and impact.

It was commented that if there was an EOI stage introduced that there should be a relationship between the proportion of applications culled at EOI stage and then at the Shortlisting stage. For example, it was suggested to cull 50% at Shortlisting if no EOI, but only 40% at Shortlisting if there is an EOI step that involves an initial cull.

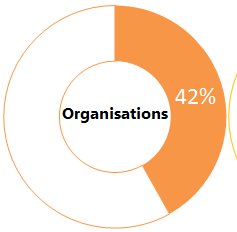


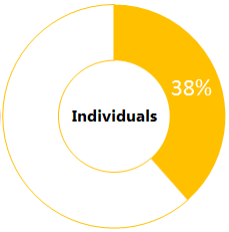


It was noted that it is possible to have more than a binary yes/no for shortlisting outcomes; with 'near-miss' applications allowed to re-apply in the following round.

Fairness and assessment expertise are important for the Shortlisting process

There is a concern that currently shortlisting is only undertaken by the primary and secondary spokesperson. It was suggested that it should include the external assessor scores as well, although it was





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noted that this may result in some applications not being shortlisted if the external assessors were not experts in the field.

It was commented by some respondents that a straight scoring system can cause some issues in the consistency and potential biases in the assessment, and moving to a ranking system would remove this issue.

Some respondents suggested that shortlisting stratified by diversity factors, such as gender and career stage, could mitigate some of the diversity issues that have been raised.

Implications

- **NHMRC should develop clear guidelines for shortlisting which outline the thresholds for shortlisting at each stage and consider how the allocation of assessors aligns with these guidelines.**

2.6.4 Applicant Response

The consultation stated that: *NHMRC currently has two main approaches for providing applicants with an opportunity to address issues raised by their assessors: (i) written rebuttal before shortlisting and (ii) interview by a peer review panel after shortlisting. NHMRC also uses peer review models that do not include an Applicant response module. However, to ensure the rigorous assessment of applications in such models, the number of Independent Assessments is increased.*

Respondents were asked what they think are the important features of Applicant Response.

Consultation headlines

- **There are clear differences of opinion on the value of the Applicant Response.**
- **It was acknowledged that this step could be removed and other safeguards or feedback mechanisms could be adopted in the process.**

Key themes

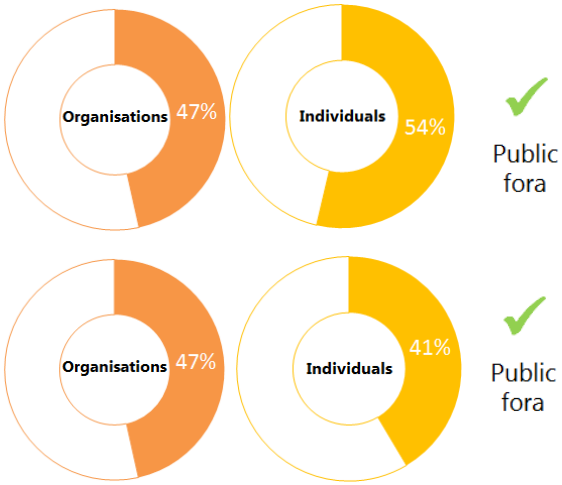
There was a mixed response on the value of the Applicant Response stage

"As the applicant response process may not influence the outcomes materially an argument could be made for removing it from the process to allow a shorter overall assessment cycle."

Feedback from the organisational submissions equally supported and did not support the inclusion of an Applicant Response stage as part of the peer review process.

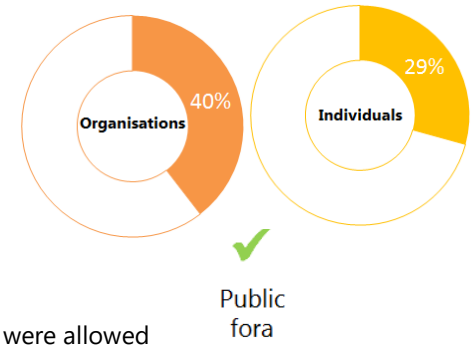
Submissions that provided **positive feedback** outlined that the Applicant Response provides an opportunity for the applicant to refute or validate any issues that may have been raised by assessors. Alternatively, it also provides an opportunity to provide information that may help to confirm that the research project is feasible.

Those that were **not supportive** of the Applicant Response step typically cited that the Applicant Response did not have a significant impact on the final outcomes of an application, and that the removal of this step would save a significant amount of time in the overall process.



There are challenges in the current process that make Applicant Response important

The submissions identified key challenges that exist in the current process, which if addressed, would reduce the need for an Applicant Response.

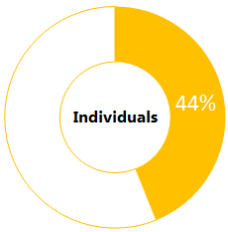


- Applicants are not provided with the full set of information relating to their application; including the score that it has received. This means the response is typically made to qualitative feedback only.
- Applicants that receive feedback are not then able to modify their application based on this feedback. Some submissions suggested that the current restrictions on modifying applications should be removed.
- If the multiple rounds were held every year and applicants were allowed to resubmit 'near-miss applications then the Applicant Response would be less important.

> **"Applicant responses need to remain as they provide applicants with the only opportunity to correct any misconceptions raised by reviewers."**

Applicant Response was identified by individual responders as a necessary safeguard

The feedback from individual responses indicated that the Applicant Response was important in the current peer review process for several reasons:



- **Expertise of assessors –** not all assessors are necessarily experts in the research field of the applications. The Applicant Response therefore allows for applicants to address misunderstandings related to the research proposal.
- **Nature of feedback –** limited feedback in the current system means that the critique received for the Applicant Response is a key piece of feedback for applicants that should be reflected in their application
- **No current EOI process –** if there was an EOI process and the ability to re-submit in the next round then an Applicant Response may not be required
- **Resubmissions and 'panel memory' –** as revised re-submissions may not return to the same assessors for the next year's application round, the Applicant Response provides an important mechanism to address concerns which is not fully utilised.

Implications

- **The Applicant Response stage needs to be considered in the context of the whole process and whether there are alternate safeguards in the process.**

2.6.5 Review by Panel

The consultation stated that: *All of NHMRC's current grant schemes use Review by Panel at least once during the peer review process. Review by Panel provides an opportunity for assessors to discuss the strengths and weaknesses of an application and differs from Independent Assessment.*

Respondents were asked to consider what they think are the important features of the Review by Panel.

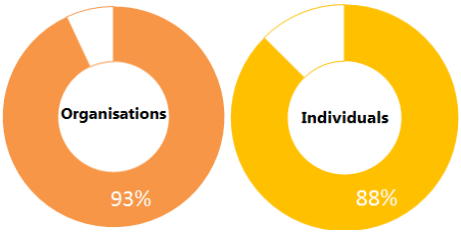
Consultation headlines

- **Review by Panel is seen as the most essential element of the process.**
- **There are several suggestions as to how panels could be improved or the burden on the panels reduced – including having the top x% of applications following shortlisting be passed straight to approval.**

Key themes

Review by Panel was identified as an essential part of a peer review process

Almost all organisational submissions identified the panel process as an important component of a peer review model. It was commented that panel review is a universal feature of competitive grant scheme assessments globally. It provides an opportunity for detailed discussion and allows for thorough examination of applications.



A small number of responses provided feedback on issues in the current format. These are summarised below.

The right expertise on panels is of critical importance

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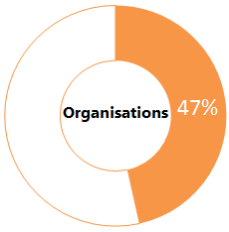
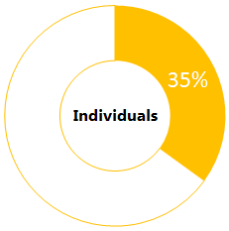
Concerns were expressed that in the current model not all Grant Review Panel (GRP) members are appropriately skilled to make an assessment based on their expertise in relation to the focus of the proposed research project. This can lead to an overreliance on the primary spokesperson's assessment of a grant application and/or inconsistent assessment during the GRP process



Several suggestions were put forward as to how to improve the quality of panels:

- **Targeted field specific panels –** emphasising the importance of domain specific expertise or disease expertise for targeted grants
- **Assigners Academy –** there are limitations on the availability of high quality assessors to sit on panels due to commitments with the Assigners Academy. Removing this would increase the talent pool to participate in panels.



> **"Expertise in the peer review process is one of the big problems at the moment. The push to collaborate creates conflicts of interest, eliminating a lot of good people from the pool"**

- **Conflict of interest policy –** restricts the possibility of the best people undertaking the assessment through a definition of conflict of interest which is too restrictive and limits participation of field experts in panel decision-making
- **Experienced panellists –** some responses indicated that panellists should have at least one NHMRC program grant as a CI in order to demonstrate a clear understanding of the process; whilst others proposed that researchers across all career stages should participate in panels

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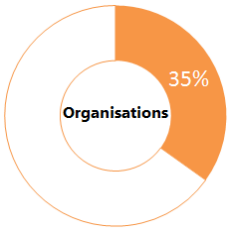
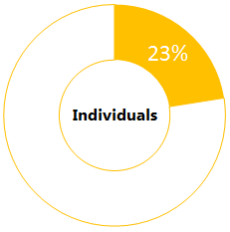
- **Use of technology** - conference calls and other technology would ensure the most appropriate assessors have greater capacity to participate

There is a difference of opinion on whether all applications should be considered by the panel

The submissions demonstrated a difference of opinion as to which applications the panel should assess. Different models were put forward, including:



- **All shortlisted applications –** with panels considering all applications that are shortlisted in the same manner irrespective of score
- **Assessment of middling applications –** with panels only assessing the borderline applications that were not clear passes. This could potentially reduce the burden on assessors



- **Small number to progress through without panel consideration –** a small number (for example, the top 10%) could be passed straight through to approval following the Shortlisting based on the scoring provided by independent assessors. It was also suggested that the top 10% (for example) could be subjected to a less detailed panel process

Loss of 'panel memory' was identified as a key issue

"There is currently no way that feedback is incorporated in a corporate memory for the NHMRC"

[Note: This was not a repeated theme in the responses from individuals]

Some submissions noted that there could be an opportunity to re-apply to the same panel, on the basis that the panel has context of research proposal and has provided feedback in the past. This could be limited to 'near-misses' rather than all applications rejected by a panel. It was felt this retention of panel insight would ensure that the issues originally identified have been effectively addressed and foster an increased sense of fairness in the process.

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Implications

- **There should be a focus on: (a) how to improve the perceived 'fairness' of the Review by Panel step; (b) reduce the burden on the GRPs**

2.7 Peer review of the specific grant programs

The three new schemes within the NHMRC grant program are:

- ***Investigator Grants:*** *To support the research programs of outstanding investigators at all career stages*
- ***Synergy Grants:*** *To support outstanding multidisciplinary teams of investigators to work together to answer major questions that cannot be answered by a single investigator*
- ***Ideas Grants:*** *To support focused innovative research projects addressing a specific question*

This section summarises the feedback received on what the respondents believe would be the best process for each scheme.

[Note: Due to the nature of the responses provided for the questions in this section; the 'Consultation headlines' and 'Implications' boxes have not been included. This is because the respondents have been asked to provide a model process rather than comment on specific questions.]

2.7.1 Investigator Grants

Respondents supported the two parameters proposed for the Investigator Grants

The feedback from submissions supported the two parameters proposed for the Investigator Grants process:

- **Track record –** was supported as a key ongoing assessment parameter for the Investigator Grant process. It was observed that clear guidance on how to benchmark track record based on career stage and field of research would be valuable.
- **Knowledge gain** – was supported as a key parameter for Investigator Grants.

It was also suggested that aligning the application documentation with the parameters and supporting information would enable targeted assessments of the submissions.

Some submissions suggested that a 'Vision' statement would benefit the application.

There was general consistency in the preferred peer review process for Investigator Grants

Several submissions made similar suggestions on the preferred peer review process for Investigator Grants. These suggestions shared many of the same core features. These core elements are outlined in Table 9.

Table 9: Common features suggested for the Investigator Grant process

Module	Key features	Variations in model
Full application or EOI	• The consensus was that a full submission was appropriate	• A small number of responses suggested an EOI stage prior to this • An equal number actively stated that an EOI would not be appropriate

Module	Key features	Variations in model
Independent Assessment	• Broad support for assessment of the applications by external reviewers • Agreed by many that this should inform a shortlisting or decision-making process	• Variation in the number of assessors suggested • Variation in the mix between panel members and external assessors • The focus of the assessment varied under different models – for example solely focused on track record assessment for some, but not others
Shortlisting	• Many submissions supported the inclusion of a shortlisting process for Investigator Grants	• Shortlisting process could occur following the panel process • Relative cut-off was not agreed – it was suggested that this could be based on the success rate of scheme and the total volume of applications
Panels	• Most submissions supported the inclusion of a panel assessment stage by panel members with clear expertise	• Many submissions were supportive of panels that made use of technology, such as teleconferences or videoconferencing
Interview	• Submissions supported the value in applicants being interviewed for this program	• This could be in addition to or instead of panel discussion • Panel interviews would also be appropriate
Approval and Feedback	• Many submissions outlined that providing feedback was important	• Some suggested that this should occur earlier in the process (such as after shortlisting) to allow for refinement before final submission of the application
Opportunity for re-submission	• Several submissions supported an iterative process which allowed applications to be re-submitted following feedback; especially those that were deemed a 'near-miss' • This may be less relevant for Track Record based schemes	• This could be achieved through a 'rolling application process' • Alternatively, multiple application rounds per year could be introduced • The ability to re-apply to the same panel was also identified as critical

In addition to the common model outlined above, other process steps were suggested in the submissions. These included:

- **Inclusion of Expression of Interest stage –** several submissions outlined similar models to that outlined above but with an initial EOI process. In some models, this provided the basis for iterative feedback on the full application, while for others it provided an initial screening mechanism.
- **A two stage process with initial emphasis on track record –** initial assessment through EOI or full application with a primary screening focus on track record, before fuller consideration of the proposed research and potential knowledge gain.

- **A smaller proportion of applications shortlisted, with the ability to re-apply –** a process step with the intent to remove many more than half of applicants through the shortlisting process; but with feedback provided and the opportunity to reapply through an iterative process.

There were some responses that suggested retaining the current Fellowship model on a trial basis to maintain some continuity whilst the new grant program is implemented

Several submissions outlined that there could be an opportunity to utilise the current Fellowship assessment process while the new grant program structure is being embedded. These applicants pointed to challenges in recommending an assessment process when there is limited information on the grant program and some elements of these programs are still to be confirmed. Delaying the implementation of a new peer review process for this (the most significant by volume) scheme would allow for assessment of how the scheme has been implemented, including application numbers and success rates to enable an informed decision on the appropriate peer review process.

2.7.2 Synergy Grants

Applicants were supportive of the parameters, but not clear on the relative emphasis of each

Feedback from submissions supported the three key parameters for the Synergy Grants process:

- **Track record –** with an emphasis on the track record and skill sets of the team members in relation to past collaborations
- **Knowledge gain** – supported as a key indicator of a Synergy Grant application
- **Synergy (team diversity and collaboration) –** there was strong support for this measure with emphasis on demonstration by the applicants of the distinct value-add and the complimentary skill sets and expertise that exists within the team.

There were several comments that the weightings of these criteria were not currently clear and that they need to be determined and communicated; otherwise Track Record will be seen as the dominant parameter by default.

There was general consistency in the preferred process for Synergy Grants

Several submissions made suggestions as to the appropriate peer review process for Synergy Grants. These suggestions shared many of the same core features with some variations. These are outlined in Table 10.

Table 10: Common features suggested for the Synergy Grant process

Module	Key features	Variations in model
Full application / EOI	• Broad support for submission of a full application at the first stage	• Some commented that an EOI process would be appropriate (this is discussed further in the section below)

Module	Key features	Variations in model
Independent Assessment	• Need for a large number of reviewers to ensure there is a broad range of expertise for multidisciplinary grants • Include clear guidelines on the assessment of diversity (with scoring against the different elements)	• It was suggested that the assessment could be made through the panel using a ranking approach • It was also suggested that reviewers could be identified through a key word matching process to identify the most appropriate assessors
Shortlisting	• Shortlisting for this grant program was supported, but there were differences as to the extent of shortlisting	• Should include an appropriate threshold – but there was significant variation on what that might constitute
Panel interviews	• While not identified as necessary by all submissions, others identified clear benefits, including: • Valuable to assess team cohesiveness • Supports desire to understand team dynamics and synergies	• None proposed
Panels	• A process to score and rank based on interviews was supported • Importance of multidisciplinary panel members identified due to focus and nature of the Synergy grant	• Some recommended panels could undertake discussion by exception • Applicants were broadly supportive of use of technology to conduct panel discussions • Suggestion that there could be a dedicated Synergy grant panel • Alternatively panel assessment could run in parallel with external assessment, with the panel focused on track record and synergy – with knowledge gain assessed by external assessors
Approval and Feedback	• Importance of feedback was emphasised	• Broadly, submissions were not supportive of inclusion of a rebuttal process for Synergy grant applications
Opportunity for resubmission	• No broad support for the general opportunity to re-submit	• Some support for selective opportunities to re-submit for highly ranked applications that were not successful • Suggested that there is a cap on the number of times an applicant can re-submit the same proposal

In addition to the common features of the model outlined above, several distinct processes were also put forward for Synergy Grants. While each model referred to the proportion of Medical Research Endowment

Account (MREA) funds associated with the Synergy Grants, the response to this differed significantly with some suggesting that this provided an opportunity for a more fulsome process and others identifying an opportunity for a more streamlined process. These suggestions included:

- **Significant shortlisting at the EOI stage with a high threshold for applications to proceed –** only putting forward a small number of applications provides an opportunity to submit full application by invitation only. This would result in a highly selective process with only the EOIs that were perceived as very high quality invited to submit.
- **A simpler peer review process with just the review by panel and an interview with the team** – using a more streamlined assessment process given the smaller number of grants that will be associated with the Synergy Grants scheme.
- **More detailed assessment process –** given the focus on significant scientific problems and the likely lower burden on applicants, additional information could be requested beyond what is currently captured.

In addition to the model suggestions outlined above, there was also strong feedback that the current model for Program Grants would also provide an appropriate structure for Synergy grants.

There were several features of the proposed Synergy Grant peer review process where there was disagreement

There were differences in opinion on three key modules in particular. These were:

- **Expression of Interest** – there was mixed feedback with some arguing that it would not add value, while others outlined different and separate ways it could be valuable, including:
  - As a preliminary assessment of track record and/or significance
  - By allowing applications to demonstrate that they meet the intentions of the research scheme
  - To remove applications based purely on the Synergy parameter
  - To cross-check against National Science and Research Priorities and/or other key priorities
- **Number of rounds per annum** – some suggested that a single round per year would be most appropriate given the scale of the applications, while others indicated it was important to have two rounds per annum as it may require more iteration to meet the Synergy parameter
- **Inclusion of Applicant Response** – many were comfortable that a rebuttal was not required for the Synergy grant applications; however some did indicate that, as per other schemes, the Applicant Response should be retained for all grant types.

Capping was raised as a potential consideration for Synergy grants

Capping was identified as a key consideration for Synergy Grants. There were two different suggestions:

- **Capping for Administering Institutions –** given the limited funds that are directed toward Synergy Grants, some responses suggested that the number of Synergy Grants per organisation could be capped to ensure that funds available for Synergy Grants are distributed across a variety of organisations
- **Removing individual capping from Synergy grants –** some responses suggested that removing Synergy grants from capping of individual applicants would allow for the best multi-disciplinary research to be presented and would not restrict individuals applying as CIs on other applications.

2.7.3 Ideas Grants

Applicants were supportive of the parameters for Ideas Grants

Feedback from the submissions were supportive of the four key parameters for the Ideas Grants process:

- **Innovation and creativity –** was identified as a key consideration with a desire that Ideas Grants support projects that are distinct, exciting and innovative; supporting new ideas and thinking
- **Significance –** the importance of the research was identified as important by several submissions for Ideas Grants
- **Knowledge Gain –** was supported as a key parameter with comments that knowledge gain relates to the potential for the impact on the field of research, clinical practice and improved knowledge in an area relevant to human health
- **Feasibility –** seen by several respondents as the least important parameter but still important (especially if it includes a risk assessment)

Some additional considerations were raised as important including environment and mentorship; although the earlier specific question on the Feasibility parameter suggested that these could be included in that parameter.

There was general consistency in the preferred process for Ideas Grants

Several submissions made suggestions on the preferred peer review process for Ideas Grants – this common process and potential variants are outlined in Table 11.

Table 11: Common features suggested for the Ideas Grant process

Module	Key features	Variations in model
Full application	• Most responses saw Ideas Grants starting with a full application	• Others put emphasis on the inclusion of an additional EOI stage (discussed in further detail below)
Independent Assessment	• If a full application is the start of the process, the preferred next stage was assessment by external assessors	• It was observed that at least four to six assessors would be needed due to the innovation parameter
Shortlisting	• There was support for a Shortlisting process that would see 1 in 3 applications proceed	• Some suggested that top rated applications after Shortlisting could be automatically funded • Ongoing year-to-year adjustment of percentage of applicants that are shortlisted to continue to manage burden on reviewers • In some proposed models, it was suggested that the panel do the initial shortlisting
Panels	• The Panel assessment was seen as an important step	• Suggested that the Panel could just focus on determining the budget for the project and not consider other parts of the assessment
Approval and Feedback	• Suggested that due to the nature of innovative applications that all applicants are provided with feedback, including scoring and/or ranking	• No further comments

Module	Key features	Variations in model
Opportunity for resubmission	• Should be allowed in the next round for those that were identified as 'near-miss' applications	• If an EOI step was in place then suggested that resubmissions start at the full application stage without an EOI

Alternative models were also put forward for the Ideas Grants peer review process. These included:

- **Inclusion of EOI in above model –** with an additional stage prior to full assessment for EOI applications and assessment through a panel or independent assessors for shortlisted applications to be invited to submit full applications
- **Review by external assessors with no panel –** several submissions argued that with a significant number of independent assessors, the GRP process would not be required for the Ideas Grants process
- **Review by panel with no external assessors** – other submissions suggested going straight to a Panel assessment.

Other features could also be considered in the process for Ideas Grants peer review

Increasing the frequency of Ideas Grant rounds was seen as important due to the innovative nature of the grant scheme. This would enable iterative applications to ensure grants of the highest possible quality are funded; but that emerging ideas are given the opportunity to be further developed through the iterative process.

The removal of an Applicant Response or rebuttal process would enable this and would be considered acceptable if there was acceptance that good ideas would be given multiple opportunities to evolve. Suggestions for multiple rounds included:

- Moving to two Ideas grant rounds per annum
- Moving to a process with nine month grant rounds (i.e. four rounds every three years)

Other design features were also suggested to improve the overall decision making in the process. These included:

- **Budget assessment –** request for budgets and assessment to only occur following shortlisting
- **A blinded assessment –** of all or part of the process to support equity. It was commented that it would be necessary for the administering institution to play a significant role in certifying that an applicant is a genuine researcher.
- **Retaining memory in panels –** including securing longer term commitments from the same panel members with rotating membership to ensure that there is consistency from round to round.
- **Relaxing conflict of interest protocols** – to ensure that the most appropriate individuals are able to assess Ideas Grants, thereby supporting the best quality research.
- **Removing rebuttal from process –** the Applicant Response stage was not seen as particularly valuable if there was a greater emphasis that on iterative resubmissions with a greater frequency of Ideas Grants rounds.

3 Part B: The targeted consultation

3.1 Consultation approach

3.1.1 Overview

On 2 February 2018 a by-invitation workshop was held at the NHMRC office in Canberra. The full-day workshop was organised and facilitated by Nous on behalf of NHMRC.

In the period between the conclusion of the public consultation and the workshop, NHMRC had prepared two draft peer review processes: one combined process for Investigator and Synergy grants, with a separate process for Ideas grants. The Track Record working group[9] also developed a draft assessment framework that was ready for testing.

The objectives of the workshop were to:

- Provide feedback to the research community on the public consultation
- Discuss whether and why the peer review model needs to be changed
- Test the stakeholders' perspective on draft peer review processes and on the emerging framework for assessing Track Record.

3.1.2 Participants

The workshop was attended by over 50 members of the research community, who were selected to represent the diversity of Australian researchers. The attendees included:

- Early to mid-career and senior researchers
- Aboriginal researchers
- An almost 50/50 split of male/female researchers
- Researchers working in every state and territory
- Researchers representing research institutes, universities and peak bodies.

Those attending were provided with the summary of the consultation, which was subsequently released publically on 12 February 2018.

3.1.3 Structure

The workshop was based around four main sessions and included a series of presentations by members of NHMRC. The four sessions were:

1. Key factors in a peer review process
2. Contentious issues in the current NHMRC peer review process
3. Testing the proposed peer review processes and Track Record framework
4. Final reflection on the proposed changes to the processes.

The following sections summarise the feedback gathered in each of these sessions, including an outline of the proposed peer review processes and track record assessment (as presented to the workshop).

[9] https://www.nhmrc.gov.au/restructure/changes/peer-review/track-record-working-group

3.2 What is important for the future of peer review

3.2.1 Overview

Workshop attendees were asked to consider and discuss the following questions:

1. What would a good peer review process look like?
2. What are the key factors that will be essential in any revised peer review process?

[Note: At this stage in the workshop, attendees had not seen the proposed new peer review models.]

3.2.2 What a good peer review should look like

There was broad agreement among workshop attendees that a good peer review process would be one that is fair, reliable, transparent and efficient. Specific responses associated with these characteristics are outlined below:

Fair – the peer review process should be unbiased, with decisions made by assessors with the relevant expertise. It should result in decisions which are evidence-based, justifiable and equitable. It is important for the process to be seen as being fair by the broader research community.

Reliable – applications should be assessed by independent and experienced assessors, with the expertise to make evidence-based decisions about grant applications.

Transparent –the processes and criteria for selecting and funding research should be clearly communicated to applicants, assessors and the community. An improved feedback mechanism should be incorporated. The process should balance transparency in decision making, with the burden of peer review.

Efficient – the process should be streamlined to enable timely decision making. It should reduce the burden on both assessors and applicants.

In addition to the four main themes above, some attendees proposed that a good peer review process would:

- Be fit for purpose – able to be adapted to different grants processes.
- Reduce waste by reducing duplication and utilising existing knowledge.

3.2.3 Key factors

A wide range of key factors were proposed as necessary within a good peer review process – as summarised in Figure 9. These factors have been grouped into 'people' factors (primarily relating to assessors), 'process' factors (primarily relating to the assessment process), and 'core' factors (primarily relating to what is assessed in the peer review process).

Figure 9: Key factors identified for a good peer review process

People Factors

- Appropriate reviewers with high quality, relevant expertise
- Multiple independent reviewers
- Diversity of reviewers
- Panels to be educated and aware of unconscious bias
- Training for reviewers to ensure consistency
- Carefully considered panel selection
- Panels that retain corporate memory
- Accountability in decision making

Process Factors

- Clarity of assessment criteria
- Consistent understanding of what is valued
- Adequate and timely feedback to applicants that allows improvement and iteration
- Feedback to reviewers
- Minimised burden on applicants and assessors
- Timely and efficient
- Evidence-based and using data to improve
- Transparent communication
- Decisions are justifiable and there is consistency and reproducibility of decisions
- Near miss applications supported to reapply

Core Factors

- A robust assessment of methodology and feasibility
- Valuing of industry and commercial experience
- Track record is important, including for Ideas Grants
- Support for diversity of research and researchers and fostering of new researchers to build their careers
- Consideration of how to reduce research waste – avoid duplication and making use of existing knowledge

3.3 What is contentious about the current peer review

3.3.1 Overview

To understand which elements of the current peer review process creates the most concern, workshop participants were asked to identify the aspects of peer review they see as the most contentious. Participants discussed the following questions:

1. What aspects of peer review do you see as the most contentious?
2. Why are these aspects contentious?
3. What could be done to make it less contentious?

[Note: At this stage in the workshop, attendees had not seen the proposed new peer review models.]

3.3.2 Contentious issues

Table 12 outlines the aspects of the current peer review process that workshop attendees identified as being the most contentious. Potential solutions for addressing the issue that were proposed by the attendees have also been summarised.

Table 12: Aspects of peer review identified as being contentious

Contentious issue	Elaboration	Potential solutions
The current Conflict of Interest policy	• Limits available assessors, resulting in a reduction of expertise in assessment • Unclear whether it successfully removes bias – some elements of bias such as envy and enmity can't be removed.	• Reviewers should be known to applicants • A less restrictive conflict of interest standard should be defined
Composition of panels	• Conflict of interest limits the composition of panels • There is a perceived lack of diversity on panels • Spokespersons may have a disproportionate influence on outcomes	• Panels need very experienced Chairs and need observers, including consumers.
Choice of assessors	• Some assessors have inadequate expertise, resulting in reduced reliability, quality and consistency of assessments	• Build corporate memory and ensure panel continuity
Perceived bias in the peer review	• There is a perception that bias is built into the peer review • A shortage of reviewers and time to review applications due to workload can encourage bias due to less rigorous assessment of applications • A perception that the applicant needs to target their application to the perceived preferences of the panel	• Provide more training and feedback to reviewers • Incentivise strong peer review performance • Provide clearer criteria and scoring guidelines for reviewers • Include more international reviewers • Use of blinded reviews
Burden of the process	• The workload on reviewers, applicants and NHMRC is currently high, affecting the reliability, quality and consistency of assessments • Resourcing could be improved to increase the number of reviewers	• Free up resources from the Assigners Academy • Provide clearer criteria and scoring guidelines for reviewers • Mandate that all NHMRC grant recipients need to assess applications
Determination of which applications are not for further consideration (NFFC)	• Only two people decide if an application is NFFC, which is too small a number of people	• Increase the number of assessors to collect more scores
Relative to opportunity	• The judgements are subjective and open to interpretation • There are confidentiality concerns	• Training for panel Chairs on the policy • A centrally determined and confidential judgement

Contentious issue	Elaboration	Potential solutions
Decision making and external assessments are disconnected	• Spokespeople have a disproportionate influence on outcomes	• All should score and all scores should count. The top x% should be trusted
Process consistency	• There is a lack of clarity in the descriptors of assessment criteria which means they are not applied consistently	• Panel continuity and corporate memory • Improved guidelines
Process duration	• The length of the process causes angst whilst waiting for the funding announcements	• Cut out the top and bottom applications earlier in the process to reduce the process time

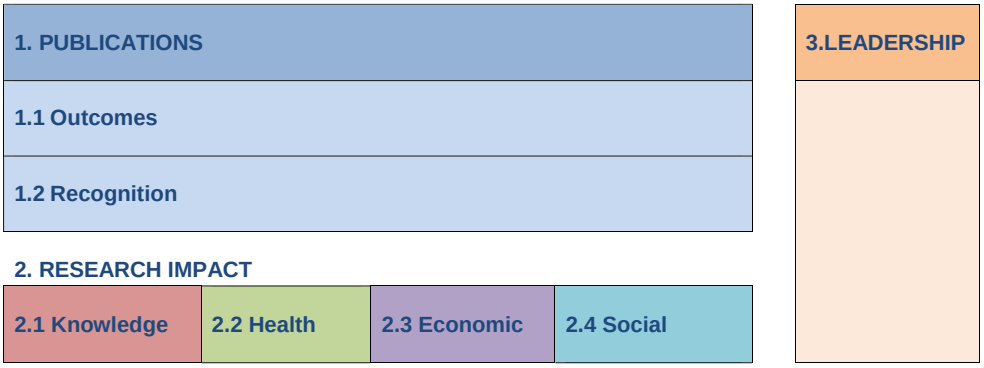
3.4 The emerging Track Record assessment framework

3.4.1 The draft framework presented

Figure 10 presents the draft framework for assessing track record that was presented at the workshop. Each element of the framework was explained in turn, before workshop attendees were asked to consider the following issues in a series of round table discussions:

1. What elements of the framework do you like?
2. What elements of the framework do you not like?
3. What would you change in the framework?

Figure 10: Draft framework for assessing track record



3.4.2 Strengths of the proposed framework

There were five repeated themes of positive feedback:

1. **Focus on leadership** – attendees supported the Framework's focus on leadership, and noted that this brings an element of fairness to the assessment process. They felt it is important to acknowledge that researchers have other responsibilities which can have a positive impact on their experience and capability. Attendees believed the move to assessing leadership over a ten year period provides a better opportunity for researchers to display their leadership experience and potential. They also supported the framework's assessment of leadership relative to career stage and opportunity.
2. **Increased emphasis on research outcomes and impact** – attendees were supportive of the heightened emphasis placed on outcomes and impact, and the use of case studies to demonstrate this. In particular, they supported the framework's consideration of research impact across the proposed four components. However participants did note this may pose a challenge for more basic science research and that NHMRC should consider this further. Participants liked that the framework separates assessment of research impact to academia (i.e. through publications), from the impact outside of the research community. This was viewed as a crucial distinction to make, with participants emphasising the importance of research having consideration of the end user.
3. **Use of case studies to demonstrate impact** – attendees were supportive of the framework's focus on practical experience rather than a theoretical future impact. The case study was viewed as a good opportunity for researchers to demonstrate their ability and capture all the necessary issues. They also liked the flexibility the framework has around case studies. However participants were unclear about what case studies for basic research would look like. As discussed below, some participants suggested the assessment of case studies may require some nuance to be universally applicable.

4. **Focus on introducing objective measures** – attendees were supportive of the focus on outputs that can be objectively measured, but noted that Impact assessments will remain inherently subjective.
5. **Assessment of applications relative to opportunity** – there was strong support for the continued inclusion of relative to opportunity, with workshop participants noting it was important that this works in both directions. There was support for weighting based on career stage.

Additionally, workshop attendees liked that the framework provides structure and explicit assessment across the different areas, and felt that good criteria based assessment will improve the reliability of the scoring, including:

- **The use of publication metrics** – relative to the discipline or the area – including the need for citation metrics based upon field weighted citations and journals.
- **Opportunity for third party endorsement** – to ensure that the impact is recognised.

3.4.3 Issues identified with the proposed framework

Whilst attendees were largely supportive of the draft framework, they expressed some concerns about certain aspects of the framework. In particular, attendees:

- Questioned whether the framework would support a diverse range of researchers, particularly those from non-health and medical research backgrounds.
- Noted that further detail around weighting and threshold criteria is required in order to value activities and outcomes relative to each other.
- Raised concerns that the framework does not recognise collaboration. Attendees believe the framework needs to incorporate a reward system for collaboration. There was mixed views on accounting for position of author. Some participants were concerned that publication metrics often do not take account of author position. However, other emphasised that inclusion of author position could serve as a disincentive for increased collaboration.
- Suggested the peer review process should include an opportunity for rebuttal against assessment dimensions to ensure those with emerging track records are no penalised.
- Noted that involvement in peer review was not included in leadership assessments and there should be more work undertaken to ensure all researchers funded by NHMRC are expected/required to undertake peer review.
- Expressed some concern about attribution, namely properly identifying how much of the research impact is attributable to one researcher, versus other researchers.

3.4.4 Elements of the framework that need further consideration

Table 13 outlines how attendees thought the track record assessment framework could be improved.

Table 13: Elements of the track record assessment framework that could be improved

Framework Element	For consideration
Case study	• The framework should provide good guidance and examples on what a case study should include to ensure the information presented is relevant and comparable. • Reduce the length of the case study from two pages, to ensure the case studies succinctly communicate important information.

Framework Element	For consideration
Publications	• The framework should consider using citation metrics, instead of journal metrics. Participants felt that journal metrics are much less reliable as an indicator of quality than citations. • The Framework should give consideration to the quality of journals - 'Predatory/junk' journals should be excluded if they are older than a certain age. • Would like NHMRC to consider asking for an applicant's 'career best ten papers'.
Research Impact	• **Immediate impact –** Sometimes the time to impact may not be in the ten year period, so NHMRC should consider full career duration when assessing the impact. Impact itself needs to be recent but research itself could have been delivered a while ago. • **Consumer involvement –** important to define who this is, and need to consider the 'end-user'. Is it the consumer of the research or end user or recipient of findings? For some research it could be a policy person. There were mixed opinions on this, and some concern that too much focus on the 'end goal' would have a negative impact on basic science. An expression of this concern was that 'Significant knowledge change is still an impact and should be considered'. • **Health impact –** there is a view that there could be a role for consumer groups to be involved in assessment of impact.
Leadership	• Consider leadership over the last ten years FTE (where a researcher has not been working full-time during that period), rather than an elapsed ten year period. • The framework should not set an expectation that elements of leadership are assessed equally. Some areas may be prioritised for individual applications. • The framework needs to carefully define leadership expectations across career levels.
Weighting	• Further consideration of how categories are weighted is required. Generally, attendees felt objective fields should receive a higher weighting than subjective fields. However participants differed in their views about precise weightings across the categories. Some participants suggested Publications, Research Impact and Leadership should be equally weighted, whilst others suggested that Publications or Research Impact should receive a higher weighting. • Participants suggested that the weightings could be varied based upon an individuals' opportunity e.g. reducing the weighting placed on leadership for early career researchers. • Participants suggested that weightings could be varied according to research type or scheme type.

In addition to the considerations outlined in Table 13, workshop participants were open to the idea of testing the framework, and refining it as required. For example, doing a pilot run to assess the reproducibility of the framework and how the new criteria work compared to the Fellowship scheme.

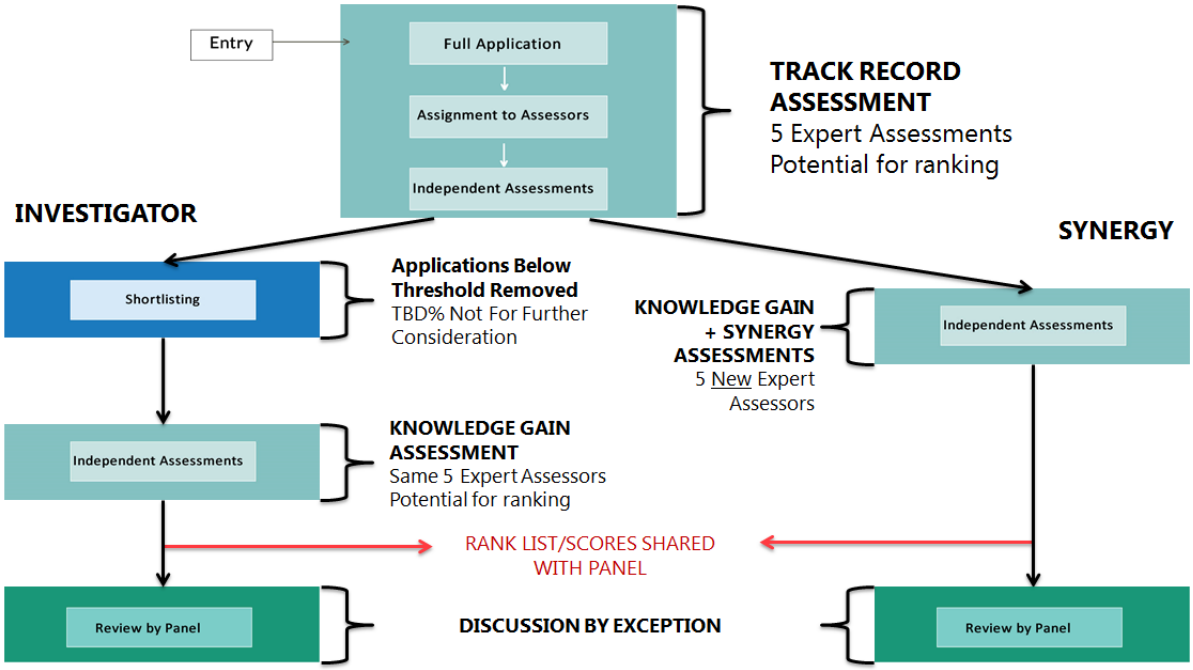
Attendees also commented that the framework needs to be agile with allowance for refinement and regular testing to ensure it remains relevant.

3.5 A possible peer review process for Investigator and Synergy Grants

3.5.1 The draft process presented

Figure 11 is a possible peer review process for assessing Investigator and Synergy Grants that was presented at the workshop.

Figure 11: Draft peer review process for investigator and synergy grants



The draft process has been designed to:

- improve the objectivity and transparency of the track record assessment through development of a consistent framework
- ensure that there is appropriate expertise in the peer review assessment through increasing the number of independent assessors to five
- minimise the burden on assessors through shortlisting in the Investigator Grants process and have panels discuss ranked applications 'by exception' in both Investigator and Synergy Grants
- ensure appropriate expertise in assessment of Synergy Grants through additional expert assessors used to assess the Knowledge Gain and Synergy criteria to.

Workshop attendees were asked to consider the following questions in a series of round table discussions:

1. What do you like about the process?
2. What do you not like about the process?
3. What would you change and why?

3.5.2 Strengths of the proposed process

Workshop attendees were broadly supportive of the proposed processes for both Investigator Grants and Synergy Grants. In particular, attendees provided positive feedback on the following four themes:

1. **Number of assessments:** Five independent assessors evaluating each application was considered a good number for maintaining internal consistency, whilst ensuring the application could be assessed thoroughly by individuals with expertise in different areas. It was felt that this means applications are more likely to get a fair and unbiased assessment.
2. **Panel discussion by exception:** This will reduce the burden on the research community.
3. **Removing the applicant response:** Attendees were comfortable removing the applicant response as they felt having five assessors would increase the likelihood of a fair assessment. However, they did note there must be transparency and quality in the assessment process to justify removing the applicant response.
4. **Shortlisting Investigator Grants applications:** Attendees agreed that there is a need to respond to applicants in a timely manner to enable them to apply for other grants if necessary, so shortlisting and communicating these decisions quickly was supported.

3.5.3 Issues identified with the proposed process

Whilst attendees were largely supportive of the draft process in principle, they expressed some concerns about how it would operate in practice. In particular, attendees:

- Believed that there will be challenges finding five assessors with adequate expertise – unless assessors are released from the Assigners Academy.
- Felt there is a possibility the independent assessments may result in discordant scores if assessors have more expertise in assessing certain elements of the proposal, or if the proposal is for multi-disciplinary research. In allocating the assessors, participants felt it important to ensure they are able to cover a range of proposal elements, from content to methodology and social impact.
- Were unsure that having each assessor assess five discrete applications will be enough for an individual assessor to benchmark their scores. It was suggested that the number should be higher than five.

Whilst attendees were supportive of individual track record assessments of Investigator Grants, they felt they were less appropriate for the Synergy Grants. There were several concerns raised:

- The importance of the emphasis of Synergy Grants is how an important problem will be addressed. Participants felt track record may shift the emphasis towards forming a strong team, and detract from the focus on solving the problem.
- Assessing each team member's track record independently may result in wasted effort writing a full proposal that may not be read.
- It may mean the focus is on forming teams of researchers with independently strong track records rather than on forming the team with the most appropriate balance of skills and experience needed for the research. Participants suggested this may disadvantage early-mid career researchers, or people who have worked in industry - despite their potential to make a strong contribution to the team.
- A lack of emphasis in the Synergy Grant assessment on the diversity of the team and its ability to work together to conduct the research.

3.5.4 Elements of the process that need further consideration

Table 14 outlines how attendees thought the process could be improved.

Table 14: Elements of the Investigator and Synergy Grant process that could be improved

Framework Element	For consideration
Assessors	• Ensure assessors assess enough grants to apply the scoring criteria consistently and have an appreciation for the range of applications. • Establish bounds for outlying scores to improve scoring consistency. For example, if an assessor is frequently 30 per cent away from the mean score, they should be identified and action taken to mitigate future inconsistencies. • Select a diverse range of assessors for each application, with diversity measured across gender, country of origin and expertise. Participants did recognise the difficulty in selecting a diverse range of assessors who also have relevant research experience. • Consider requiring that one of the five assessors must be early-mid career.

Track Record	• Separate the Track Record assessment for Synergy Grants from the complete application to reduce the burden on applicants. Participants did however note there is a possibility that this could increase the number of applications received.
	• For Synergy Grants:
	  • Apply a heavier weighting to Knowledge Gain over Track Record for Synergy Grants.
	  • Assess Track Record relevant to the project, as well as relative to opportunity.

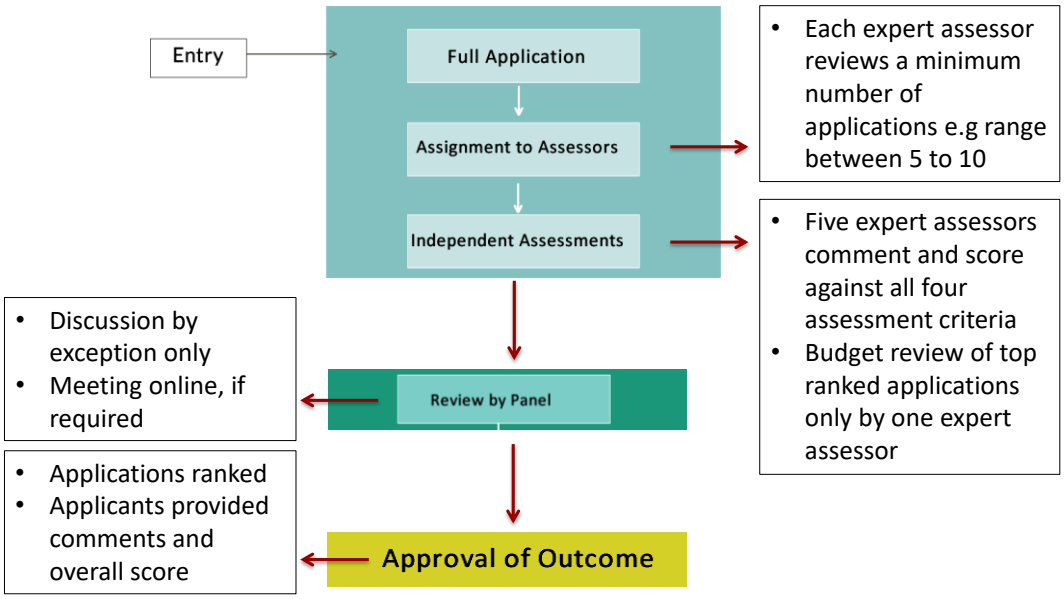
Feedback	Provide quantitative feedback to applicants identifying where their application ranked relative to others.
Synergy Grant team composition	Introduce diversity quotas for Synergy Grants teams. There was consensus amongst participants that the best way to ensure early-mid career researchers are included in teams is to make this a compositional requirement.
Criteria	For Synergy Grants, include an element in the application for applicants to demonstrate how their team will work together to solve the problem.

3.6 The draft peer review process for Ideas Grants

3.6.1 The draft process presented

Figure 12 below presents the draft peer review process for assessing Ideas Grants that was presented at the workshop.

Figure 12: Draft peer review process for Ideas Grants



The process presented is intended to support the goals of the Ideas Grants to support innovative research projects. It is proposed the number of assessors will be increased to five or six to provide a wider range of expertise and increase the consistency of assessment.

Shortlisting will be introduced to remove the burden on panel assessors, alongside the review by panel by exception only, with technology used to ensure there is greater capacity for participation in the panel discussions.

It is proposed that applicants will be provided with feedback, scores and rank to support the refinement of future applications.

Workshop attendees were asked to consider the following questions in a series of round table discussions:

1. What do you like about the process?
2. What do you not like about the process?
3. What would you change and why?

3.6.2 Strengths of the proposed process

There was broad support for the proposed peer review model, with the majority of workshop attendees indicating they believed the model was heading in the right direction. Overall, attendees believed the process would be more streamlined and rigorous, and there was support for the core elements of the process. In particular, attendees repeated positive feedback on the following five themes:

1. **Number of assessments:** Five independent assessors evaluating each application was considered to be enough to ensure there was a reasonable and fair assessment.

2. **Ranking of applications:** This will bring greater nuance to the decisions of which applications to fund where there are similar scores.
3. **Panel discussion by exception:** This will reduce the burden on the research community.
4. **The intent to utilise video conferencing for the panel:** This will make panels more inclusive as it will not require travel to Canberra for multiple consecutive days. There are some caveats related to panels (see the next section).
5. **Providing feedback to the participants:** This is something that the research community has wanted for a long time and it will be especially relevant for Ideas Grants as some of the applications will benefit from feedback to refine and/or focus their idea.

3.6.3 Issues identified on the proposed process

Whilst attendees were largely supportive of the draft process in principle, they expressed some concerns about how it would operate in practice.

The biggest concern expressed by many of the attendees was the potential volume of applications that the Ideas Grant scheme will attract – and the potential impact on the process, the burden on assessors and the number of discrete panels that will need to be formed. It was felt this was going to be a particular issue in the first few years of the new grant program. NHMRC has undertaken some analyses of the process and the expected volume of work, but this is based upon an assumption that the number of applications are broadly in line with the current volume of Project grant applications. The majority view of participants was that this is an underestimate. The NHMRC perspective is that the Ideas Grants process has been designed to be highly streamlined so that there could be the potential in the future for two application rounds per year. To manage potential pressures due to potential high application number, a second round for applications each year may not be immediately implemented. This may be reconsidered with a clearer understanding of applicant volume and after ICT systems for assigning assessors have been implemented.

Other concerns highlighted included:

- Having only one assessor to assess budget. Participants felt that although budgeting has improved it would be necessary for at least two people to assess the budget in order to ensure there is a fair assessment.
- Participants were concerned that it may not always be possible to find five relevant experts to evaluate an application and that the process of assigning assessors may be complicated by the volume of applications.
- They felt that assessment of five applications per assessor was too few, and that each assessor should assess at least 10 applications. This was considered important for ensuring that assessment criteria are applied in a consistent manner.
- Removing the rebuttal mechanism – it is only possible to do so if you can be confident that the assessment has been done well. However some workshop participants indicated this was not a concern as researchers can resubmit proposals.

3.6.4 Elements of the process that need further consideration

The attendees were in general supportive of the proposed process and much of the discussion was on the issues outlined above (notably process volume).

Table 15 outlines how attendees thought the process could be improved.

Table 15: Elements of the Ideas Grant process that could be improved

Framework Element	For consideration
Defining panel use 'by exception'	• Develop more detail on what would be defined as an exception and that would result in an application going to a panel. This is seen as important because the number of panels would be too difficult to manage if lots of applications are defined as exceptions.
Phased implementation	• Conduct a phased implementation of the new arrangements. This would enable elements of the framework to be tested, such as the removal of the rebuttal process and the increased number of assessments per application. • This would also enable a randomised trial for blinded reviews to be conducted to assess the impact.
Balancing innovation and feasibility	• Ensure the scoring criteria encourage researchers to balance innovative thinking with consideration of feasibility.
Limiting ability to re-submit proposals	• Limit the number of times an applicant can submit the same idea, to reduce the number of applications. • Alternatively, require applicants to declare they have submitted an idea previously and what has changed since the last application.

3.7 Final reflection on the proposed changes to peer review

In the final plenary session the attendees were asked to reflect whether the proposals addressed the key factors and contentious issues raised earlier in the workshop.

The general consensus was that all of the proposals were heading in the right direction, but the implementation and application of the processes will ultimately define the success of the processes.

The attendees were asked to reflect on the workshop and provide any final comments. The following were the key themes from this final discussion:

- **Iterative peer review and near misses:** There is support for iterative peer review, retaining 'corporate memory' on panels, and supporting applicants who are 'near-misses' in reapplying. Having recall of past panel discussions is considered especially important as the panels would now only discuss applications by exception – which will include a focus on the 'near-misses'. It was suggested that at least two panel members should be retained for the next application round. It was also suggested that applicants who reapply have to explain what has changed in their application and how this addresses the feedback they have previously received.
- **Blinded reviews:** There was support for blinded reviews in principle, but with a significant number of attendees sceptical that this is practical in Australia given the size of the research community. It was suggested that some trials could be conducted into blinded reviews to determine if they made a substantive difference.
- **Development of assessors:** Feedback to reviewers on how they compare to others in their peer group was considered important. NHMRC should consider how to manage reviewers who are consistent outliers. Removing them from the pool of assessors was not seen as the appropriate course of action as 'reluctant assessors' may see this as an opportunity to 'opt out' of being an assessor.

- **Increasing the pool of assessors:** There was some discussion about how the pool of assessors could be increased to enable the increase of both processes to involve five assessors per application. The two suggestions that were widely supported in the workshop were:
    - Scale back or remove the Assigners Academy and free up these resources to become independent assessors.
    - Mandate that any researcher who receives an NHMRC grant is required to assess applications for the duration of the active grant.

4 Part C: Consultation themes for ongoing consideration by NHMRC

The possile peer review processes and emerging track record assessment framework were developed by NHMRC to reflect many of the key themes from the consultation. The feedback from the significant majority of attendees at the workshop acknowledged this and was supportive of the general direction of progress in the draft models being developed.

Much of the feedback in both the public consultation and the targeted consultation related to how the peer review model is resourced, applied and supported. NHMRC will continue to consider the emerging processes, policies and frameworks are applied in practice. As commented by multiple people in the workshop, the detail that supports the proposed peer review model will be critical.

Seven key 'elements for success' are identified based on the key themes throughout the consultation process. These are summarised below for ongoing consideration by NHMRC as they prepare to launch the new grant program and associated peer review model.[10] These are not likely to be addressed solely by processes and frameworks but will need to be key considerations for NHMRC.

- **Explicit guidance and definitions:** The implementation of peer review models needs to be supported by clear guidance, definitions and explicit weightings for each of the parameters used. This guidance should include explicit guidance on how preliminary data is to be used in preparing and assessing applications.
- **An increased pool of expert assessors:** There is support for increasing the number of external assessments, but concern that this will place too great a burden on the current pool of assessors. With much feedback pointing to the need to have the right expertise assessing applications this means that the pool of expert assessors will need to be grown. There are options for this, including revisiting the conflicts of interest policy, releasing experts from the Assigners Academy, and mandating all NHMRC funded researchers to be assessors.
- **Ongoing support to develop the capability of assessors:** NHMRC stated on multiple occasions during the consultation that it does not have the resources to train and develop assessors or provide feedback on assessor/panel performance. It is a reasonable hypothesis that the universities and research institutes have some responsibility for capability development. NHMRC could consider how it can practically support such institutions in developing the capability of assessors across the research community.
- **Avoiding discrimination and enabling diversity:** The development of guidance for how applications are assessed will need to ensure that specific types of research are not inadvertently discriminated through the calibration of the main parameters. The guidance and policies also need to ensure that the outcomes of the assessments appropriately reflect the diversity of the research community – but avoid discriminating for or against specific diversity factors (unless there is an explicitly stated target as there are for Aboriginal and Torres Strait Islander researchers).
- **Being clear on what constitutes an exception:** The draft peer review model has been designed to reduce burden whilst being fair to those that apply for grants. NHMRC needs to establish and communicate clear parameters as to what it means by 'exception' within the processes and why these exceptions will be taken to panel for review. This clarity will be needed both to avoid perceptions of

[10] For the purpose of this analysis the phrase 'peer review model' refers to the peer review processes for all three new schemes, the track record assessment framework and any other frameworks that will be utilised during the peer review of applications.

bias and to ensure that the new processes do not increase burden - the exact opposite to the outcomes that NHMRC are seeking to achieve.

- **Support near-miss applications:** NHMRC should seek to refine the peer review model in the mid-term to identify and support applications that narrowly miss out on funding. Taking into account the consistent feedback from the consultation, providing feedback to applicants in these cases and having a defined process for reapplication will be supported by the research community.
- **Monitor and refine the peer review model in the short to mid-term:** It is expected that the implementation of the new peer review model will have some teething issues. It has already been acknowledged that the full process for assessing Ideas Grants will be dependent on implementing a new ICT capability to select the right assessors for each individual grant. NHMRC should closely monitor the performance of the peer review model over the next two to three years during the transition to the new grant program, and be prepared to refine processes and policies as and when necessary. It is also important that NHMRC continues to communicate regularly with the research community throughout this transition.

Appendix A: NHMRC consultation paper

Australian Government
National Health and Medical Research Council

NHMRC

PEER REVIEW CONSULTATION PAPER

September 2017

WORKING TO BUILD A HEALTHY AUSTRALIA

Peer Review Consultation Paper

Part A – Background

The National Health and Medical Research Council (NHMRC) is the Australian Government's primary health and medical research funding agency. With NHMRC support, Australia undertakes outstanding health and medical research which has contributed to significant improvements in individual and population health.

During 2016, NHMRC reviewed the structure of its research grant program with the guidance of an expert advisory group and the advice of NHMRC's Council and Principal Committees. Following extensive public and targeted consultation, NHMRC's new grant program was announced by the Minister for Health and the Minister for Sport, the Hon. Greg Hunt MP, on 25 May 2017.

The new grant program aims to:

- encourage greater creativity and innovation in research
- provide opportunities for talented researchers at all career stages to contribute to the improvement of human health, and
- minimise the burden on researchers of application and peer review so that researchers can spend more time producing high quality research.

Purpose of paper

The structural review focused on NHMRC's grant program and did not consider the peer review processes that support the program's strategic aims, which were explicitly out of scope.

NHMRC now seeks feedback from the health and medical research community on designing peer review processes for the new grant program.

Overview of the New Grant Program

NHMRC's new grant program will comprise four funding streams, as summarised below:

Grant type	Investigator Grants	Synergy Grants	Ideas Grants	Strategic and Leveraging Grants
Purpose	To support the research programs of outstanding investigators at all career stages	To support outstanding multidisciplinary teams of investigators to work together to answer major questions that cannot be answered by a single investigator.	To support focussed innovative research projects addressing a specific question	To support research that addresses identified national needs
Duration	5 years	5 years	Up to 5 years	Varies with scheme

1

Number of Chief Investigators	1	4-10	1-10	Varies with scheme
Funding	Research support package (RSP) plus optional salary support	Grant of a set budget ($5 million)	Based on the requested budget for research support	Varies with scheme
Assessment Criteria	Track Record Knowledge Gain	Track Record Knowledge Gain Synergy (team diversity and collaboration)	Innovation & Creativity Significance Knowledge Gain Feasibility	Varies with scheme
Indicative MREA allocation	About 40%	About 5%	About 25%	About 30%

Further information on the structural review and NHMRC's new grant program is available at http://www.nhmrc.gov.au/restructure.

NHMRC's Principles of Peer Review

The *Australian Code for the Responsible Conduct of Research* describes peer review as the impartial and independent assessment of research by others working in the same or a related field. NHMRC will continue to rely on peer review when assessing applications for funding to the new grant program, based on NHMRC's *Principles of Peer Review*, including fairness, transparency and independence.

2

Part B – Respondent Details

Fields to be completed:

Personal Details

- First Name*
- Last Name*
- Email*
- Phone*
- Fax
- Street Address
- Post Code
- State

Views – An organisation

- Organisation Name*
- Please identify the best term to describe the Organisation [Drop Down]
- Administering Institutions [Drop Down]

Views – An individual

- Gender (optional) [Drop Down]
- Please identify the best term to describe the Organisation [Drop Down]
- Administering Institutions* [Drop Down]
- Broad Research Area* [Drop Down]
- Individual Background
- Are you of Aboriginal or Torres Strait Islander descent?:*
    - No
    - Yes, Aboriginal
    - Yes, Torres Strait Islander

(For person of both Aboriginal and Torres Strait Islander descent, mark both 'Yes' boxes.)

- Respondent's NHMRC role(s) [Select all that apply]
    - Applicant
    - Peer reviewer
    - Community observer
    - Consumer
    - Research Administration Officer
    - Other NHMRC role (specify)

* Required Fields

3

Part C – Peer Review Parameters

Applications to the new grant program will be assessed against clearly defined, published parameters (assessment criteria). The six parameters, below, will support the new grant program's scheme-specific objectives.

NHMRC seeks your suggestions on the types of information and evidence that should guide assessment of applications against the parameters. In responding, you are encouraged to make suggestions from your experience, area of expertise and from the Broad Research Area you identified above.

Responses for each assessment parameter are limited to a maximum of 100 words.

1. Track Record Assessment – An individual's research and impact record

The following elements assist reviewers to assess track record under current NHMRC peer review arrangements:

- Research outputs and outcomes relevant to the proposed fields of research
- Contribution to discipline area
- Other research-related achievements
- Mentoring environment to support junior/emerging researchers

Your response could refer to these and/or to other elements that you consider are important in assessing 'track record'.

2. Knowledge Gain – Quality of proposed research

The quality of the proposed research, incorporating theoretical concepts, hypothesis, research design, robustness and feasibility, assist reviewers to assess 'scientific quality' under current NHMRC peer review arrangements. Your response could refer to these and/or to other elements that you consider are important in assessing 'knowledge gain'.

3. Innovation and creativity – Extent of innovation and of creativity of the proposed research

In NHMRC's current Project Grant scheme, assessment of innovation is based on the extent to which the proposed research seeks to shift current paradigms and introduce or advance concepts, practices or approaches. Your response could refer to these and/or to other elements that you consider are important in assessing 'innovation and creativity'.

4

4. **Significance – Potential of research to advance knowledge and have an impact in the research area**

In NHMRC's current Project Grant scheme, peer reviewers consider the extent to which the research findings will be of great importance in the research area by substantially advancing knowledge, clinical and/or public health applications, policy development or change in the field. Your response could refer to these and/or to other elements that you consider are important in assessing 'significance'.

5. **Synergy – Team diversity and collaboration**

Assessment of Synergy Grant applications will emphasise the value of multidisciplinary and diverse teams whose skills and perspectives will enable complex research questions to be addressed. What elements should be considered in assessing an application against a "Synergy" assessment criterion?

6. **Feasibility – Appropriate research design, research skills, experience and access to necessary facilities**

NHMRC seeks your input on an appropriate assessment of feasibility that would not have an over-reliance on the team's track record. Your response could refer to existing grant schemes and/or to other elements that you consider are important in assessing 'feasibility'.

5

NHMRC's Relative to Opportunity and Career Disruption policies

NHMRC's 'Relative to Opportunity' and 'Career Disruption' policies are essential to the rigorous and equitable assessment of applicant track records. Ensuring a robust framework for these policies will be particularly important in the new grant program, given the track-record focus of Investigator and Synergy Grants.

Responses are limited to a maximum of 100 words.

1. **With respect to peer review, what are the strengths of the current Relative to Opportunity policy?**

2. **With respect to peer review, what could be improved in the current Relative to Opportunity policy?**

3. **With respect to peer review, what are the strengths of the current Career Disruption policy?**

4. **With respect to peer review, what could be improved in the current Career Disruption policy?**

6

Part D – Peer Review Processes

NHMRC is seeking input on the key processes of peer review. In providing your responses, consider both the value of these processes in achieving high quality peer review and the burden on research applicants and peer reviewers.

Introduction of the new grant program offers an opportunity to design peer review processes to meet the following long-term goals:

- support the objectives of each of the grant schemes
- streamline and harmonise peer review processes to reduce duplication of activities across schemes (e.g. by undertaking a single track record assessment per chief investigator (CI) per year/round for use in all schemes to which the CI applies)
- run shorter review cycles which may enable more than one application round per year (e.g. by reducing the number of steps in the peer review process)
- obtain a larger number of independent assessments to improve rigour and allow panels to focus on those applications requiring discussion
- reduce the time required for panel meetings and discussions, to provide members with more flexibility in managing their time commitment.

NHMRC currently uses a variety of peer review processes across its schemes. The processes of peer review can be divided into several modules (e.g. *Shortlisting*, *Independent Assessment* and *Review by Panel*), which are illustrated in the flow chart below.

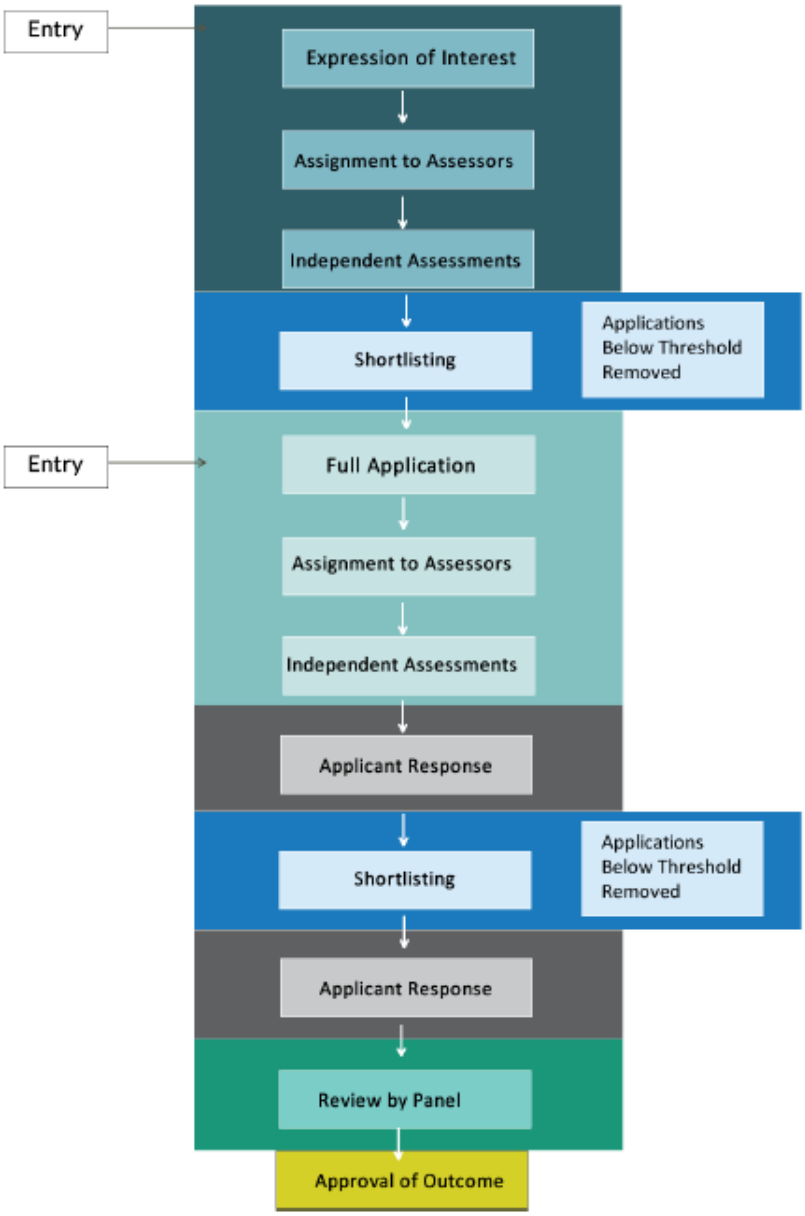
The overall peer review process is highly integrated and changes in one module can affect the inputs or combinations of other modules and the time required to complete the process. For example, including an *Applicant Response* module adds a significant period of time to the peer review process and imposes additional burden on both applicants and assessors. Applicant responses have been removed in some schemes, shortening the peer review process. However, their removal has been offset by including more independent assessors in the *Independent Assessment* module. This increases the rigour of the assessment and mitigates the need to invite applicants to prepare an *Applicant Response*.

NHMRC seeks your suggestions on which modules would be required to ensure the rigorous review of Investigator, Synergy and Ideas Grant applications.

NHMRC's peer review modules and generalised peer review process

Peer review modules (e.g. *Shortlisting*, *Independent Assessment* and *Review by Panel*) are the building blocks of the peer review process. These modules are used in different combinations in different funding schemes to achieve the scheme's objectives.

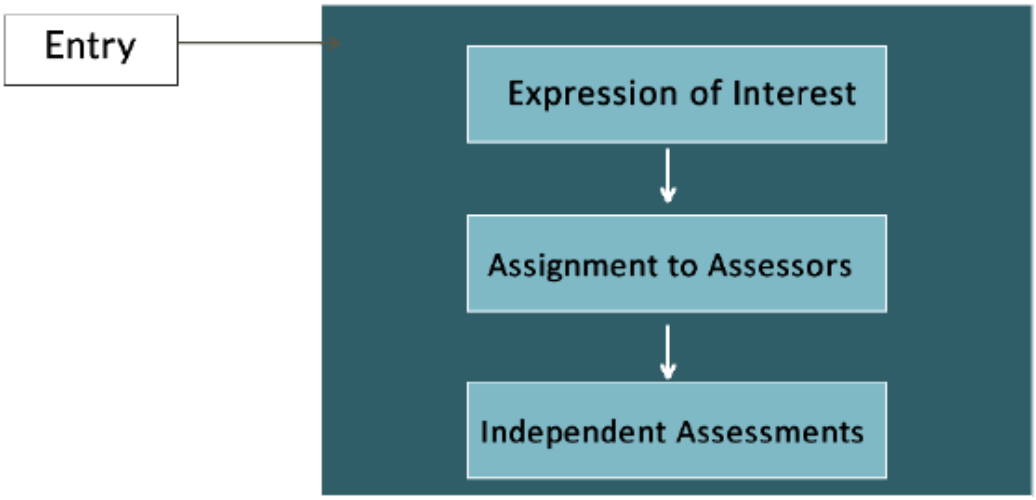
The following diagram shows each of the modules in a sequence. It represents a generic peer review process incorporating all the commonly discussed or used modules. The peer review process for NHMRC's current Project Grant scheme starts at the second entry point and takes approximately 6 months for 3,500 applications.



8

Expression of Interest

NHMRC has received feedback that some applicants would favour using an Expression of Interest as the initial module of the peer review process for research grant schemes (this would not be appropriate for the Investigator Grants and Synergy Grants schemes). This would reduce the initial burden on all applicants. However, the total burden might be increased for applicants invited to submit a full application (Expression of Interest + Full Application). The introduction of an *Expression of Interest* module would extend the time required for the total peer review process.



What do you think about using an Expression of Interest module in peer review of Ideas Grants in the new grant program? In providing your answer, questions you may wish to consider include:

- *What types of information should be included in the Expression of Interest?*
- *How much information is required to review an Expression of Interest?*
- *How many assessors should review an Expression of Interest?*
- *What are the advantages and disadvantages of involving consumers during the assessment of an Expression of Interest module?*
- *How could an Expression of Interest module be used to conduct 'blinded' peer review (in which applicants are de-identified)?*
- *How much time would applicants need to prepare a full application (e.g. if a full application were of similar length to the current 9-page Project Grant application), after Expression of Interest outcomes are announced?*

Responses are limited to a maximum of 300 words.

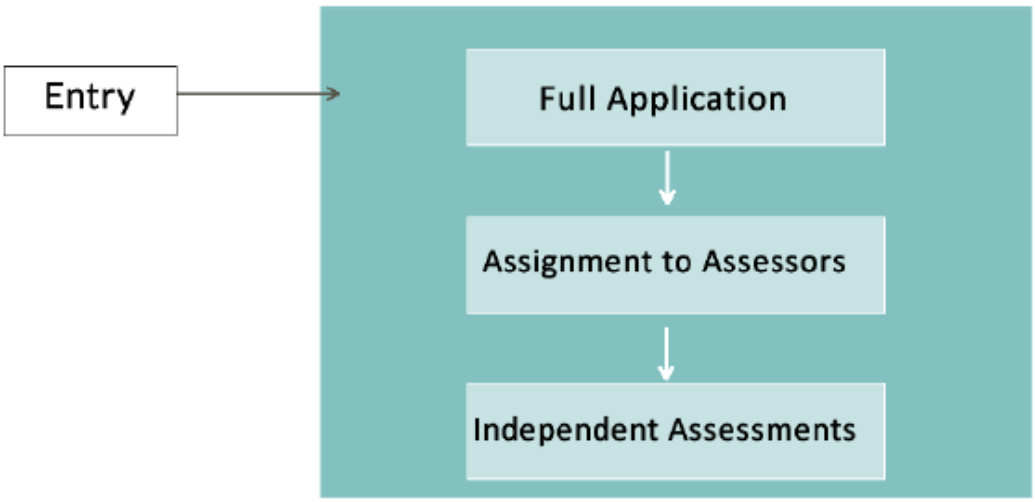
9

Independent Assessments based on Full Application

Independent Assessments are provided by assessors without discussing the application or conferring with other assessors. A *Full Application* includes all the information required to enable review against a grant scheme's assessment criteria. For example, for Investigator Grants this would include all information required to assess the individual's track record, relative to opportunity, and the knowledge gain from the research.

There are two key components to the application assessment module: (i) the assignment of applications to appropriate assessors and (ii) the provision of independent assessments by these assessors.

The approach used for each of these components has a direct impact on the burden for peer reviewers and, consequently, the duration of the peer review process.



What do you think are the important features of Independent Assessments? In providing your answer, questions you may wish to consider include:

- *What is the minimum number of independent assessments that would be required to peer review a Full Application effectively?*
- *What types of expertise are required to complete Independent Assessment (e.g. disease-specific; broad research area) and does this vary by scheme?*
- *If the Independent Assessment was the only review process (no second phase), how would this affect the number and expertise required for Independent Assessments?*
- *How could an Independent Assessment module be used to conduct 'blinded' peer review (in which applicants are de-identified)?*

Responses are limited to a maximum of 300 words.

10

Shortlisting

NHMRC uses a variety of approaches to reduce the burden of peer review on assessors. Most commonly, this involves removing the least competitive applications from further review based on the outcomes of the first phase of the peer review process (e.g. the 'Not for Further Consideration' – NFFC – process). Introducing a second phase (that may include *Applicant Response* and *Review by Panel* modules) may increase the burden on applicants and peer reviewers.

Shortlisting identifies the applications above a threshold (e.g. top 50% of applications) deemed appropriate for further consideration. What do you think are the important features of Shortlisting? In providing your answer, you may wish to consider:

- ***the most appropriate threshold, given potential effects on applicants and peer reviewers.***

Responses are limited to a maximum of 100 words.

11

Applicant Response

NHMRC currently has two main approaches for providing applicants with an opportunity to address issues raised by their assessors: (i) written rebuttal before shortlisting and (ii) interview by a peer review panel after shortlisting.

NHMRC also uses peer review models that do not include an *Applicant response* module. However, to ensure the rigorous assessment of applications in such models, the number of *Independent Assessments* is increased.

Using higher numbers of *Independent Assessments* can increase the burden on peer reviewers and the use of an *Applicant response* significantly increases the burden on both reviewers and applicants. It also increases the duration of the overall peer review process.

Applicant Response

What do you think are the important features of Applicant Responses? In providing your answer, issues you may wish to consider are:

- *application numbers for Investigator Grants, Synergy Grants and Ideas Grants may equal or exceed those for Fellowships, Program Grants and Project Grants during the initial transition to the new grant program*
- *the advantages and disadvantages of an Applicant Response to both applicants and peer reviewers*
- *whether an Applicant Response would be required if there were more Independent Assessments and/or a Panel Review module were included in the peer review process*

Responses are limited to a maximum of 300 words.

12

Review by Panel

All of NHMRC's current grant schemes use *Review by Panel* at least once during the peer review process. *Review by Panel* provides an opportunity for assessors to discuss the strengths and weaknesses of an application and differs from *Independent Assessment*.

Panel meeting styles can be virtual (e.g. by teleconference, videoconference or other ICT) or face-to-face. The review panel may consider, in detail, all applications that progress to this phase, or discuss applications by exception (i.e. only those flagged for discussion). The format of panel meetings, and whether applications are discussed by exception, affect the burden on peer reviewers, the duration of the peer review process and whether all potential reviewers (e.g. those with other professional or personal commitments) are able to participate.

Review by Panel

What do you think are the important features of *Review by Panel*? In providing your answer, questions you may wish to consider include:

- ***Which applications should proceed to Review by Panel, e.g. all shortlisted applications or applications by exception?***
- ***What are the advantages and disadvantages of involving consumers during the review of an application by panel?***
- ***What impact would the inclusion of Independent Assessments and/or Applicant Response Modules have on the need for Review by Panel?***

Responses are limited to a maximum of 300 words.

13

Peer review in NHMRC's new grant program

The new grant program includes three new schemes:

- **Investigator Grants: To support the research programs of outstanding investigators at all career stages**
- **Synergy Grants: To support outstanding multidisciplinary teams of investigators to work together to answer major questions that cannot be answered by a single investigator.**
- **Ideas Grants: To support focussed innovative research projects addressing a specific question**

Describe a peer review process that would best support assessment of Investigator Grant applications (considering potential burden on applicants and peer reviewers).
Responses are limited to a maximum of 300 words.

Describe a peer review process that would best support assessment of Synergy Grant applications (considering potential burden on applicants and peer reviewers).
Responses are limited to a maximum of 300 words.

Describe a peer review process that would best support assessment of Ideas Grant applications (considering potential burden on applicants and peer reviewers).
Responses are limited to a maximum of 300 words.

14

Appendix B: Analysis approach

Analysis was informed by information from the key sources. These were:

- Attendance at fora held in six major capital cities – Sydney, Adelaide, Melbourne, Canberra, Perth and Brisbane
- Written submissions by organisations and individuals responding to the NHMRC Peer Review Consultation Paper.

This section provides a brief overview of the thematic analysis approach for the written submission and consultation sessions.

Public fora

Attendance at the public fora and identification of key themes has also informed the key themes outlined in this document. Two observers from Nous attended each of the six public fora held as part of the consultation process.

The notes taken at each of the fora were analysed to identify the emerging and consistent themes. In addition to these themes, key quotes, potential implications for the peer review process and suggestions raised on the structure of the peer review process were captured and reported to NHMRC after each forum.

The six key themes emerged:

- Trade-offs in the peer review model
- Assessment consistency
- The development of assessors and applications
- The types of research that should be funded
- The quality of peer review assessments
- The fairness of the peer review approach

These consultation themes have informed the more detailed analysis of the written submissions that has underpinned this report.

Written submissions

Written submissions were analysed through a four stage process. This is outlined below.

Stage 1: Pre-work – focusing on cleaning the submissions data received and undertaking analysis of survey responses by demographic, personal and organisational variables.

Stage 2: Thematic analysis – identification of key themes for each topic or question in the Consultation Paper and coding individual responses against key themes. In parallel, capture of suggestions for the model and proposed language amendments.

Stage 3: Stakeholder analysis – where there are clear patterns, themes were segmented by stakeholder type – including by organisation or by individual, or by individual respondent attributes (e.g. male vs female).

Stage 4: Refinement and alignment – to align findings with key themes that emerged from the six public fora and to refine the key themes presented following a holistic (top-down) review of all submissions. This step included the addition of key quotes to the text to illustrate key messages.

Principles for thematic analysis

The findings presented in this report are the key themes from the consultation. This means that the information presented is that which was repeated consistently in the public fora and on multiple occasions in the written submissions. This does not mean the theme is presented as a conclusive finding. Instead the presentation of themes represents a weight of opinion from those within the research community who engaged with the consultation exercise.

Several principles have informed this approach:

- initial themes identified through the six public fora (see above) have informed the identification of themes in the analysis of written submissions
- key themes have been identified based on volume – with key themes being based on at least ten organisational or written submissions discussing a key theme
- where there are differences in view on a key theme these have been acknowledged
- in instances where there are clear differences between different stakeholder types this has been identified
- supporting quantitative information has been presented where it is valuable, such as the proportion of submissions that identified a key theme and the proportion of positive or negative responses to key topics.

Limitations of the analysis

There are three key limitations in the findings and themes presented in this consultation report. These are outlined in Table 16.

Table 16: Limitations of analysis approach used

Theme	Limitation
Identification of speakers and attribution	The format of the public fora meant that that it was not possible to consistently or accurately identified who asked questions or made comments during the plenenary discussion. For this reason no analysis has been undertaken on who asked questions during the fora.
Quantitative assessment of responses	The written submissions responded to a set of specific consultation questions. Qualitative responses to each of the questions were requested. Although the phrasing of the questions has enabled some quantitative analysis on strengths and weaknesses, the questions do not enable a definitive conclusion on the support (or otherwise) for specific elements of the process.
Representative sample	113 written responses were received. This volume of responses enables an analysis of key themes, but with an estimated 23,000 medical researchers practicing in Australia[11] the analysis presented in this report cannot be considered as representative of the views of the research community as a whole due to the sample size. This analysis therefore does not reflect the views of all stakeholders in the health and medical research sector.

[11] https://aamri.org.au/health-medical-research/fast-facts-on-medical-research/

Appendix C: List of submissions received

During the submissions process for the Peer Review Consultation Process, NHMRC received 113 written submissions. 58 of these were received on behalf of organisations. Organisations that agreed to publish their submissions are presented in Table 17. The remainder of the responses were received on behalf of individuals. These were de-identified before being passed to Nous for analysis.

Table 17: List of organisational submissions

Response ID	Organisation name
21	Council of Academic Public Health Institutions Australasia
25	Monash University, Biochemistry and Molecular Biology
27	Professional Scientists Australia
38	Australian Regenerative Medicine Institute
42	QIMR Berghofer Medical Research Institute
45	Association of Australian Medical Research Institutes
48	Australian Bioinformatics and Computational Biology Society
49	University of Tasmania
51	Department of Biochemistry and MB, U of Melbourne
57	Murdoch Children's Research Institute
59	Monash Biomedicine Discovery Institute
61	UNSW Sydney (Signed off by Nicholas Fisk & Anthony Kelleher)
62	Neuroscience Research Australia
68	The University of Sydney
71	Australian Academy of Health and Medical Sciences
77	Macquarie University
81	Queensland University of Technology
83	Australian Society for Medical Research
85	Research Australia
86	Griffith University

Response ID	Organisation name
87	University of Western Australia
89	University of Melbourne
95	National Mental Health Commission
97	ASB, ASBMB, AuPS, ANZSCDB, ACvA, ISHR, SFRRA
100	WA Consumer and Community Health Research Network
101	Mater Research Institute - The University of Queensland
103	Australia and New Zealand Bone and Mineral Society
109	Public Health Association of Australia
111	UQ Research and Innovation Portfolio
112	ANS Equity diversity committee, ACNS, ARC CoE IBFGEDC, AWINS
113	Monash Research Office
114	The University of Adelaide
115	Early- and Mid-Career Researcher Forum
120	Australasian Epidemiological Association (AEA)
122	Women in Science Parkville Precinct (WiSPP)
123	St. Vincent's Institute of Medical Research
125	University of Newcastle