Australian Government
National Health and Medical Research Council

NHMRC

Synergy Grants 2020 Peer Review Guidelines

Opening date:	**26 February 2020**
Closing date and time:	17.00 AEDT on 22 April 2020
Commonwealth policy entity:	National Health and Medical Research Council (NHMRC)
RGMS assistance and enquiries:	NHMRC Research Help Centre Phone: 1800 500 983 (+61 2 6217 9451 for international callers) Email: help@nhmrc.gov.au Note: NHMRC's Research Help Centre aims to provide a reply to all requests for general assistance within two working days. This timeframe may be delayed during peak periods or for more detailed requests for assistance.

1 INTRODUCTION

The National Health and Medical Research Council (NHMRC) is responsible for managing the Australian Government's investment in health and medical research in a manner consistent with Commonwealth legislation, guidelines and policies. NHMRC has a responsibility to ensure taxpayers' funds are invested appropriately to support the best health and medical research. Expert peer review assists us in fulfilling this responsibility.

This guide outlines the overarching principles and obligations under which the Synergy Grant peer review process operates, including:

- obligations in accordance with legislation, guidelines and policies
- how to declare and manage conflicts of interest, and
- standards and best practice for the conduct of peer review.

NHMRC will advise the sector of any change to the peer review process via its communications such as, NHMRC's website and newsletter.

This guide should be read in conjunction with the:

- *Synergy Grants 2020 Guidelines* which set out the rules, objectives and other considerations relevant to NHMRC funding.
- *Policy on the Disclosure of Interests requirements for prospective and appointed NHMRC committee members* (Section 39 Committees). This Policy outlines peer reviewers' responsibilities in order to ensure all disclosures of interests are addressed in a rigorous and transparent way throughout the period of a peer reviewer's participation in NHMRC Committees.

2 KEY CHANGES

Applicants should note the following significant changes for the Synergy Grants 2020 peer review:

- Panel Assessment Confirmation meetings will no longer be held to discuss applications by exception.
- Peer reviewers will be able to seek clarification on peer review policies and processes during the assessment phases from independent Chairs (see section 4.2 Roles and responsibilities).
- The threshold score for Stage One shortlisting has increased to 4.801 in each criteria (see section 4.3.8 Threshold scores and Shortlisting).

3 PRINCIPLES, CONDUCT AND OBLIGATIONS DURING PEER REVIEW

The peer review process requires all applications to be reviewed by individuals with appropriate expertise. This carries an obligation on the part of peer reviewers to act in good faith, in the best interests of NHMRC and the research community and in accordance with NHMRC policies (outlined below).

3.1 NHMRC's Principles of Peer Review

NHMRC's Principles of Peer Review (the Principles) are high-level, guiding statements that underpin all NHMRC's peer review processes, and include:

- **Fairness.** Peer review processes are fair and seen to be fair by all.
- **Transparency.** Applies to all stages of peer review.
- **Independence.** Peer reviewers provide independent advice. There is also independent oversight of peer review processes by independent Chairs and Observers.
- **Appropriateness and balance.** There is appropriate experience, expertise and representation of peer reviewers assessing applications.
- **Research community participation.** Persons holding taxpayer-funded grants should willingly make themselves available to participate in peer review processes, whenever possible, in accordance with the obligations in the Funding Agreement.
- **Confidentiality.** Participants respect that confidentiality is important to the fairness and robustness of peer review.
- **Impartiality.** Peer review is objective and impartial, with appropriate processes in place to manage disclosures of interest.
- **Quality and excellence.** NHMRC will continue to introduce evidence-based improvements into its processes to achieve the highest quality decision-making through peer review.

Additional details underpinning the Principles can be found at Appendix A.

3.2 The Australian Code for the Responsible Conduct of Research

The *Australian Code for the Responsible Conduct of Research* (the Code) requires researchers participating in peer review do so in a way that is 'fair, rigorous and timely and maintains the confidentiality of the content'.

The Code is supported by additional supplementary guidance, including *Peer Review: A guide supporting the Australian Code for the Responsible Conduct of Research.*

3.3 Disclosures of Interest

3.3.1 What is an interest?

NHMRC is committed to ensuring that interests[1] of any kind are dealt with consistently, transparently and with rigour, in accordance with Part 5, section 42A of the *National Health and Medical Research Council Act 1992* (NHMRC Act) and sections 16A and 16B of the *Public Governance, Performance*

[1] An "Interest" is defined in section 4 of the NHMRC Act as meaning "any direct or indirect, pecuniary or non-pecuniary, interest". Under section *29* of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), "an official … who has a material personal interest that relates to the affairs of the entity must disclose details of the interest".

and Accountability Rule 2014[2] (made under the subsection 29(2) of the *Public Governance, Performance and Accountability Rule 2013* (PGPA Act)).

In particular, under:

- subsection 42A(3) of the NHMRC Act, peer reviewers of Council and Committees must "give to the CEO a written statement of any interest the peer reviewer has that may relate to the activity of the Council or Committee" before starting to hold office. "Interest" is defined in section 4 of the NHMRC Act as meaning "any direct or indirect, pecuniary or non-pecuniary interest."
- section 29 of the PGPA Act, "an official… who has a material personal interest that relates to the affairs of the entity must disclose details of the interest". This obligation (unlike the obligation in subsection 42A(3) of the NHMRC Act) is ongoing and not limited to a particular point in time.

For the purposes of this document, the terms "material personal interest" and "interest" are regarded as interchangeable, and whilst the term "interest/s" has been used for ease of reading, this policy includes guidance on each.

Although many positives may emerge from collaborations and partnerships with industry, there is potential for conflicts of interest to arise. These conflicts may arise from competing commitments and Financial Interests that may, or may be perceived to affect scientific endeavours.

3.3.2 What is a Conflict of Interest (CoI)?

A CoI exists when there is a divergence between professional responsibilities (as a peer reviewer) and personal interests. Such conflicts have the potential to lead to biased advice affecting objectivity and impartiality. By managing any conflict, NHMRC maintains the integrity in its processes in the assessment of scientific and technical merit of the application.

For NHMRC peer review purposes, interests may fall into the broad domains of:

- Involvement with the application under review
- Working relationships
- Professional relationships and associations
- Social relationships or associations
- Collaborations
- Teaching or supervisory relationships
- Financial relationships or interests
- Other relevant interests or relationships

For further information peer reviewers should consult the NHMRC *Policy on the Disclosure of Interests Requirements for Prospective and Appointed NHMRC Committee Members* (Section 39 Committees).

Researchers frequently have a CoI that cannot be avoided. Decision making processes in research often need expert advice, and the pool of experts in a field can be so small that all the experts have some link with the matter under consideration. An individual researcher should therefore expect to be conflicted from time to time, be ready to acknowledge the conflict and make disclosures as appropriate.

An outline of potential CoI situations and guidance is provided for peer reviewers at Appendix B.

[2] Made under subsection 29(2) of the PGPA Act.

3.3.3 Disclosure of Interests in the Peer Review Process

Peer reviewers must identify and disclose interests they may have with any of the Chief Investigators (CIs) and Associate Investigators (AIs) on applications they will be reviewing. After appointment as a peer reviewer, but before assessing any applications, peer reviewers are required to disclose their interests in writing. While disclosures of interest must be declared at the beginning of the peer review process, new or previously unrecognised disclosures of interest must be declared at any stage of the peer review process. Declarations must include details that substantiate when collaborations occurred (i.e. month and year). NHMRC will use these details to verify and determine the level of conflict. Any peer reviewer who has an interest that is determined by NHMRC to have a 'high' CoI will not be able to participate in the review of that application. However, they can provide scientific advice at the request of the Chair.

3.3.4 Failure to disclose an interest

A failure to disclose an interest without a reasonable excuse will result in the termination of the peer reviewer's appointment under section 44B of the NHMRC Act (section 44B also covers failure to comply with section 29 of the PGPA Act).

It is important for peer reviewers to inform NHMRC of any circumstances which may constitute an interest, at any point during the peer review process. Accordingly, peer reviewers are encouraged to consult the Secretariat if they are uncertain about any disclosure of interest matter.

3.4 Freedom of Information (FoI)

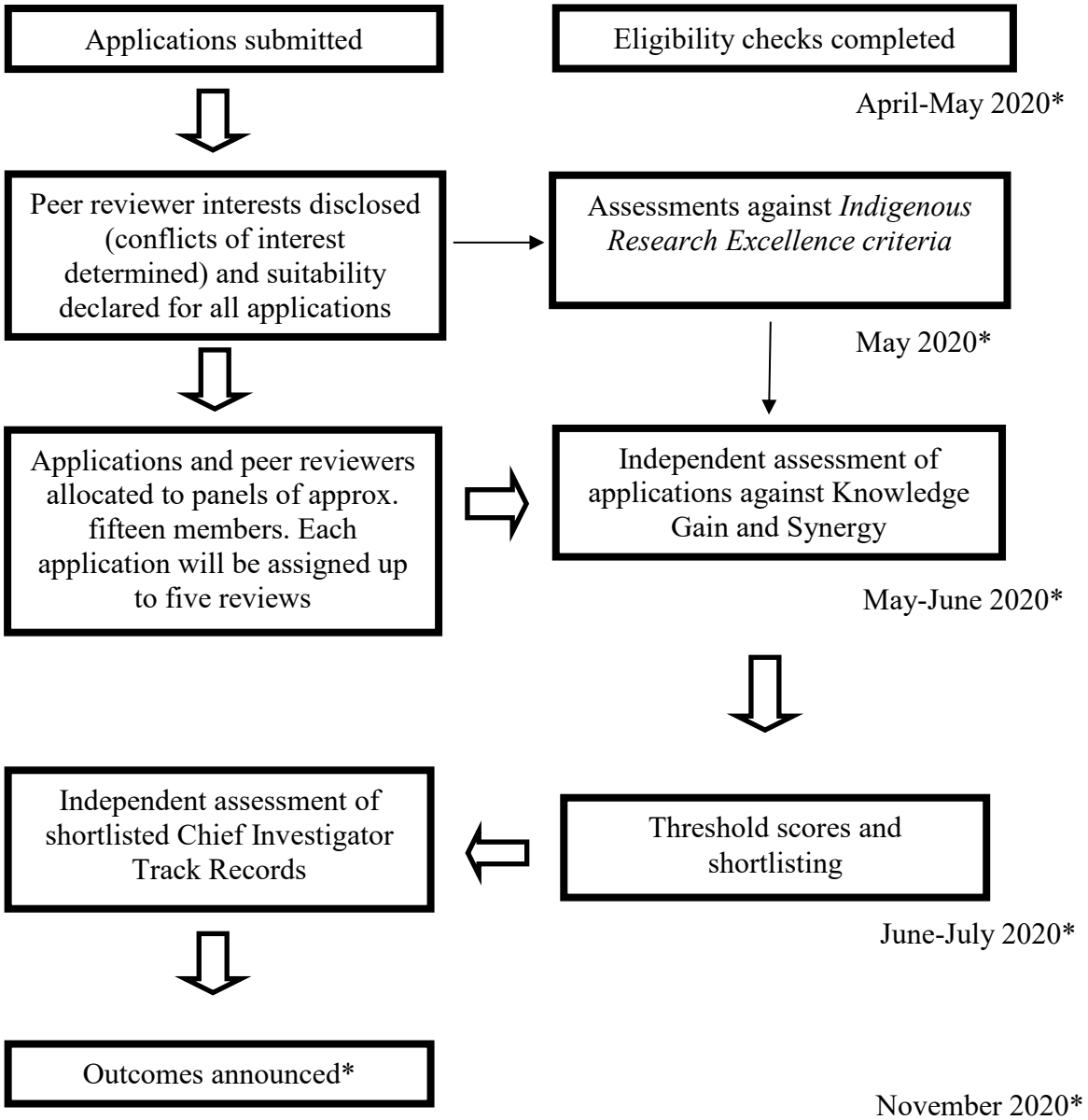
NHMRC is subject to the *Freedom of Information Act 1982* which provides a statutory right for an individual to seek access to documents. If documents that deal with peer review fall within the scope of a request, the FOI process includes consultation and exemptions. NHMRC endeavours to protect the identity of peer reviewers assigned to a particular application.

3.5 Complaints

NHMRC deals with any complaints, objections and requests for clarification on the peer review process. NHMRC may contact peer reviewers and/or Chairs involved to obtain additional information on particular application/s. Further information about the NHMRC complaints process can be found on the NHMRC website.

4 SYNERGY GRANTS PEER REVIEW PROCESS

4.1 Overview of the Synergy Grants peer review process



*Dates are indicative and subject to change

Date	Activity
22 April 2020	Deadline for Synergy Grant application submission
April-May 2020	Application eligibility review and confirmation
May 2020	Peer reviewers disclose interests and suitability against applications
May 2020	Assessments against *Indigenous Research Excellence Criteria* obtained
May 2020 – Stage One	Allocation of applications and peer reviewers to panels
May-June 2020	Panel Briefing
May-June 2020	Stage One peer reviewers review applications and submit scores against Knowledge Gain and Synergy assessment criteria for each allocated application
June 2020	A shortlist of applications is produced based on initial scores for Stage One
June-July 2020 – Stage Two	Allocation of Chief Investigator (CI) Track Record applications to peer reviewers
June-July 2020	Stage Two peer reviewers submit scores against individual Track Records of CIs allocated to them
November 2020	Notification of outcomes*

*Date is indicative and subject to change.

Further information on the steps outlined in this process is provided in section *4.3 Reviewing Synergy Grant applications.*

4.2 Roles and responsibilities

The roles and responsibilities of those participating in the Synergy Grants peer review process are identified in the table below.

Synergy Grants Peer Review Participants Table

Roles	Responsibilities
Panel Chair (Chair)	The Chair's role is to ensure NHMRC's procedures are adhered to and that fair and equitable consideration is given to every application being reviewed by peer reviewers. Chairs do not assess applications. However, they must manage the process of peer review in accordance with this Guide. Chairs need to: • familiarise themselves with this document and other material as identified by NHMRC staff • identify and advise NHMRC of all interests they have with applications assigned to their panel, and • assist peer reviewers with their duties and in understanding what is expected of them • ensure that all peer reviewers consider 'relative to opportunity', including career disruptions, when providing their advice • ensure all advice given to peer reviewers leads to an outcome where the applications are appropriately considered against the Synergy Grant assessment criteria (Appendix C) and category descriptors (Appendix D) • ensure peer reviewers consistently consider the assessment against the *Indigenous Research Excellence Criteria* for applications with an Aboriginal and Torres Strait Islander health focus • ensure all advice given to peer reviewers is consistent with NHMRC policies and processes.

Peer reviewers	Peer reviewers need to: • familiarise themselves with this Guide and other material as identified by NHMRC staff • identify and advise NHMRC of all interests they have with applications assigned to them • provide a fair and impartial assessment against the Synergy Grant assessment criteria (Appendix C) and category descriptors (Appendix D) for each application assigned, in a timely manner • assess track record by taking into consideration research achievements 'relative to opportunity', including any career disruptions, where applicable • consider the assessment against the *Indigenous Research Excellence Criteria* (Appendix E) provided for applications with an Aboriginal and Torres Strait Islander focus.
Senior NHMRC Staff	NHMRC staff with appropriate expertise may be involved in: • reviewing allocation of applications and peer reviewers • assisting and advising on the peer review process.
NHMRC Staff	Under direction from the CEO, NHMRC staff will be responsible for overall administration of the peer review process and for the conduct of specific activities. NHMRC staff will: • invite individuals to participate as peer reviewers or Chairs • determine whether disclosed interests pose a conflict and the level of that conflict • act as the first point of contact for peer reviewers and community observers • provide briefings to peer reviewers • determine eligibility of applications • assign applications to the appropriate peer reviewers • support the operation of NHMRC's granting system • assist the Chair in responding to peer reviewer enquiries • ensure that all peer reviewers are provided with the necessary information to review each application • seek feedback from Chairs, peer reviewers and community observers on improvements for future processes.
Indigenous health research peer reviewers	Indigenous health research peer reviewers will: • review the relative strength of each application and how well each application addresses NHMRC's *Indigenous Research Excellence Criteria* (Appendix E).

Community Observers	NHMRC invites respected members of the general community to observe whether NHMRC policy and procedures are being adhered to during the peer review process. Observers assist NHMRC in ensuring that the assessment of all applications is fair, equitable and impartial. Observers will be briefed on the processes and procedures of the peer review of Synergy Grant applications. They will not participate in the review of any application. Observers will: • identify and advise NHMRC of all conflicts of interests • monitor the procedural aspects of peer review • provide feedback to NHMRC on the consistency of peer review processes and policies. Observers may raise issues of a general nature for advice or action as appropriate with NHMRC staff. Observers are subject to the same disclosure of interest requirements as peer reviewers. Where a high CoI exists, the observer will not observe the review of the respective application(s).

4.3 Reviewing Synergy Grant applications

All Synergy Grant applications are assessed against the *Synergy Grants 2020 Assessment Criteria* (Appendix C) and category descriptors (Appendix D). Applications that are accepted by NHMRC as relating to the improvement of Aboriginal and Torres Strait Islander health (see section 4.3.1) are also assessed against the *Indigenous Research Excellence Criteria* as set out at Appendix E.

4.3.1 Identification of applications with an Aboriginal and Torres Strait Islander health focus

Applications relating specifically to Aboriginal and Torres Strait Islander people's health will be identified by information provided in the application. Researchers with Aboriginal and Torres Strait Islander health expertise will check whether these applications have at least 20% of their research effort and/or capacity building focused on Aboriginal and Torres Strait Islander health.

For applications confirmed as relating specifically to Aboriginal and Torres Strait Islander health research, NHMRC will endeavour to obtain at least one external assessment against the *Indigenous Research Excellence Criteria* (Appendix E) from an assessor with expertise in Aboriginal and Torres Strait Islander health. For further information on assessing applications that have a focus on the health of Indigenous Australians, see *Guidance for Assessing applications against the Indigenous Research Excellence Criteria* at Appendix F.

The assessment against the *Indigenous Research Excellence Criteria* will be considered by peer reviewers when scoring the assessment criteria at Appendix C.

4.3.2 Receipt and initial processing of applications

NHMRC staff will verify that Synergy Grant applications meet eligibility criteria. Applicants will be advised if their application is ineligible. However, in some instances these applications will remain in the peer review process until their ineligibility is confirmed. Eligibility rulings may be made at any point in the peer review process.

4.3.3 Disclosure of interests and peer reviewer suitability

Peer reviewers will be provided with an overview of applications and will need to disclose their interests in accordance with the guidelines provided at *Section 3.3* and Appendix B.

Some peer reviewers may have a disclosure of interest for which they require a decision. For these, NHMRC will assess the information provided by the peer reviewer and specify a level of peer review participation for the peer reviewer.

Peer reviewers are required to include sufficient detail in their declaration to ensure an accurate CoI assessment can be made by NHMRC staff. If the Chair or a peer reviewer is uncomfortable with a ruling level, they can raise this with NHMRC staff and request a review.

CoIs must be declared at the beginning of the peer review process. However, CoIs may be declared at any stage of the peer review process if new conflicts become apparent. Any peer reviewer who declares or has a 'high' CoI ruling will not be able to participate in the review of that application, but they can provide scientific advice, on request from the Chair, if required.

Peer reviewers are also required to select their level of suitability for applications including suitability for assessing Track Records of Chief Investigators (CIs), based on the information available to them in the application summary.

Taking into account potential CoIs and suitability, peer reviewers will be assigned to applications.

4.3.4 Establishment of panels and assignment of applications to panels

Taking into account CoIs and peer reviewer suitability, NHMRC staff will assign applications and peer reviewers to panels of approximately fifteen members. The number of panels formed will depend on the total number of applications received. Each panel will be multidisciplinary and consist of members across a range of Broad Research Areas. Each application will be assigned up to five reviews.

4.3.5 Briefing

NHMRC will provide briefing material that will provide peer reviewers further details on their duties and responsibilities associated with the Synergy Grant peer review process. This will be made available to peer reviewers prior to assessing applications. Further information may be provided as necessary throughout the peer review process.

4.3.6 Peer Review – Stage One

Stage One of Synergy Grants peer review is the assessment and scoring of two of the three assessment criteria: Knowledge Gain (30%) and Synergy (30%).

4.3.7 Assessment of applications against Knowledge Gain and Synergy

Peer reviewers will be given access to applications (where no high CoI exists) and will be required to assess and provide their scores to NHMRC. During Stage One, peer reviewers will assess all applications assigned to them against the Knowledge Gain and Synergy criteria, using the *Synergy Grants 2020 Assessment Criteria* (Appendix C) and associated category descriptors (See Table 1 of Appendix D), taking into account career disruptions and other 'relative to opportunity' considerations (Appendix I), where applicable. With respect to multidisciplinarity, diversity and collaborative gain, only the CIs of the proposed research team will be assessed; the Associate Investigators (AIs) are not considered for this criterion. Further guidance on the assessment of Synergy Grant applications and the

Concept of 'Synergy' can be found at Appendix G and H.

Peer reviewers are not to discuss applications with other peer reviewers. This is to ensure peer reviewers provide independent scores.

Peer reviewers must ensure scores are completed by the nominated due date. If peer reviewers are unable to meet this requirement, they must contact NHMRC promptly to discuss alternative arrangements.

4.3.8 Threshold scores and Shortlisting

To ensure focus on the objective of the Program 'to support outstanding multidisciplinary teams of investigators to work together to answer major questions that cannot be answered by a single investigator', applicants will be subject to minimum threshold scores of 4.801 for both 'Knowledge Gain' and 'Synergy'. Applications that fall below this score in either criterion will not be shortlisted for further consideration. For all applications, the following should be considered during the review and subsequent scoring, where applicable.

A single ranked list of applications across all panels will be produced. The most competitive applications that meet the threshold scores for Knowledge Gain and Synergy will proceed to Stage Two of peer review. All other applications will be deemed non-competitive. CIAs of applications that are deemed non-competitive may be notified at this stage of the peer review process.

4.3.9 Peer Review – Stage Two

Stage Two of Synergy Grants peer review is the assessment and scoring of the third of the three assessment criteria: Track Record (40%). At this stage, peer reviewers will only be required to review individual CI Track Record information.

4.3.10 Establishment of panel and assignment of applications to panel

Each CI Track Record will be assessed by up to five peer reviewers. Track Records will be assigned based on previously declared individual CoIs and suitability (peer reviewers are not required to declare CoIs and suitability a second time). It may be the case that a peer reviewer has a CoI with the application on which the CI is a team member, and not with the individual CI. In this case, the peer reviewer may assess that CI Track Record.

Additional peer reviewers may be required to ensure appropriate expertise for all CI Track Record assessments. These peer reviewers will be required to declare any CoIs and suitability with applicants whose CI Track Record assessment they are assigned.

4.3.11 Individual CI Track Record assessments

Peer reviewers will be provided with a Track Record PDF for each CI assigned to them. Track Record assessment only includes CIs, not AIs. When accessing this document, peer reviewers should declare any new CoIs with the CI not previously evident. Peer reviewers who become aware of any previously undeclared CoI should contact the NHMRC secretariat immediately. Peer reviewers will be required to delete or destroy any files in their possession pertaining to an applicant, and their application, where they become aware of a late high CoI.

Peer reviewers will provide scores against the Track Record criteria for CIs allocated to them against the Synergy Grants 2020 Assessment Criteria (Appendix C) using the category descriptors (see Tables 2-6 of Appendix D).

To ensure impartiality and independence of assessments peer reviewers must not discuss the track records with other peer reviewers.

For all applications in Stage Two, the following should be considered during the review and subsequent scoring, where applicable.

4.3.12 Relative to opportunity and career disruption

Panel members must take into account productivity relative to opportunity and, where applicable, career disruption considerations in the assessment of all applications. This reflects NHMRC's policy that assessment processes should 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. To assist peer reviewers with their assessment, further details regarding relative to opportunity and career disruptions are provided at Appendix I.

4.3.13 Industry-relevant experience

Peer reviewers are to recognise an applicant's industry-relevant experience and outputs. To assist peer reviewers with their assessment, the *Guide to Evaluating Industry-Relevant Experience* is provided at Appendix J.

4.3.14 Use of Impact Factors and other metrics

Peer reviewers are to take into account their expert knowledge of their field of research, as well as the citation and publication practices of that field, when assessing the publication component of an applicant's track record. Track record assessment takes into account the overall impact, quality and contribution to the field of the published journal articles from the grant applicant, not just the standing of the journal in which those articles are published.

It is not appropriate to use publication metrics such as journal Impact Factors.

The San Francisco Declaration on Research Assessment (DoRA) makes recommendations for improving the evaluation of research assessment. NHMRC is a signatory to DoRA and adheres to the recommendations outlined in DoRA for its peer review processes.

4.3.15 Enhancing reproducibility and applicability of research outcomes

Peer reviewers are required to consider the general strengths and weaknesses of the experimental design of the proposal to ensure robust and unbiased results. Assessment of the experimental design should include consideration of the following, as appropriate:

- scientific premise of the proposed research (i.e. how rigorous were previous experimental designs that form the basis for this proposal)
- techniques to be used
- details for appropriate blinding (during allocation, assessment and analysis)
- strategies for randomisation

- details and justification for control groups
- effect size and power calculations to determine the number of samples/subjects in the study (where appropriate)
- consideration of relevant experimental variables, and
- sex and gender elements of the research to maximise impact and any other considerations relevant
- to the field of research necessary to assess the rigour of the proposed design.

4.3.16 Research Integrity Issues

The peer review process can sometimes identify possible research integrity issues with applicants (e.g. concerns about possible plagiarism, inconsistencies in the presentation of data, inaccuracies in the presentation of track record information) or the behaviour of other peer reviewers. NHMRC has established specific processes for addressing research integrity concerns that arise in peer review. Peer reviewers must not discuss their concerns with other peer reviewers as this may jeopardise the fair assessment of an application. Instead, these issues should be raised with NHMRC separately from the peer review process. Advice about how to raise concerns and a description of how this process is managed is provided on the NHMRC website.

Applications that are the subject of a research misconduct allegation will continue to progress through NHMRC peer review processes while any investigations are ongoing. NHMRC liaises with the institution regarding the outcome of any investigation and, if necessary, will take action under the *NHMRC Research Integrity and Misconduct Policy* available on the NHMRC website.

4.3.17 Contact between peer reviewers and applicants

Peer reviewers must not contact applicants about their application under review. If this occurs, the peer reviewer may be removed from the process, and there is the potential for exclusion from future NHMRC peer review.

Where an applicant contacts a peer reviewer, the relevant application may be excluded from consideration.

In either case, contact between applicants and peer reviewers may raise concerns about research integrity and NHMRC may refer such concerns to the relevant Administering Institution.

4.3.18 Principles for setting conditions of funding for NHMRC grants

Setting a condition of funding (CoF) on a grant through the peer review process is, and should be, a rare event. When this does occur, the panel will use the principles set out below to decide the CoF. These principles aim to achieve a consistent approach, minimise the number of conditions set and ensure conditions are unambiguous and able to be assessed.

CoFs relate to the awarding of funding, the continuation of funding or the level of funding. They do not relate to conditions which affect either eligibility to apply or subsequent peer review.

The principles are:

- NHMRC seeks to minimise the administrative burden on researchers and Administering Institutions.
- CoFs must not relate to the competitiveness of an application (e.g. project requires more community engagement); these issues should be considered during peer review and be reflected in the scores for the application.
- Any CoFs must be clear and measurable, so that the condition can be readily assessed as having been met.

4.3.19 Funding Recommendation

Application scores from all panels (Stages One and Two) are used to create a ranked list. This final ranked list will be used to prepare funding recommendations to NHMRC's Research Committee and Council for advice to the CEO, who will then make recommendations to the Minister of Health.

4.3.20 Notification of Outcomes

Applicants will be notified of the outcomes via NHMRC's granting system and their Administering Institution's Research Administration Officer.

Feedback will be provided to all applicants in the form of an Application Assessment Summary. It will contain numerical information on the competitiveness of the application that will be drawn from the scores given by peer reviewers.

Appendix A - Understanding the Principles of Peer Review

Fairness

- Peer review processes are designed to ensure that peer review is fair and seen to be fair by all involved.
- Peer reviewers have an obligation to ensure that each application is judged consistently and objectively on its own merits, against published assessment criteria. Peer reviewers must not introduce irrelevant issues into the assessment of an application.
- Applications will be subject to scrutiny and evaluation by individuals who have appropriate knowledge of the fields covered in the application.
- Peer reviewers should ensure that their assessments are accurate and that all statements are capable of being verified.
- Complaints processes are outlined on the NHMRC website. All complaints to NHMRC relating to the peer review process are dealt with independently and impartially.

Transparency

- NHMRC will publish key dates, all relevant material for applicants and peer reviewers, and grant announcements on its website and/or via GrantConnect.
- NHMRC publicly recognises the contribution of participants in the peer review process, through publishing their names on the NHMRC website.[3]

Independence

- The order of merit determined by peer review panels is not altered by NHMRC. However, additional applications may be funded 'below the funding line' in priority or strategic areas.
- Panel Chairs are independent and are not involved in the peer review of any application before that panel. Chairs act to ensure that NHMRC's processes are followed for each scheme, including adherence to the principles of this Guide.

Appropriateness and balance

- Peer reviewers are selected to meet the program's objectives and to ensure adequate expertise to assess the applications received.
- NHMRC endeavours to ensure that panels are constituted with an appropriate representation of gender, geography and large and small institutions.

Confidentiality

- NHMRC provides a process by which applications are considered by peer reviewers in-confidence. In addition NHMRC is bound by the provisions of the Privacy Act 1988 in relation to its collections and use of personal information, and by the commercial confidentiality

[3] Such information will be in a form that prevents applicants determining which particular experts were involved in the review of their application.

requirements under section 80 of the NHMRC Act.

- Peer reviewers are to treat applications in-confidence and must not disclose any matter regarding applications under review to people who are not part of the process.
- Any information or documents made available to peer reviewers in the peer review process are confidential and must not be used other than to fulfil their role.
- NHMRC is subject to the *Freedom of Information Act 1982* which provides a statutory right for an individual to seek access to documents. If documents that deal with peer review fall within the scope of a request, there is a process for consultation and there are exemptions from release. NHMRC will endeavour to protect the identity of peer reviewers assigned to a particular application.

Impartiality

- Peer reviewers must disclose all interests and matters that may, or may be perceived to, affect objectivity in considering particular applications.
- Panel members must disclose relationships with other members of the panel, or with grants being reviewed by other panel members, including:
    - research collaborations
    - student, teacher or mentoring relationships
    - employment arrangements
    - any other relationship that may, or may be seen to, undermine fair and impartial judgement.
- Disclosures of interest are managed to ensure that no one with a high conflict is involved in decision making on relevant applications.

Quality and Excellence

- NHMRC will continue to introduce evidence-based improvements into its peer review processes.
- Any significant change will be developed in consultation with the research community and may involve piloting new processes.
- NHMRC will strive to introduce new technologies that are demonstrated to maximise the benefits of peer review and improve the efficiency and effectiveness of the process while minimising individual workloads.
- NHMRC will undertake post-program assessment of all its schemes with feedback from the sector.
- NHMRC will provide advice, training and feedback for peer reviewers new to NHMRC peer review.
- Where NHMRC finds peer reviewers to be substandard in their performance, NHMRC may provide such feedback directly to the peer reviewer or their institution.

Appendix B - Guidance for Declaring and Assessing Disclosures of Interest

Conflicts are frequently regarded as a positive indicator that peer reviewers are recognised leaders who:

- have expert advice or skills
- have been given professional opportunities
- have received government funding, and
- are supported by the companies working to raise the standard of individual and public health throughout Australia.

A disclosure of interest does not mean that a peer reviewer has engaged in an inappropriate activity. It is a collaboration which may, or could be perceived to, impact impartial peer review and thus needs to be disclosed and transparently managed (where necessary) to safeguard the integrity of the peer review process. It is the peer reviewer's responsibility to disclose all interests. Failure to do so without a reasonable excuse may result in the peer reviewer being removed from the panel in accordance with subsection 44B(3) of the NHMRC Act.

In determining if an interest is a conflict, peer reviewers should give consideration to the following values that underpin the robust nature of peer review:

- **Excellence through expert peer review:** The benefits of peer reviewers' expert advice need to be balanced with the risk of real and or perceived interests affecting an impartial review.
- **Significance:** Not all interests are equal. The type of interest needs to be considered in terms of its significance and time when it occurred.
- **Integrity through disclosure:** Peer review rests on the integrity of peer reviewers to disclose any interests and contribute to transparently managing any real or perceived conflicts in a rigorous way. The peer review system cannot be effective without trusting peer reviewers' integrity.

In determining if an interest is a 'High', 'Low', or 'No' CoI, the responsibility is on the peer reviewer to consider the specific circumstances of the situation. This includes:

- the interest's significance
- its impact on the impartiality of the reviewer, and
- maintaining the integrity of the peer review process.

Once a peer reviewer discloses a conflict they can detail a brief explanation of the disclosure of interest in NHMRC's granting system to enable accurate clarification for decisions. Wherever possible, peer reviewers are encouraged to provide sufficient detail in the explanation such as date (month and year) of collaborations. Disclosures of interest where appropriate are to be documented for conflicts with both CIs and AIs.

The written declaration of interest is retained for auditing purposes by NHMRC. The details below provide generalist examples but are not to be regarded as a prescriptive checklist

HIGH Interest		
Situation		**Example**
Associated with Application and/or Chief Investigator (CI)	✓	Peer reviewer is a CI or AI on the application under review.
	✓	Peer reviewer has had discussions/significant input into the study design or research proposal of this application.
Collaborations	✓	Peer reviewer has collaborated, in a significant way, on publications within the last three calendar years (co-authorship), pending current-round applications, existing NHMRC or other grants.
	✓	There is a direct association/collaboration between the peer reviewer and a member of the CI team that may have, or may be perceived to have, a vested interest in this research.
Working relationships	✓	Peer reviewer has the same employer, is part of the same organisation, or is negotiating for employment at the applicant's institution, including: • in the same research field at an independent Medical Research Institute. • in the same Department or School of a university. • in the same Department of a hospital.
	✓	Peer reviewer is in a position of influence within an organisation, or with a pecuniary interest, e.g. Dean of Faculty or School/Institute Directors.
	✓	Peer reviewer would benefit if the proposal was successful as an associate of the same scientific advisory committee, review board, exam board, trial committee, Data and Safety Monitoring Board etc. For example, a board of the hospital in which the research would be conducted.
Professional relationships and interests	✓	Peer reviewer's organisation is affiliated or associated with organisations that may have, or may be perceived to have, vested interest in the research. For example, a pharmaceutical company has provided drugs for testing and therefore has a vested interest in the outcome.
Social relationship and / or interests	✓	The peer reviewer has a known personal/social/perceived relationship with a CI on the application.
Teaching or supervisory relationship	✓	Peer reviewer has taught or supervised the applicant for either undergraduate or postgraduate studies, co-supervised a CI, within the last three years.
Direct financial interest in the application	✓	Peer reviewer has the potential for financial gains if the application is successful, such as, benefits from: payments from resulting patents, supply of goods and services, access to facilities, and provision of cells/animals as part of the collaboration.
	✓	Peer reviewer receives research funding or other support

		from a company and the research proposal may involve collaboration/association with relevant company.
Other interests or situations	✓	Peer reviewer has had an ongoing scientific disagreement and/or dispute with the applicant/s. This may still be ruled high if the events in question occurred beyond the last three years.
	✓	The peer reviewer feels that there are other interests or situations not covered above that could influence/or be perceived to influence, the peer review process

LOW Interest		
Situation		**Example**
Collaborations	✓	Peer reviewer and a CI on the application have collaborated more than three years ago.
	✓	Within the last three years the peer reviewer has published with the CI as part of a multi-author collaborative team (i.e. ≥10) where the peer reviewer did not have a major professional interactive role (i.e. the peer reviewer's role was a leadership role).
	✓	A co-worker is planning future collaborations with a CI.
	✓	Peer reviewer and a named AI on the application are actively or have previously collaborated within the last three years.
	✓	Without financial gain or exchange, a peer reviewer and a contributor of the research team have shared cells/animals/reagents/specialist expertise (biostatistician) etc. but have no other connection to each other.
	✓	Collaboration between a CI and the peer reviewer's research group.
	✓	Peer reviewer is considering/planning/or has planned a future collaboration with a CI on the application but have no current collaborations or joint applications.
Working relationships	✓	Peer reviewer has the same employer, is part of the same organisation or is negotiating employment at the applicant's institution
	✓	Peer reviewer and a CI work: • at the same institution and do not know each other. • in the same Faculty or College of a university but in different Schools or Departments and do not know each other. • in the same organisation, but the peer reviewer or applicant holds an honorary appointment.
	✓	Peer reviewer and a CI work for two organisations that are affiliated but there is/are no direct association/collaboration.
	✓	Peer reviewer and a CI are on the same scientific advisory committee, review board, exam board, trial committee, Data and Safety Monitoring Board etc., but otherwise have no association that would constitute a High decision.
Professional relationships and interests	✓	Peer reviewer's organisation is affiliated with the CI's organisation.
	✓	Where two organisations are affiliated but there is no direct association/collaboration between the CI and peer reviewer and there is no other link that would constitute a 'High' decision.
	✓	When the peer reviewer's institution has an indirect affiliation/association with the organisation(s) that may have, or may be perceived to have, a vested interest in this research. For example, peer reviewer is employed at a large institution that does not have a direct research interest/association with the organisation(s) in question.
Social relationship	✓	Peer reviewer's partner or an immediate family member have a known personal/social (non-work)/perceived relationship with a CI on the

and / or interests		application, but the peer reviewer themselves does not have any link with the CI that would be perceived or constitute a 'High' decision.
Teaching or supervisory relationship	✓	Peer reviewer taught or supervised the applicant for either undergraduate or postgraduate studies, co-supervised a CI, or the peer reviewer's research was supervised by a CI, more than three years ago.
Financial interest in the application	✓	Peer reviewer has an associated patent pending; supplied goods and services, improved access to facilities, or provided cells/animals etc. to a named CI for either undergraduate or postgraduate studies.
	✓	Peer reviewer has intellectual property that is being commercialised by an affiliated institution. Peer reviewer has previously provided and/or received cells/animals to/from a CI on the application, but has no other financial interests directly relating to this application that would constitute a 'High' decision.
	✓	Peer reviewer receives research funding or other support from a company, and the research proposal may impact upon the company.
Other interests or situations	✓	Peer reviewer may, or may be perceived to be, biased in their review of the application. For example, peer reviewer is a lobbyist on a particular issue.

Appendix C – Synergy Grant 2020 Assessment Criteria

Applications for Synergy Grants 2020 are assessed by peers on the extent to which they address the assessment criteria:

- Knowledge Gain (30%)
- Synergy (30%)
- Track Record, relative to opportunity (40%).

Applications will be assessed against the category descriptors at Appendix D.

Knowledge Gain - NHMRC defines 'Knowledge Gain' for the Synergy Grant scheme as the quality of the proposed research and significance of the knowledge gained. It incorporates theoretical concepts, hypotheses, research design, robustness and the extent to which the research findings will contribute to the research area and health outcomes (by advancing knowledge, practice or policy).

Synergy - NHMRC defines 'Synergy' for the Synergy Grant scheme as the quality of a diverse team's multidisciplinary and collaborative approach to solve a major health and medical research question, while building workforce capacity.

Track Record - NHMRC defines 'Track Record' for the Synergy Grant scheme as the value of an individual's past research achievement, relative to opportunity, not prospective achievements, using evidence-based components. Assessment of Track Record comprises peer reviewers' consideration of:

- Publications (20%)
- Research Impact (15%)
- Leadership (5%).

Further guidance on how to assess Synergy Grant applications against the assessment criteria is at Appendix G.

Applications are assessed relative to opportunity, taking into consideration any career disruptions (Appendix I), where applicable.

It is recognised that Aboriginal and Torres Strait Islander applicants often make additional valuable contributions to policy development, clinical/public health leadership and/or service delivery, community activities and linkages, and are often representatives on key committees. If applicable, these contributions will be considered when assessing research output and track record.

Appendix D - Synergy Grant 2020 Category Descriptors

The following category descriptors are used as a guide to scoring an application against each of the assessment criteria.

While the category descriptors provide peer reviewers with some benchmarks for appropriately scoring each application, **it is not essential that all descriptors relating to a given score are met.**

The category descriptors are a guide to a "best fit" outcome. Peer reviewers will consistently refer to these category descriptors to ensure thorough, equitable and transparent assessment of applications.

Assessing Aboriginal and Torres Strait Islander Contributions

It is recognised that Aboriginal and Torres Strait Islander applicants make additional valuable contributions to policy development, clinical/public health leadership and/or service delivery, community activities and linkages, and are often representatives on key committees. If applicable, these contributions should be considered when assessing research output and track record.

Knowledge Gain (30%) and Synergy (30%)

Table 1: Category Descriptors for Knowledge Gain and Synergy

Category	Knowledge gain	Synergy
7 Exceptional	The proposed multidisciplinary research: • **Comprehensively integrates complementary** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, that are essential to solve a major research question that is beyond the scope of a single discipline or area of research practice: ○ is supported by an **extremely well** justified and reasoned hypothesis/hypotheses/rationale ○ the scientific framework, design, methods and analyses are **flawless, highly** developed, **completely** complementary and integrated and **highly** appropriate ○ the integration of research components is **extremely likely** to result in novel conceptual approaches and insights. • Demonstrates to an **extremely high level** that the research proposal tackles a **major** question addressing an issue of **critical importance** to advance the research or health area (not prevalence or magnitude of the issue) • Collectively has or has access to **exceptional** technical resources, infrastructure, equipment and facilities, and if required, has access to additional expertise necessary to achieve project outcomes • **Will** result in **extremely** significant and **transformative** changes/outcomes in the scientific knowledge, practice or policy underpinning human health issues • **Will** lead to **extremely** significant research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs,	The proposed research team provides **exceptional** synergy (diversity, multidisciplinarity and collaborative gain) as it: Diversity • Comprises a diverse team (in terms of gender, career stage and/or researchers from different cultures) that will provide expertise **and** build capacity aligned to the research question ○ Provides investigators' diverse experience and vital perspectives, without which the research question cannot be addressed. **AND** Multidisciplinarity • **Comprehensively** demonstrates why the research requires the integration of knowledge from multiple disciplines and has processes to ensure the research question is addressed using these different disciplines complementarily • Integrates researchers with **highly complementary expertise and insights** across disciplines **necessary and sufficient** to address the major research question and lead to **transformative outcomes** ○ Achieves integration of the various researchers' skills and perspectives that is **extremely likely** to produce sustainable synergy and novel outcomes, which would not be possible by the CIs pursuing the components as separate projects. **AND** Collaborative gain • Demonstrates to an **extremely high degree**, comprehensive and

Category	Knowledge gain	Synergy
	licensing etc.) • **Would be extremely** competitive with the best, similar, research proposals internationally.	suitable plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources • Demonstrates sustainable collaborations that are **highly** likely to extend beyond the life of the project • Incorporates **comprehensive and exceptional** strategies to integrate, provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).
6 Outstanding	The proposed multidisciplinary research: • **Integrates complementary** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, that are essential to solve a major research question that is beyond the scope of a single discipline or area of research practice: o is supported by a **very well** justified and reasoned hypothesis/hypotheses/rationale o the scientific framework, design, methods and analyses **are well** developed, complementary and integrated and **highly** appropriate **with only a few minor weaknesses** o the integration of research components is **highly likely** to result in novel conceptual approaches and insights. • Demonstrates to a **very high level** that the research proposal tackles a major question addressing an issue that is **very important** to advance the research or health area (not prevalence or magnitude of the issue) • Collectively has or has access to **outstanding** technical resources, infrastructure, equipment and facilities, and if required, has access to additional expertise necessary to achieve project outcomes	The proposed research team provides **outstanding** synergy (diversity, multidisciplinarity and collaborative gain) as it: Diversity • Comprises a diverse team (in terms of gender, career stage and/or researchers from different cultures) that will provide expertise **and** build capacity aligned to the research question o Provides investigators' diverse experience and vital perspectives, without which the research question cannot be addressed. **AND** Multidisciplinarity • Demonstrates to **a very high degree** why the research requires the integration of knowledge from multiple disciplines and has processes to ensure the research question is addressed using these different disciplines complementarily • Integrates researchers with **complementary expertise and insights** across disciplines **necessary and sufficient** to address the major research question and lead to **substantial outcomes** o Achieves integration of the various researchers' skills and perspectives that is **highly likely** to produce sustainable synergy and novel outcomes, which would not be possible by

Category	Knowledge gain	Synergy
	• **Will** result in **very highly** significant and **substantial** changes/outcomes in the scientific knowledge, practice or policy underpinning human health issues • **Will** lead to **very highly** significant research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.) • Would be **highly** competitive with the best, similar, research proposals internationally.	the CIs pursuing the components as separate projects. **AND** Collaborative gain • Demonstrates to a **very high degree**, comprehensive and suitable plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources • Demonstrates sustainable collaborations that are **highly** likely to extend beyond the life of the project. • Incorporates **comprehensive** and **outstanding** strategies to integrate, provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).

5 Excellent	The proposed multidisciplinary research:
	
	• **Integrates complementary** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, that are essential to solve a major research question that is beyond the scope of a single discipline or area of research practice:
	
	  ○ is supported by a well justified and reasoned hypothesis/hypotheses/rationale
	
	  ○ the scientific framework, design, methods and analyses are well developed, complementary and integrated and highly appropriate with several minor weaknesses
	
	  ○ the integration of research components is likely to result in novel conceptual approaches and insights.
	
	• Demonstrates to a **high level** that the research proposal tackles a **major** question addressing an issue that is of **considerable importance** to advance the research or health area (not prevalence or magnitude of the issue)
		The proposed research team provides **excellent** synergy (diversity, multidisciplinarity and collaborative gain) as it:
		Diversity
		
		• Comprises a diverse team (in terms of gender, career stage and/or researchers from different cultures) that will provide expertise **and** build capacity aligned to the research question
		
		  ○ Provides investigators' diverse experience and vital perspectives, without which the research question cannot be addressed.
		
		AND
		Multidisciplinarity
		
		• Demonstrates to a **high degree** why the research requires the integration of knowledge from multiple disciplines and has processes to ensure the research question is addressed using these different disciplines complementarily
		
		• Integrates researchers with **complementary expertise and insights** across disciplines **necessary and sufficient** to address the major research question and lead to **substantial outcomes**

Category	Knowledge gain	Synergy
	• Collectively has or has access to **excellent** technical resources, infrastructure, equipment and facilities, and if required, has access to additional expertise necessary to achieve project outcomes • **Will** result in **highly significant** and **substantial** changes/outcomes in the scientific knowledge, practice or policy underpinning human health issues • **Will** lead to **highly** significant research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.) • Would be **competitive** with the best, similar, research proposals internationally.	○ Achieves integration of the various researchers' skills and perspectives that is likely to produce sustainable synergy and novel outcomes, which would not be possible by the CIs pursuing the components as separate projects. **AND** Collaborative gain • Demonstrates to a **high degree**, comprehensive and suitable plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources • Demonstrates sustainable collaborations that are **likely** to extend beyond the life of the project • Incorporates **comprehensive** and **excellent** strategies to integrate, provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).
4 Very Good	The proposed multidisciplinary research: • **Integrates broadly complementary** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, that are essential to solve a major research question that is beyond the scope of a single discipline or area of research practice: ○ is supported by a **well** justified and reasoned hypothesis/hypotheses/rationale ○ the scientific framework, design, methods and analyses **are well** developed, **broadly** complementary and integrated and **highly** appropriate **with a few minor concerns** ○ the integration of research components is **likely** to result in novel conceptual approaches and insights. • Demonstrates that the research proposal tackles a major question addressing an issue that is of **importance** to advance	The proposed research team provides **very good** synergy (diversity, multidisciplinarity and collaborative gain) as it: Diversity • Comprises a diverse team (in terms of gender, career stage and/or researchers from different cultures) that will provide expertise **and** build capacity aligned to the research question ○ Provides investigators' diverse experience and vital perspectives, without which the research question cannot be addressed. **AND** Multidisciplinarity • **Broadly** demonstrates why the research requires the integration of knowledge from multiple disciplines and has processes to ensure the research question is addressed using these different disciplines complementarily

Category	Knowledge gain	Synergy
	the research or health area (not prevalence or magnitude of the issue) • Collectively has or has access to **very good** technical resources, infrastructure, equipment and facilities, and if required, has access to additional expertise necessary to achieve project outcomes • **Likely** to result in **significant and substantial** changes/outcomes in the scientific knowledge, practice or policy underpinning human health issues • **Likely** to lead to **significant** research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.) • Would be likely to be competitive with high quality, similar research proposals internationally.	• Integrates researchers with **complementary expertise and insights** across disciplines **necessary and sufficient** to address the major research question and **likely** lead to **substantial outcomes** ○ Achieves integration of the various researchers' skills and perspectives that **could** produce sustainable synergy and novel outcomes, which would not be possible by the CIs pursuing the components as separate projects. **AND** Collaborative gain • **Demonstrates comprehensive** and suitable plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources • Demonstrates sustainable collaborations that **could** extend beyond the life of the project • Incorporates **comprehensive and very good** strategies to integrate, provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).
3 Good	The proposed multidisciplinary research: • **Integrates broadly complementary** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, essential to solve a major research question that is beyond the scope of a single discipline or area of research practice: ○ is supported by **a** justified and **sound** hypothesis/hypotheses/rationale ○ the scientific framework, design, methods and analyses **are** developed, **broadly** complementary and integrated and	The proposed research team provides **good** synergy (diversity, multidisciplinarity and collaborative gain) as it: Diversity • Comprises a diverse team (in terms of gender, career stage and/or researchers from different cultures) that will provide expertise **and** build capacity aligned to the research question ○ Provides investigators' diverse experience and vital perspectives, without which the research question cannot be addressed. **AND**

Category	Knowledge gain	Synergy
	appropriate **with several minor concerns** ○ the integration of research components **could** result in novel conceptual approaches and insights. • Demonstrates that the research proposal tackles a **major** question addressing an issue that is of **some importance** to advance the research or health area (not prevalence or magnitude of the issue) • Collectively has or has access to **good** technical resources, infrastructure, equipment and facilities, and if required, has access to additional expertise necessary to achieve project outcomes • **Could** result in **significant and substantial** changes/outcomes in the scientific knowledge, practice or policy underpinning human health issues • **Could** lead to **significant** research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.) • Would be somewhat competitive with high quality, similar research proposals internationally.	Multidisciplinarity • **Largely** demonstrates why the research requires the integration of knowledge from multiple disciplines and has processes to ensure the research question is addressed using these different disciplines complementarily. • Integrates researchers with **expertise and insights** across disciplines **necessary and sufficient** to address the major research question and **could** lead to **substantial outcomes** ○ Achieves integration of the various researchers' skills and perspectives that **could in general** produce sustainable synergy and novel outcomes, which would not be possible by the CIs pursuing the components as separate projects. **AND** Collaborative gain • **Demonstrates suitable** plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources • Demonstrates collaborations that **could** extend beyond the life of the project • Incorporates **clear and good** strategies to integrate, provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).
2 Satisfactory	The proposed multidisciplinary research: • **Integrates broadly complementary** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, essential to solve a major research question that is beyond the scope of a single discipline or area of research practice:	The proposed research team provides **moderate synergy** (diversity, multidisciplinarity and collaborative gain) as it: Diversity • Comprises a diverse team (in terms of gender, career stage and/or researchers from different cultures) that will provide expertise **and** build capacity aligned to the research question

Category	Knowledge gain	Synergy
	○ is supported by **a reasoned** hypothesis/hypotheses/rationale ○ the scientific framework, design, methods and analyses are generally sound, complementary and integrated but may lack clarity in some aspects and/or may contain notable weaknesses/concerns ○ the integration of research components **could** result in **some** novel conceptual approaches and insights. • Demonstrates that the research proposal tackles a **major** question addressing an issue that is of **marginal importance** to advance the research or health area (not prevalence or magnitude of the issue) • Collectively has or has access to **some/most but not all of the** technical resources, infrastructure, equipment and facilities, and if required, has access to additional expertise necessary to achieve project outcomes • **Could** result in **appreciable improvements/outcomes** in the scientific knowledge, practice or policy underpinning human health issues • **Could** lead to **moderately significant** research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.) • Would be marginally competitive with high quality, similar research proposals internationally.	○ Provides investigators' diverse experience and vital perspectives, without which the research question cannot be addressed. **AND** Multidisciplinarity • Demonstrates **to some degree** why the research **could** require the integration of knowledge from multiple disciplines and has processes to ensure the research question is addressed using these different disciplines complementarily, **but poses some concerns.** • Integrates researchers with **expertise and insights** across disciplines that **are relevant** to the major research question and **may** lead to **improved outcomes:** ○ Achieves integration of the various researchers' skills and perspectives that **could** produce **some** synergy and novel outcomes, which would not be possible by the CIs pursuing the components as separate projects. **AND** Collaborative gain • **Demonstrates moderately suitable** plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources • Demonstrates **to some extent** collaborations that **may extend** beyond the life of the project. • Incorporates **moderate** strategies to integrate, provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).
1 Marginal to Poor	The proposed multidisciplinary research:	The proposed research team provides **limited synergy** (diversity,

Category	Knowledge gain	Synergy

	• **Does not integrate** information, data, techniques, tools, perspectives, concepts and/or theories, from two or more disciplines or bodies of specialised knowledge, essential to solve a major research question that is beyond the scope of a single discipline or area of research practice:
	  ○ has a **weak** hypothesis/hypotheses/rationale
	  ○ the scientific framework, design, methods and analyses have significant shortcomings and may contain major weaknesses.
	• **Fails** to demonstrate that the research proposal tackles a major research question
	• **Does not** have access to the technical resources, infrastructure, equipment and facilities, or access to additional expertise necessary to achieve project outcomes
	• **Is unlikely to** result in **improvements/outcomes** in the scientific knowledge, practice or policy underpinning human health issues of **significance**
	• **Is unlikely to** lead to research outputs (e.g. intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.) of **significance**
	• **Is unlikely to** be competitive with similar research proposals internationally.
		multidisciplinarity and collaborative gain) as it:
		Diversity
		• **Does not** comprise a diverse team (in terms of gender, career stage and/or researchers from different cultures) or the proposed team is diverse but investigators **do not** provide diverse experience and vital perspectives aligned **to** the research question.
		AND
		Multidisciplinarity
		• **Does not** demonstrate why the research requires the integration of knowledge from multiple disciplines and **has no processes** to ensure the research question is addressed using these different disciplines complementarily
		• **Does not** integrate researchers with **expertise and insights** across disciplines necessary to addr**e**ss the major research question.
		AND
		Collaborative gain
		• **Does not demonstrate suitable** plan(s) for the research team to work synergistically, including milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources
		• **Does not** demonstrate collaborations that are **likely to extend** beyond the life of the project
		• **Does not** incorporate strategies to integrate provide mentoring and development opportunities and increase capability of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).

Track Record, relative to opportunity (40%)

Publications (20%)

Table 2: Publications

Score	Performance Indicator	Category Descriptors
7	**Exceptional**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • an **exceptional** record of publications in terms of quality and contribution to science
6	**Outstanding**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • an **outstanding** record of publications in terms of quality and contribution to science
5	**Excellent**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • an **excellent** record of publications in terms of quality and contribution to science
4	**Very Good**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • a **very good** record of publications in terms of quality and contribution to science
3	**Good**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • a **good** record of publications in terms of quality and contribution to science
2	**Satisfactory**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • a **satisfactory** record of publications in terms of quality and contribution to science
1	**Weak or limited**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates: • a **weak or limited** record of publications in terms of quality and contribution to science

Research Impact (15%)

Table 3: Reach and significance of the research impact (5%)

<table>
<tr><th rowspan="2">Less than 10 years post-PhD (taking into account career disruptions)</th><th colspan="3">Category Descriptors</th><th rowspan="2">More than 10 years post-PhD (taking into account career disruptions)</th></tr>
<tr><th>There is robust, verifiable evidence of:</th><th>Note: Applicants do not need to demonstrate all types of research impact</th><th>There is robust, verifiable evidence of:</th></tr>
<tr><td rowspan="2">7</td><td rowspan="2">an exceptional knowledge, health, economic and/or social impact</td><td rowspan="2">Knowledge:
a paradigm changing development that has led to (a) new knowledge within the field that is recognised across multiple countries, (b) significant influence beyond the specific field of research or (c) the development of a new field(s) of research that has been recognised across multiple countries/beneficiaries
Health
a paradigm changing development that has improved health or health systems, services, policy, programs or clinical practice that (a) had a significant impact on health with an extensive reach, (b) had a profound impact on health with a modest reach, (c) profoundly improved the health of Australia’s Indigenous people or (d) led to a significant, scalable and sustainable change in health systems and services in a large number of communities
Economic
development of a service delivery or system change, prevention program, intervention, device, therapeutic or change in clinical practice that led to (a) the generation of significant commercial income or (b) a profound reduction in healthcare costs
Social
changes in policy that have had (a) a significant impact on the social well-being, equality or social inclusion of very large numbers of people at a national level or across multiple countries or (b) a profound impact on the social well-being of the end-user, public and community of a smaller number of individuals at a national level or across multiple countries</td><td>an exceptional knowledge, health, economic and/or social impact</td><td>7</td></tr>
<tr><td>an outstanding knowledge, health, economic and/or social impact</td><td>6</td></tr>
</table>

Less than 10 years post-PhD (taking into account career disruptions)	Category Descriptors			More than 10 years post-PhD (taking into account career disruptions)
	There is robust, verifiable evidence of:	**Note: Applicants do not need to demonstrate all types of research impact**	**There is robust, verifiable evidence of:**	
7	an **exceptional** knowledge, health, economic and/or social impact	Knowledge: • a major development that has led to (a) new knowledge within the field that is recognised nationally or across multiple countries, (b) a major influence beyond the specific field of research or (c) a major influence on the development of a new field(s) of research that has been recognised nationally or across multiple countries/beneficiaries Health • an important development that has improved health or health systems, services, policy, programs or clinical practice that (a) had a major impact on health with an extensive reach, (b) had a significant impact on health with a modest reach, (c) led to a significant improvement in the health of Australia's Indigenous people or (d) led to major scalable and sustainable change in health systems and services in a number of communities Economic • development of a service delivery or system change, prevention program, intervention, device, therapeutic or change in clinical practice that led to (a) the generation of considerable commercial income or (b) a major reduction in healthcare costs Social • changes in policy that have either had (a) a major impact on the social well-being, equality or social inclusion of very large numbers of people at a local, state/territory or national level or (b) a significant impact on the social well-being of the end-user, public and community of a smaller number of individuals at a local, state/territory or national level	an **excellent** knowledge, health, economic and/or social impact	5
6	an **outstanding** knowledge, health, economic and/or social impact		a **very good** knowledge, health, economic and/or social impact	4
5	an **excellent** knowledge, health, economic and/or social impact	Knowledge: • a change that has led to (a) new knowledge within the field that is recognised nationally or across multiple countries, (b) had some influence beyond the specific field of research, or (c) some influence on the development of a new field(s) of research that has been recognised nationally or across multiple countries/beneficiaries	a **good** knowledge, health, economic and/or social impact	3

<table>
<tr><th rowspan="2">Less than 10 years post-PhD (taking into account career disruptions)</th><th colspan="3">Category Descriptors</th><th rowspan="2">More than 10 years post-PhD (taking into account career disruptions)</th></tr>
<tr><th>There is robust, verifiable evidence of:</th><th>Note: Applicants do not need to demonstrate all types of research impact</th><th>There is robust, verifiable evidence of:</th></tr>
<tr><td>4</td><td>a very good knowledge, health, economic and/or social impact</td><td rowspan="3">Health
a development that has improved health or health systems, services, policy, programs or clinical practice that (a) had some impact on health with an extensive reach, (b) had a major impact on health with a modest reach, (c) led to a major improvement in the health of Australia’s Indigenous people, or (d) led to some scalable and sustainable change in health systems and services in a small number of communities
Economic
development of a service delivery or system change, prevention program, intervention, device, therapeutic or change in clinical practice that led to (a) the generation of some commercial income or (b) some reduction in healthcare costs
Social
changes in policy that have had (a) some impact on the social well-being, equality or social inclusion of very large numbers of people at a local, state/territory or national level or (b) an impact on the social well-being of the end-user, public and community of a smaller number of individuals at a local, state/territory or national level</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>3</td><td>a good knowledge, health, economic and/or social impact</td></tr>
<tr><td>2</td><td>a satisfactory knowledge, health, economic and/or social impact</td><td>a satisfactory knowledge, health, economic and/or social impact</td><td>2</td></tr>
<tr><td>1</td><td>a weak or limited knowledge, health, economic and/or social impact and/or the applicant has not supplied robust verifiable evidence</td><td>There is limited or weak evidence of:
the development of new knowledge
improved health systems and services
reductions in health care costs or economic growth
improvements in social well-being, equality or social inclusion.</td><td>a weak or limited knowledge, health, economic and/or social impact and/or the applicant has not supplied robust verifiable evidence</td><td>1</td></tr>
</table>

Table 4: Research Program's contribution to the Research Impact (5%)

Score	Performance Indicator	Category Descriptors
7	**Exceptional**	Relative to opportunity and to their field of research, there is robust verifiable evidence that the applicant's research program made: • an **exceptional** contribution to the knowledge, health, economic and/or social impact
6	**Outstanding**	Relative to opportunity and to their field of research, there is robust verifiable evidence that the applicant's research program made: • an **outstanding** contribution to the knowledge, health, economic and/or social impact
5	**Excellent**	Relative to opportunity and to their field of research, there is robust verifiable evidence that the applicant's research program made: • an **excellent** contribution to the knowledge, health, economic and/or social impact
4	**Very good**	Relative to opportunity and to their field of research, there is robust verifiable evidence that the applicant's research program made: • a **very good** contribution to the knowledge, health, economic and/or social impact
3	**Good**	Relative to opportunity and to their field of research, there is robust verifiable evidence that the applicant's research program made: • a **good** contribution to the knowledge, health, economic and/or social impact
2	**Satisfactory**	Relative to opportunity and to their field of research, there is robust verifiable evidence that the applicant's research program made: • a **satisfactory** contribution to the knowledge, health, economic and/or social impact
1	**Weak, Limited or No**	Relative to opportunity and to their field of research, the applicant's research program made: • a **weak, limited** or **no** contribution to the knowledge, health, economic and/or social impact and/or • the applicant has **not supplied robust verifiable evidence**

Table 5: Applicant's contribution to Research Program (5%)

Score	Performance Indicator	Category Descriptors	
7	**Exceptional**	Relative to opportunity and to their field, there is robust verifiable evidence that the applicant made: • an **exceptional** contribution to the research program that led to a knowledge, health, economic and/or social impact	Leadership **AND/OR** instrumental role in a research program
6	**Outstanding**	Relative to opportunity and to their field, there is robust verifiable evidence that the applicant made: • an **outstanding** contribution to the research program that led to a knowledge, health, economic and/or social impact	
5	**Excellent**	Relative to opportunity and to their field, there is robust verifiable evidence that the applicant made: • an **excellent** contribution to the research program that led to a knowledge, health, economic and/or social impact	Leadership of a component **AND/OR** collaborative role (e.g. co-investigator) in a research program
4	**Very Good**	Relative to opportunity and to their field, there is robust verifiable evidence that the applicant made: • a **very good** contribution to the research program that led to a knowledge, health, economic and/or social impact	
3	**Good**	Relative to opportunity and to their field, there is robust verifiable evidence that the applicant made: • a **good** contribution to the research program that led to a knowledge, health, economic and/or social impact	Contribution to a research program
2	**Satisfactory**	Relative to opportunity and to their field, there is robust verifiable evidence that the applicant made: • a **satisfactory** contribution to the research program that led to a knowledge, health, economic and/or social impact	
1	**Weak, Limited or No**	Relative to opportunity and to their field, the applicant made: • a **weak, limited** or **no** contribution to the research program that led to a knowledge, health, economic and/or social impact and/or • the applicant has **not supplied robust verifiable evidence**	Limited or no contribution to a research program

Leadership (5%)

Table 6: Leadership

Score	Performance Indicator	Category Descriptors
7	**Exceptional**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **exceptional** performance in: • supervision, mentoring, training and/or career development of staff and/or students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond institution.
6	**Outstanding**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **outstanding** performance in: • supervision, mentoring, training and/or career development of staff and/or students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond their institution.

Score	Performance Indicator	Category Descriptors
5	**Excellent**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **excellent** performance in: • supervision, mentoring, training and/or career development of staff and/or students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond their institution.
4	**Very Good**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **very good** performance in: • supervision, mentoring, training and/or career development of staff and students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond their institution.

Score	Performance Indicator	Category Descriptors
3	**Good**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **good** performance in: • supervision, mentoring, training and/or career development of staff and/or students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond their institution.
2	**Satisfactory**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **satisfactory** performance in: • supervision, mentoring, training and/or career development of staff and/or students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond their institution.

Score	Performance Indicator	Category Descriptors
1	**Weak or limited**	Relative to opportunity (including career stage) and to their field of research, the applicant demonstrates **weak or limited** performance in: • supervision, mentoring, training and/or career development of staff and/or students within and/or beyond their research group • experience and contribution to the peer review of publications and grant applications, nationally and/or internationally • contribution to community engagement, public advocacy, government advisory boards or committees, professional societies at a local, national and/or international level • non-research contribution(s) to department, centre, institute or organisation e.g. leadership or membership of committee • conception and direction of a research project or program • building and maintaining collaborative networks necessary to achieve research outcomes within and/or beyond their institution.

Appendix E - Indigenous Research Excellence Criteria

To qualify as Aboriginal and Torres Strait Islander health research, at least 20% of the research effort and/or capacity building must relate to Aboriginal and Torres Strait Islander health.

Qualifying applications must address the NHMRC *Indigenous Research Excellence Criteria* as follows:

- Community engagement - the proposal demonstrates how the research and potential outcomes are a priority for Aboriginal and Torres Strait Islander communities with relevant community engagement by individuals, communities and/or organisations in conceptualisation, development and approval, data collection and management, analysis, report writing and dissemination of results.

- Benefit - the potential health benefit of the project is demonstrated by addressing an important public health issue for Aboriginal and Torres Strait Islander people. This benefit can have a single focus or affect several areas, such as knowledge, finance and policy or quality of life. The benefit may be direct and immediate, or it can be indirect, gradual and considered.

- Sustainability and transferability - the proposal demonstrates how the results of the project have the potential to lead to achievable and effective contributions to health gain for Aboriginal and Torres Strait Islander people, beyond the life of the project. This may be through sustainability in the project setting and/or transferability to other settings such as evidence based practice and/or policy. In considering this issue, the proposal should address the relationship between costs and benefits.

- Building capability - the proposal demonstrates how Aboriginal and Torres Strait Islander people, communities and researchers will develop relevant capabilities through partnerships and participation in the project.

Peer reviewers will consider these in their overall assessment of the application, when scoring the *Assessment Criteria* set out in Appendix C.

Appendix F – Guidance for assessing applications against the Indigenous Research Excellence Criteria

Peer reviewers should consider the following when assessing applications that have a focus on the health of Indigenous Australians. The points below should be explicit throughout the application and not just addressed separately within the Indigenous criteria section.

Community Engagement

- Does the proposal clearly demonstrate a thorough and culturally appropriate level of engagement with the Aboriginal and Torres Strait Islander community or health services prior to submission of the application?
- Is there clear evidence that the level of engagement throughout the project will ensure the feasibility of the proposed study?
- Has the application demonstrated evidence that any of the methods, objectives or key elements of the proposed work have been formed, influenced or defined by the community?
- Were the Indigenous community instrumental in identifying and inviting further research into the health issue and will the research outcomes directly benefit the 'named' communities?
- Is there a history of working together with the 'named' communities e.g. co-development of the grant, involvement in pilot studies or how the 'named' communities will have input/control over the research process and outcomes across the life of the project?

Benefit

- Does the proposal clearly outline the potential health benefits (both intermediate and long term, direct and indirect) to Aboriginal and Torres Strait Islander people?
- Does the proposal demonstrate that the benefit(s) of the project have been determined or guided by Aboriginal and Torres Strait Islander people, communities or organisations themselves?

Sustainability and Transferability

- Does the proposal:
    - Provide a convincing argument that the outcomes will have a positive impact on the health of Aboriginal and Torres Strait Islander peoples, which can be maintained after the study has been completed?
    - Have relevance to other Indigenous communities?
    - Clearly plan for and articulate a clear approach to knowledge translation and exchange?
    - Demonstrate that the findings are likely to be taken up in health services and/or policy?
- Will the outcomes from the study make a lasting contribution to Aboriginal and Torres Strait Islander communities and their wellbeing?

Building Capability

- Does the proposal outline how Aboriginal and Torres Strait Islander people and/or communities will benefit from capability development?
- Does the proposal outline how researchers and individuals/groups associated with the research project will develop capabilities that allow them to have a greater understanding/engagement of Aboriginal and Torres Strait Islander peoples?

Appendix G – Guidance for Assessing Applications against the Synergy Grants Assessment Criteria

Synergy Grants support outstanding multidisciplinary teams of investigators to work together to answer major questions that cannot be answered by a single investigator. The assessment criteria for Synergy Grant applications are:

- Knowledge Gain (30%)
- Synergy (30%)
- Track Record, relative to opportunity (40%).
    - Publications (20%)
    - Research Impact (15%)
    - Leadership (5%).

The following advice should be taken into consideration when assessing applications.

Knowledge Gain (30%)
NHMRC defines Knowledge Gain for the Synergy Grant scheme as the quality of the proposed research and significance of the knowledge gained. It incorporates theoretical concepts, hypotheses, research design, robustness and the extent to which the research findings will contribute to the research area and health outcomes (by advancing knowledge, practice or policy).

For the assessment of Knowledge Gain peer reviewers are to consider:

- the clarity and justification of the of the research hypothesis/hypotheses/rationale
- the strengths and weaknesses of the scientific framework, study design, methods and analyses
- whether the proposal tackles a major question addressing an issue of critical importance to advance the research or health area (not prevalence or magnitude of issue)
- the access to the technical resources, infrastructure, equipment and facilities, and if required, access to additional expertise necessary to achieve the proposed outcomes
- access to the technical resources required to achieve project outcomes
- the potential for significant and transformative changes/outcomes in the scientific knowledge, practice or policy underpinning human health issues
- the potential research outputs including: intellectual property, publications, policy advice, products, services, teaching aids, consulting, contract research, spin-offs, licensing etc.

The significance of the study is not a measure of the prevalence/incidence of the health issue (e.g. cancer versus sudden infant death syndrome) but the extent to which the study will address the health issue.

Synergy (30%)
NHMRC defines ‘Synergy’ for the Synergy Grant scheme as the quality of a diverse team’s multidisciplinary and collaborative approach to solve a major health and medical research question, while building workforce capacity.

It is essential when considering the Synergy criterion against the category descriptors that **all the descriptors relating to a particular score are met**.

For the assessment of Synergy peer reviewers are to consider:

- the diverse composition of the team (gender, career stage and/or researchers from different cultures) that will:
  - provide expertise
  - build capacity (aligned to the research question)
  - provide vital skills and perspectives, without which the research question cannot be addressed.
- a multidisciplinary approach that will:
  - provide an integrated and cohesive multidisciplinary approach (or processes to ensure relevant outcomes of different disciplines are integrated)
  - integrate researchers with complementary expertise across disciplines necessary the major research question and lead to transformative outcomes
  - foster the integration of diverse researchers' skills and expertise likely to produce sustainable synergy and novel outcomes.
- the collaborative gain that:
  - demonstrates comprehensive and suitable plan(s) for the research team to work synergistically
  - includes milestones and evaluation measures and strategies for intellectual exchange, governance, grant sharing and resources
  - demonstrates sustainable synergies likely to extend beyond the life of the project
  - incorporates strategies in its proposal to integrate, provide mentoring and development opportunities and increase capabilities of under-represented groups/researchers (e.g. health professionals, consumers, community groups, policy makers and people from different cultures).

Further information on how NHMRC defines the concept of 'Synergy' is at Appendix H. Category descriptors for Knowledge Gain and Synergy are at Table 1 of Appendix D.

Track Record (40%)

NHMRC defines 'Track Record' for the Synergy Grant scheme as the value of an individual's past research achievement, relative to opportunity, not prospective achievements, using evidence-based components. Assessment of Track Record comprises peer reviewers' consideration of:

- Publications (20%)
- Research Impact (15%)
- Leadership (5%).

1. *Publications*

Assessment of publications will use a seven-point scoring system, supported by category

descriptors. Peer reviewers will be required to form a judgement based on the applicant's publications from the past 10 years (taking into account career disruptions) and the five best publications from those 10 years, as highlighted by the applicant.

Publications category descriptors are at Table 2 of Appendix D.

2. *Research Impact*

Assessment of an applicant's research impact will be based on:

I. the reach and significance of their claimed research impact (5%)
II. the contribution of their research program to the research impact (5%)
III. the contribution of the applicant to the research program (5%).

These three components of research impact are assessed separately using three seven-point scoring systems supported by category descriptors (Table 3, 4 and 5 of Appendix D).

For the assessment of 'reach and significance', the seven point scoring system is further divided for Emerging Leadership and Leadership applicants (Table 3 of Appendix D). This is to recognise that early and mid-career researchers will have had less time to accumulate research impact.

NHMRC defines the impact of research as the verifiable outcomes that research makes to knowledge, health, the economy and/or society. Impact is the effect of the research after it has been adopted, adapted for use, or used to inform further research.

Research impact is verifiable outcomes from research and *not the prospective or anticipated effects of the research*. For example, a prospective publication linked to the applicant's research program is not demonstrated or corroborated impact.

Research impact also includes research that leads to a decision not to use a particular diagnostic, treatment or health policy.

Research Impact
The verifiable outcomes that research makes to knowledge, health, the economy and/or society. Impact is the effect of the research after it has been adopted, adapted for use, or used to inform further research.

Research Program
A cohesive body of research by the applicant, not limited to an individual case study (as used in a clinical context) or a single publication. It may be recent or in the past.

Research program's contribution to the research impact
The degree to which the applicant's research program was necessary to achieve the impact(s) (knowledge, health, economic, and/or social impact).

Applicant's contribution to the research program
The level of the applicant's contribution (e.g. leadership, intellectual and/or technical input) to the research program.

Figure 1: Key definitions for the assessment of Research Impact

Peer reviewers should consider, based on the corroborating evidence provided:

- The reach of the research impact.
- the significance of the research impact to:
  - informing knowledge to advance research
  - improving products, processes, behaviours/prevention, policies, practices
  - improving the nation's economic performance
  - improving the health and well-being of the community.

For the purposes of assessing impact, NHMRC uses four specific descriptors:

- **Knowledge impact:** Research that has contributed to discoveries and/or demonstrable benefits emerging from adoption, adaption or use of the discovery to inform further research.
- **Health impact:** Research that has contributed to improvements in health through new therapeutics, diagnostics, or disease prevention; or by contributing to improvements in disease prevention, diagnosis and treatment, health policy, health systems, and quality of life.
- **Economic impact:** Research that has contributed to the nation's economic performance by creating new industries, jobs and valuable products, and reducing health care costs. An economic impact may also contribute to social or health impacts, including human capital gains and the value of life and health.
- **Social impact:** Research that has contributed to improvements in the health of the society, including the wellbeing of the end user and the community. This may include improved ability to access health care services and to participate socially.

Peer reviewers should note that applicants can demonstrate the contribution of their research program within a category of impact (knowledge, health, economic and social) or across multiple categories. If impacts from one research program are claimed across multiple categories, the overall research impact score is determined holistically and on balance across the different categories (it is not additive).

For applicants who have provided impacts for more than one research program, peer reviewers are to determine whether any one of the research programs and their impacts have been sufficiently demonstrated and corroborated, and score accordingly. Applicants are not to be scored in an additive method for multiple research programs.

Reach is the extent, spread, breadth, and/or diversity of the beneficiaries to the impact, relative to the type of research impact.

Significance is the degree to which the impact has enabled, enriched, influenced, informed or changed the performance, policies, practices, products, services, understanding, awareness or well-being of the beneficiaries (not the prevalence or magnitude of the issue).

Applicants were instructed to include one research program to demonstrate research impact(s) across one or more of the four types of impact. A research program is a cohesive body of research by the applicant, as opposed to disparate bodies of research that each have different objectives and impacts. It is not limited to an individual case study (as used in a clinical context) or a single publication. A research program may be recent or in the past.

Applicants need to outline the research program with corroborating evidence that can be independently assessed by peer reviewers. Applicants were required to provide evidence sufficient and strong enough to demonstrate their claims for all three impact criteria. Applicants may use the same evidence across the three impact criteria if appropriate. Peer reviewers will need to decide whether the impact claims have been sufficiently demonstrated and corroborated. A poorly corroborated or non-corroborated research impact or contribution to impact should receive a score of one, in alignment with the category descriptors.

Peer reviewers will consider the degree to which the applicant's research program is attributed to the impact(s) (knowledge, health, economic and/or social impact). The relationship between the applicant's research program and the impact may be foreseen or unforeseen, and may be an end product or demonstrated during the research process.

Relative to opportunity and to the applicant's field of research, peer reviewers should consider the level of the applicant's contribution (e.g. leadership, intellectual and/or technical input, etc.) to the research based on robust and verifiable evidence.

Verification of evidence provided against research impact claims

Peer reviewers can verify evidence provided by applicants. If an applicant has not provided evidence of their research impact, they should receive a score of one, in alignment with the category descriptors. Peer reviewers must not seek evidence to support the research impact claims of an applicant who has not provided evidence.

Peer reviewers should also note that, for corroborating evidence, it is the quality of the evidence provided, not the quantity, that should be considered. Applicants only need to provide evidence sufficient and strong enough to verify the claims, not all evidence that may be on the public record. A poorly or non-corroborated research contribution, should receive a score of one, in alignment with the category descriptors at Tables 3, 4, and 5 of Appendix D.

Examples of evidence are listed in Table 1 below. Evidence examples may be relevant to more than one research impact type.

Table 1: Types of Research Impact and Examples of Evidence of Research Impact

Type of impact	**Description of research impact**	**Examples of evidence (not exhaustive)**
Knowledge impact	New knowledge, demonstrating the benefits emerging from adoption, adaption or use of new knowledge to inform further research, and/or understanding of what is effective.	• recognition of research publications (e.g. citation metrics, particularly field weighted) • data sharing • contribution to registries or biobanks • prizes and conference presentations • uptake of research tools and techniques • evidence of uptake of the research by other disciplines
Health impact	Improvements in health through new therapeutics, diagnostics, disease prevention or changes in behaviour; or improvements in disease prevention, diagnosis and treatment, management of health problems, health policy, health systems, and quality of life.	• policy or program adopted • a clinical guideline adopted • international or national practice standards adopted • improved service effectiveness • Phase I, Phase II and Phase III clinical trials underway or completed • improved productivity due to research innovations (e.g. reduced illness, injury) • Quality-Adjusted Life Years, Disability-Adjusted Life Years, Potential Years of Life Lost, Patient Reported Outcome Measure and other relevant indicators • relative stay index for multi-day stay patients, hospital standardised mortality ratio, cost per weighted separation and total case weighted separation • reports (including community and government)
Economic impact	Improvements in the nation's economic	**Health Care System Savings**

	performance through creation of new industries, jobs or valuable products, or reducing health care costs, improving efficiency in resource use, or improving the welfare/well-being of the population within current health system resources. An economic impact may also contribute to social or health impacts, including human capital gains and the value of life and health.	• relative stay index for multi-day stay patients, hospital standardised mortality ratio, cost per weighted separation and total case weighted separation • reduction in Medicare Benefits Schedule/Pharmaceutical Benefits Scheme costs • improved productivity due to research innovations (e.g. reduced illness, injury) • improved service effectiveness **Product Development** • a research contract with an industry partner and an active collaboration • granting of a patent • execution of a licensing agreement with an established company • income from intellectual property • raising funding from venture capital or other commercial sources or from government schemes that required industry co-participation • successful exit from start-up company (public market flotation, merger or acquisition) • development of pre-good manufacturing practice prototype • successful generation or submission of: o a regulatory standard data set o applications for pre-market approval of a medical device o a new drug or device for registration (e.g. by Food and Drug Administration, European Medicines Agency, Therapeutic Goods Administration) • product sales
Social impact	Improvements in the health of society, including the well-being of the end user and the community. This may include improved ability to access health care services, to participate socially (including	• uptake or demonstrated use of evidence by decision makers/policy makers • qualitative measures demonstrating changes in behaviours, attitudes, improved social equity, inclusion or cohesion • improved environmental determinants of health

	empowerment and participation in decision making) and to quantify improvements in the health of society.	• improved social determinants of health • changes to health risk factors

3. *Leadership*

For the assessment of Leadership, peer reviewers are required to review applicant outputs over the past 10 years (taking into account career disruptions) across each of the four Leadership elements:

- Research Mentoring
- Research Policy and Professional Leadership
- Institutional Leadership
- Research Programs and Team Leadership.

The assessment of Leadership will be against the category descriptors at Table 6 of Appendix D.

Applications are assessed relative to opportunity, taking into consideration any career disruptions, where applicable (see Appendix I).

Appendix H – Concept of 'Synergy'

Preamble

The Synergy Grant scheme incorporates an assessment criterion on 'Synergy' that will assess the merits of an applicant team's multidisciplinary approach, the diversity of the research team and its 'collaborative gain'.

The criterion will consider the quality of the diverse team's multidisciplinary and collaborative approach to solve a major health and medical research question, as well as the capacity-building/workforce development outcomes.

Successful Synergy grant proposals will have an outcomes focus, demonstrating the skills essential to solve the research question, and will provide evidence of a discernible benefit over homogenous research teams (through multidisciplinarity and other dimensions of diversity).

A multiple disciplinary approach to research

Solving major research questions and achieving transformative health outcomes increasingly require new technical and intellectual approaches (new ways to conceptualise, think about and/or address a question) through a convergence of perspectives from different disciplines. Each discipline provides specific intellectual knowledge, experimental approaches, methodological considerations, analytical approaches, and theoretical context.
Together, these elements provide new insights to address major and challenging research questions.

In addition to integration between the broad research areas of basic science, clinical medicine and science, public health and health services research, a multidisciplinary approach may involve single or multiple methods (i.e. qualitative, quantitative, multi methods and mix methods) across a range of research disciplines including, for example, social sciences, policy analysis, economics, engineering, mathematics and physical sciences. Such approaches may be critical to address major questions relating to health care delivery, health systems strengthening or population health.

The concept of research involving multiple disciplines is often denoted by terms such as multidisciplinary, interdisciplinary and transdisciplinary. However, the definition of these terms, and even the concept of a "discipline", is constantly evolving and lacks consensus across different areas of health and medical research.

For the purposes of Synergy Grants, "multiple disciplinary research" covers 'research by teams that integrate information, data, techniques, tools, perspectives, concepts, methodologies and/or theories from two or more disciplines or bodies of specialised knowledge to advance fundamental understanding or to solve questions whose solutions are beyond the scope of a single discipline or area of research practice'.

Applicants should identify a major health and medical research related question and justify:

- why it requires the integration of knowledge from multiple disciplines or bodies of specialised knowledge
- how the multiple disciplinary approach can provide novel solutions and insights that would not be achieved with a single discipline or traditional approaches

- how the research question is operationalised and addressed using different disciplines complementarily
- the sustainability of the research collaboration and scope for long term outcomes extending beyond the life of the project, and
- the methods that will keep the multiple disciplinary team focused, integrated and cohesive and that will drive outcomes.

Diversity of research teams

NHMRC recognises the need to foster diversity in health and medical research teams beyond multiple disciplinarity.

Health and medical research, from basic science to clinical and translational research, to policy formation, requires creativity and a diverse range of skillsets and viewpoints.

Research[4] has shown that diverse teams outperform homogeneous teams. They provide distinct perspectives, creativity and innovation, increased accountability and individual enterprise to address major research questions. A diverse workforce can provide benefits including:

- global competitiveness
- a balanced and broadened perspective in setting research priorities
- contribution to robust learning environments
- improving the breadth and quality of researchers
- improving capacity to address health disparities
- enhancing public trust, and
- increased opportunities for under-represented groups/researchers to participate in and benefit from research.

Synergy Grant research teams will foster both collaborative gain and capacity building through the recruitment of talented researchers from diverse backgrounds and groups.

Diversity in Synergy Grants could span under-represented groups in health and medical research. This could include career stage, gender and researchers from different cultures (e.g. Aboriginal and Torres Strait Islander researchers). Given the broad spectrum of research encompassed in the health and medical research sector, the opportunities to engage a particular group will depend on the type of research being undertaken. It is, however, essential that each of the investigators contributes to the scientific development and execution of the project in a substantive and measurable manner.

In addition to diversity in the research team, NHMRC strongly encourages and values collaborations with stakeholders who have direct experience and knowledge, or who are direct beneficiaries, of the proposed research. This could include consumers, community groups, policy makers and people from different cultures (such as Aboriginal and Torres Strait Islander peoples). The active involvement of these stakeholders will enhance research priority setting, increase the relevance of the research and its translation and provide critical knowledge that increases the quality and direction of the research.

[4] Notice of NIH's Interest in Diversity - https://grants.nih.gov/grants/guide/notice-files/NOT-OD-18-210.html

Diversity is a broad concept with different dimensions and approaches across the health and medical research sector. Each of the different dimensions is important and diversity should be embraced in its broadest sense. Rather than mandate a particular approach to achieving diversity or ascribe a hierarchy of importance (e.g. gender versus career stage), NHMRC requires applicants to establish and demonstrate diversity in research teams that is aligned to the major research question of the proposal. The inclusion of a particular team member should be considered in the context of the research question, by valuing and using diverse personnel to enhance a project's quality and outcomes and advancing workforce development/capacity.

Applicants should justify the diversity within the proposed research team, by outlining:

- the type(s) of diversity fostered and how it will enhance the outcomes of the project and its scientific quality, including why the research question cannot be addressed without the proposed personnel, and
- how the team will contribute to the capacity building, mentoring, career development and diversification of the research workforce.

Examples of multiple disciplinary research teams are outlined below to illustrate the concepts in the context of Synergy Grants and are not indicative of the potential merit of an application.

Synergy Grant applications will be assessed against published assessment criteria based on the specific details of each proposal. Peer reviewers should refer to the category descriptors (Appendix D), which identify the expectations for each score across a seven point scale.

Examples

An example is the development of genomics formed from genetics, molecular biology, analytical chemistry, mathematics and informatics. Genomics is now being integrated with public health research for health improvement through guidelines for appropriate use of genetic tests and services, interventions such as newborn screening for conditions and multidisciplinary population sciences to assess value and impact of genetic information in health conditions.

In cancer research, the development of screening tools for cancers may comprise teams including clinicians, research nurses, geneticists, bioinformaticians and biochemists, who identify a suitable patient cohort, obtain clinical samples, identify likely biomarkers that correlate with tumour development using genetics, define the role of that gene/protein in the development of cancer and undertake subsequent development of diagnostic tests for screening in patient cohorts.

In research into the assessment and management of cardiovascular risk, research teams that include public health researchers with qualitative and quantitative skills, clinicians with a range of expertise across the lifecycle and continuum from hospital to community care, geneticists, behavioural, biomedical engineering and informatics scientists, dietitians and exercise scientists and health consumers (especially from vulnerable population groups) are required to develop new approaches to individualised absolute risk assessment and management.

Research to address new approaches to manage antibiotic resistance could incorporate researchers from biology and biochemistry, immunology, biomedicine and pharmacology to develop new

antibiotics, working with mathematicians and statisticians, as well as with behavioural scientists and economists to understand how patterns of resistance develop and develop new behavioural strategies to reduce antibiotic use or to provide incentives for appropriate use of new antibiotics.

Appendix I – NHMRC Relative to Opportunity and Career Disruption Policy

Purpose

The purpose of this document is to outline NHMRC's Relative to Opportunity Policy with respect to peer review and eligibility to apply for Emerging Leadership Investigator Grants.

NHMRC's objective is to support the best Australian health and medical research and the best researchers, at all career stages. NHMRC seeks to ensure that researchers with a variety of career experiences and those who have experienced pregnancy or a major illness/injury or have caring responsibilities, are not disadvantaged in applying for NHMRC grants.

Policy approach

NHMRC considers Relative to Opportunity to mean that assessment processes should accurately assess an applicant's track record and associated productivity relative to stage of career, including considering whether productivity and contribution are commensurate with the opportunities available to the applicant. It also means that applicants with career disruptions should not be disadvantaged (in terms of years since they received their PhD) when determining their eligibility for Emerging Leadership Investigator Grants and that their Career Disruptions should be considered when their applications are being peer reviewed.

In alignment with *NHMRC's Principles of Peer Review,* particularly the principles of fairness and transparency, the following additional principles further support this objective:

- **Research opportunity**: Researchers' outputs and outcomes should reflect their opportunities to advance their career and the research they conduct.
- **Fair access**: Researchers should have access to funding support available through NHMRC grant programs consistent with their experience and career stage.
- **Career diversity**: Researchers with career paths that include time spent outside of academia should not be disadvantaged. NHMRC recognises that time spent in sectors such as industry, may enhance research outcomes for both individuals and teams.

The above principles frame NHMRC's approach to the assessment of a researcher's track record during expert review of grant applications and eligibility of applicants applying for Emerging Leadership Investigator Grants. NHMRC expects that those who provide expert assessment during peer review will give clear and explicit attention to these principles to identify the highest quality research and researchers to be funded. NHMRC recognises that life circumstances can be very varied and therefore it is not possible to implement a formulaic approach to applying Relative to Opportunity and Career Disruption considerations during peer review.

Relative to Opportunity considerations during peer review of applications for funding

During peer review of applications, circumstances considered under the Relative to Opportunity Policy are:

- amount of time spent as an active researcher
- available resources, including situations where research is being conducted in remote or isolated communities

- building relationships of trust with Aboriginal and Torres Strait Islander communities over long periods that can impact on track record and productivity
- clinical, administrative or teaching workload
- relocation of an applicant and his/her research laboratory or clinical practice setting or other similar circumstances that impact on research productivity
- for Aboriginal and/or Torres Strait Islander applicants, community obligations including 'sorry business'
- the typical performance of researchers in the research field in question
- research outputs and productivity noting time employed in other sectors. For example there might be a reduction in publications when employed in sectors such as industry
- carer responsibilities (that do not come under the Career Disruption policy below).

Career Disruption considerations during peer review and eligibility to apply for Emerging Leadership Investigator Grants

A Career Disruption is defined as a prolonged interruption to an applicant's capacity to work, due to:

- pregnancy
- major illness/injury
- carer responsibilities.

The period of career disruption may be used:

- to determine an applicant's eligibility for an Emerging Leadership Investigator Grant
- to allow for the inclusion of additional track record information for assessment of an application
- for consideration by peer reviewers

To be considered for the purposes of eligibility and peer review, a period of Career Disruption is defined as:

- a continuous absence from work for 90 calendar days or more, and/or
- continuous, long-term, part-time employment (with defined %FTE) due to circumstances classified as Career Disruption, with the absence amounting to a total of 90 calendar days or more.[5]

Career Disruption and eligibility to apply for Investigator Grants

A Career Disruption can affect an applicant's eligibility to apply for an Emerging Leadership Investigator Grant. For such grants, the 10-year time limit on the number of years post-PhD may be extended commensurate with the period of the Career Disruption.

[5] For example, an applicant who is employed at 0.8 FTE due to childcare responsibilities would need to continue this for at least 450 calendar days to achieve a Career Disruption of 90 calendar days.

Appendix J – Guide to Evaluating Industry-Relevant Experience

Principles

NHMRC is committed to ensuring that knowledge from health and medical research is translated through commercialisation (e.g. by pharmaceutical or medical devices companies), improvements to policy, health service delivery and clinical practice.

Therefore, as a complement to other measures of research excellence (e.g. publication and citation rates), NHMRC considers industry-relevant skills, experience and achievements in its assessment of applicants' track records.

These measures recognise that applicants who have invested their research time on technology transfer, commercialisation or collaborating with industry, may have gained highly valuable expertise or outputs relevant to research translation. However, NHMRC acknowledges that these researchers will necessarily have had fewer opportunities to produce traditional academic research outputs (e.g. peer reviewed publications).

Therefore, peer reviewers should:

• Appropriately recognise applicants' industry-relevant experiences and results

• Allow for the time applicants have spent in commercialisation/industry for *"Relative to Opportunity"* considerations.

Who might have industry experience or be preparing for industry experience?

Many applicants to NHMRC may have had industry experiences of various kinds. Examples include, but are not limited to:

1. Researchers who have left academia to pursue a full time career in industry (e.g. in pharmaceutical, biotechnology or start-up companies). In such instances, outputs must be assessed 'relative to opportunity', as there may have been restrictions in producing traditional research outputs (such as peer reviewed publications), but highly valuable expertise gained or outputs produced relevant to research translation (such as patents or new clinical guidelines).

2. Academic researchers whose work has a possible commercial focus. These researchers might not have yet entered into commercial agreements with industry and have chosen to forego or delay publication in order to protect or extend their intellectual property (IP).

3. Academic researchers who have translated their discovery into a collaborative agreement with industry. The researcher may be collaborating with the company in further research and development; may have a licensing agreement; or may have licensed or assigned their IP to the company. A researcher may ultimately leave the academic institution and become Chief Executive Officer, Chief Scientific Officer, Chief Technology Officer, Scientific Advisory Board Member or consultant for a start-up or other company, based on their experience.

4. Academic researchers who are actively collaborating with companies, for example by providing expert research services for fees. Publications of such work might be precluded or delayed according to contract arrangements. The specialised nature of this research might also restrict publication to specialised journals only, as opposed to generalist journals

Relevant industry outputs

Level of experience/ output	IP	Collaboration with an industry partner	Established a start-up company	Product to market	Clinical trials or regulatory activities	Industry participation
Advanced	**• Patent granted: consider the type of patent and where it is granted. It can be more difficult to be granted a patent in, for example, the US or Europe than in Australia, depending on the patent prosecution and regulatory regime of the intended market • National phase entry and prosecution or specified country application**	**• Executed a licensing agreement with an established company • Significant research contract with an industry partner • Long term consultancy with an industry partner**	**• Achieved successful exit (public market flotation, merger or acquisition) • Raised significant (>$10m) funding from venture capital or other commercial sources (not grant funding bodies) • Chief Scientific Officer, Executive or non-executive role on company boards**	**• Produce sales • Successful regulator submission to US Food and Drug Administration (FDA), European Medicines Agency, TGA etc. • Medical device premarket submission e.g. FDA 510(k) approved**	**• Phase II or Phase III underway or completed**	**• Major advisory or consultancy roles with international companies**
Intermediate	**• Patent Cooperation Treaty (PCT) or 'international application' • Provisional patent**	**• Established a formal arrangement such as a consultancy or research contract and actively collaborating**	**• Incorporated an entity and established a board • Has raised moderate (>$1m) funding from commercial sources or government schemes that**	**• Generated regulatory standard data set • Successful regulatory submission to Therapeutic Goods Administration or European**	**• Phase I underway or completed • Protocol development • Patient recruitment**	**• Advisory or consultancy role with a national company**

			required industry co-participation (e.g. ARC Linkage, NHMRC Development Grant)	**Conformity (CE) marking • Medical device: applications for pre-market approval**		
Preliminary	**• IP generated • Patent application lodged • Invention lodged with Disclosure/s with Technology Transfer/Commercialisation Office**	**• Approached and in discussion with an industry partner under a non-disclosure agreement. No other formal contractual arrangements.**	**• Negotiated licence to IP from the academic institution**	**• Developed pre-good manufacturing practice (GMP) prototype and strong supporting data • Established quality systems**	**• Drug candidate selected or Investigative New Drug application filed • Preclinical testing**	