BUILDING
A HEALTHY
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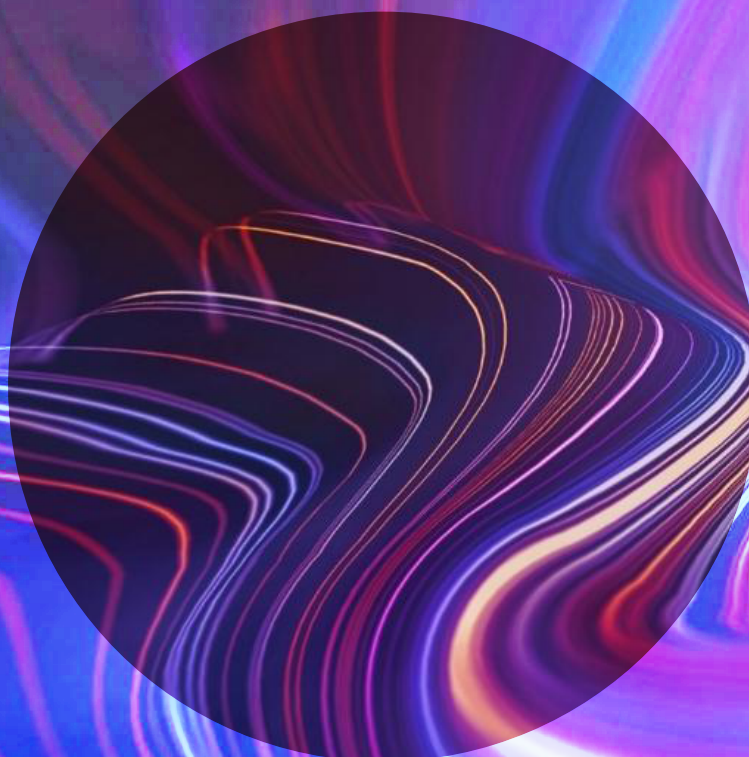# NHMRC Discussion Paper: Options to reach gender equity in the Investigator Grant scheme

July 2022

NHMRC

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Have your say

This Discussion Paper is intended to support an open discussion with the research sector on options to reach gender equity in NHMRC's Investigator Grant scheme. Your feedback will help NHMRC decide whether to adopt one of these options, or a variant of them, or take a different approach to address the problem.

Register to attend an open forum with the NHMRC CEO at the locations below:

- Monday 1 August – Brisbane (University of Queensland)
- Tuesday 2 August – Townsville (James Cook University)
- Wednesday 3 August – Sydney (University of New South Wales)
- Friday 5 August – Melbourne (Monash University)
- Tuesday 9 August – Melbourne (University of Melbourne)
- Wednesday 10 August – Perth (Telethon Kids Institute)
- Thursday 11 August – Adelaide (SAHMRI)
- Tuesday 16 August – Canberra (Australian National University).

These events will be an opportunity to hear more about the options presented in this Discussion Paper, to ask your questions and to tell us your views. We will use an online tool to gauge reactions and seek your feedback during these events.

If you are unable to attend a session in person, there are three online sessions available:

- Friday 5 August
- Thursday 11 August
- Tuesday 16 August

If you are unable to participate in these events, you can provide your feedback on the options by completing the online survey. The survey will be open until **5pm (AEST) on Tuesday 16 August 2022**.

The short timeframe to receive your feedback is critical to informing whether changes will be made to the 2023 Investigator Grant round, which is due to open for applications in January 2023 for funding commencing 1 January 2024. Due to this timeframe, NHMRC is not inviting and will not be able to review written submissions. Please use the survey to provide your comments.

Introduction

NHMRC's vision is for:

> *A gender diverse and inclusive health and medical research workforce to take advantage of the full range of talent needed to build a healthy Australia.*

NHMRC has been reporting the funding outcomes of its grant program by applicant gender for many years. In response to gender disparities in these outcomes, a range of initiatives has been introduced to improve women's access to NHMRC funding and their participation in committees and peer review.

While strong progress has been made, the numbers of applications received from women continue to trail those from men. Consequently, even when women and men are funded at similar rates (grants as a proportion of applications) and receive grants of similar size, fewer grants and less total funding are awarded to women than men.

This gap is most apparent in NHMRC's largest scheme, the Investigator Grant scheme, which offers a salary for the applicant and a research support package at 5 career levels, from early career researcher to senior research leader. Because the scheme is career stage-based, the attrition of women from the applicant pool at more senior levels of the scheme is visible – and it is striking. This is the single biggest factor contributing to marked gender disparities in funding outcomes in this major scheme. The attrition of women from the Investigator Grant applicant pool broadly reflects their representation in the Australian health and medical research sector and is therefore not solely a consequence of the scheme's design.

The reasons for this attrition are myriad and complex. There is a substantial literature on the many factors that contribute to the loss of women from research, academic, medical and other professional workforces and the barriers to their progression through professional hierarchies in Australia and many other Western countries.

For example, in general, compared with their male colleagues:

- Women are the major caregivers for children and ageing parents
- Women carry most of the load of other domestic duties
- Women undertake more service roles in their institutions
- Women receive lower pay for given responsibilities
- Women are more likely to be appointed on short-term contracts
- Women experience the majority of workplace sexual assault, harassment and other manifestations of power imbalance.

These are tangible, measurable factors. There are many others that are harder to see and to measure, for example:

- Women are less likely to be seen as leaders and to see themselves as leaders
- Women are less likely to have their ideas recognised and taken up
- Women are less likely to be seen as technically competent
- Women are less likely to be seen as committed to their careers
- Women are more likely to under-report their achievements
- Women are more likely to be excluded from formal and informal decision-making in their institution
- Women are more likely to be expected to take on service roles and to help others.

Also difficult to see and measure are the biases of those who are evaluating applicants for appointments, promotions and grants. Whatever our gender, we all have biases of which we are aware to varying degrees. Even when we are aware of our biases, we may find it difficult or may not wish to avoid their influence on our judgements. Interventions such as ensuring peer reviewer diversity, requiring implicit bias training and introducing the use of gender-neutral language in grant applications may help but are unlikely to be sufficient to overcome assessor bias.

These factors, tangible and otherwise, reflect long-standing and persistent characteristics of Australian society. For the individual woman, they may be exacerbated by intersectional factors (such as racial or cultural background or disability) or traditional attitudes within their own family or community, or they may be ameliorated by high socioeconomic status or other forms of privilege. They nevertheless add up to systemic disadvantage for women pursuing a career in health and medical research at the highest levels.

For NHMRC grant schemes where research track record is a selection criterion (such as Investigator Grants), applicants may outline any factors that have positively or negatively affected their research productivity. Assessors are then required to take this information into account in evaluating track records 'relative to opportunity'. Assessment relative to opportunity is a means to adjust for an individual's specific circumstances – whether personal (such as family responsibilities or disability) or professional (such as non-research professional responsibilities or periods of unemployment).

However, these individual considerations cannot account for systemic disadvantage. NHMRC does not expect assessors to adjust their scoring of track record because an applicant belongs to a group of people who experience systemic disadvantage. Other strategies must be used if NHMRC is to take systemic disadvantage into account.

What is the problem we are trying to solve?

The gender disparities in funding outcomes in the Investigator Grant scheme reflect the systemic disadvantage faced by women in health and medical research, made visible by the attrition of female applicants at more senior levels of the scheme. This disadvantage cannot be offset by individual 'relative to opportunity' adjustments.

Why act now?

Attrition of women from the research career pipeline has been a feature of the Australian research sector for all our lives. Existing gender equity initiatives are working but progress is slow. Preliminary results of analyses carried out by the Office of the Women in STEM Ambassador indicate that Australian competitive grants are trending towards parity between women and men at about 2% each year (manuscript in preparation). As NHMRC's vision for gender equity recognises, we cannot afford to continue wasting a large part of our talent pool in health and medical research if we are to maintain and improve the health of our community.

There is a special urgency to confront these issues now. The COVID-19 pandemic has set back women's progress towards equity around the world, even in high-income countries and even in the research sector. Women have carried a greater load in caring for their families and supervising their children's education during lockdowns, at the expense of their research careers. The pandemic has exacerbated the insecure employment of many researchers, especially women, who are more likely to be on short-term contracts. Loss of income for many research institutions has led to shedding of such staff and reduced their capacity to provide bridging funding for others. The impact of the pandemic on female researchers is already apparent in their reduced publication rates.

There is also a special opportunity to act now. After three years of NHMRC's reformed grant program, of which the Investigator Grant scheme is a critical element, we have enough data to see the impact of the changes on funding outcomes by gender. A number of measures of gender equity have improved significantly with the introduction of the grant program – but an important gap remains in the Investigator Grant scheme.

Purpose of this Discussion Paper

This Discussion Paper is the next step in NHMRC's engagement with the research sector on gender disparities in the funding outcomes in the Investigator Grant scheme. A series of CEO meetings and webinars was held after the release of results of the first round in 2019. In February 2022, NHMRC published a detailed analysis of funding outcomes by gender in the first three years of the scheme (2019, 2020 and 2021). This was followed by sector-wide webinars in February and March. The earlier analysis and recordings of the webinars are available at Gender disparities in NHMRC's Investigator Grant Scheme.

This paper has now been released to support a national consultation with the research sector from July to mid-August 2022 on options to reach gender equity in the Investigator Grant scheme.

The opening of the 2023 Investigator Grant round has been delayed until January 2023 to allow time for this consultation before the grant guidelines are submitted for government approval; funding will still commence on 1 January 2024. If further consideration is needed beyond this short window, significant changes cannot be implemented before the 2024 round.

More information on actions NHMRC is undertaking to achieve gender equity across its grant program are outlined in NHMRC's new Gender Equity Strategy 2022–2025.

Internationally, comparable funders have launched a range of initiatives to achieve gender equity such as: requiring applicants to provide gender equality and diversity plans; requiring Athena SWAN accreditation for funding eligibility; limiting applications from men or requiring institutions to submit equal numbers of applications from men and women; implementing women-only grant programs; setting gender targets; and funding research to develop additional solutions to achieve gender equity.

As Australia's largest funder of health and medical research, NHMRC has both a responsibility and some levers it can use to help reach gender equity in the Investigator Grant scheme; four options are outlined in this paper. However, for systemic change at the level required to achieve a substantial increase in numbers of women progressing through the career pipeline, action is needed across the sector to identify and remove barriers to women's success. Work is required from the universities and research institutes that receive NHMRC funding to provide environments where all researchers have an equal opportunity to excel. Noting that many administering institutions have made great strides in this area, we will write to NHMRC-funded institutions that apply to the Investigator Grant scheme seeking their support to address the disparities highlighted in this paper and to create a gender diverse and inclusive sector.

Gender disparities in the Investigator Grant scheme

This section summarises the gender disparities in the first three years of the Investigator Grant scheme (2019–2021). Further analyses are available in the February 2022 CEO Communique on Gender disparities in NHMRC's Investigator Grant Scheme.

> More men than women applied for and were awarded Investigator Grants, and higher overall funding was awarded to men than to women, particularly at the Leadership levels, over each of the first three years of the Investigator Grant scheme (2019–2021).

The Investigator Grant scheme was introduced in 2018–19 as one of four new schemes in NHMRC's reformed grant program. The purpose of the scheme is to provide a salary (if needed) and a research support package (RSP) for outstanding researchers at all career stages. Investigator Grants are awarded across 5 levels of seniority: Emerging Leadership levels 1 and 2 (EL1, EL2) (less than 10 years post-PhD) and Leadership levels 1, 2 and 3 (L1, L2, L3). All Investigator Grants are for 5 years.

More information on the Investigator Grants – funding framework is provided below.

Applications by gender

> A major factor is the attrition of female applicants at senior levels of the scheme (the 'pipeline' issue). Approximately four times more men than women applied at L3 every year.

Figure 1 (left-hand side) shows the marked decline in the proportion of applications submitted by women with seniority, the familiar 'scissor graph'. Although absolute numbers of applications generally decline for both women and men with seniority, the rate of decline for women is more precipitous than for men. This repeats a pattern seen in NHMRC's former Fellowship schemes before 2019 when the ratio of male to female applicants at the most senior level (Senior Principal Research Fellow) ranged from 2.6 to 7.8 (mean 4.7) in 2014–2018 (data not shown). It also broadly reflects the distribution of women and men by academic seniority in Australia's health and medical research sector.[1]

Approximately four times more men than women have applied at L3 in each year of the Investigator Grant scheme. A similar picture is seen at institutional level. For the six institutions that received the highest number of Investigator Grants in every year of the scheme (Universities of Melbourne, Sydney and Queensland, Monash University, UNSW and WEHI), there were on average 4.3 times more male than female L3 applicants over the three years. For three of those institutions, this ratio was seven or more.

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[1] Gender and the Research Workforce | Section 3 | 11 Medical and Health Sciences

Figure 1. Investigator Grant applications and funded rates by applicant level and gender (2019–2021)

Applications

2019

Funded rate

2019

2020

2020

2021

2021

Male CI — Female CI

Notes
All data shown include grants supported with structural priority funding (see Table 1 below).

Funded rates by gender

The funded rate across the whole scheme was lower for women every year (despite structural priority funding). There was no consistent relationship between funded rate and level from year to year.

Figure 1 (right-hand side) shows that funded rates are routinely highest at L3 and lowest at EL2/L1. This 'squeeze in the middle' was also seen in the former Fellowship schemes. The relative funded rates for women and men vary by level and by year; as there is no clear pattern, it is difficult to draw conclusions from differences at any one level in a single year. The overall difference in funded rates by gender has varied from year to year but has consistently favoured men (by 3.6 percentage points in 2019, 1.3 percentage points in 2020 and 3.6 percentage points in 2021) (data not shown). This gap would have been higher at all levels of the scheme without structural priority funding (see below).

Grants and total funding awarded by gender

Men were awarded more grants and more overall funding than women every year (despite structural priority funding).

Across three years, men received about 35% more grants and 67% more funding (about $95 million) per annum than women (Table 1). Of the 313 grants awarded to women, 70 were allocated because the applications met one or more structural priorities (see Table 2 below).

Table 1. Investigator Grant numbers and total funding by year and gender (2019–2021)

| Year | Grant numbers and total funding awarded (percentage of total funding) | | | |
	Female	**Male**	**Not stated/Other**	**Total**
2019	97 grants $123,395,974 (33.7%)	148 grants $241,837,733 (66.1%)	1 grant $639,750 (0.17%)	246 grants $365,873,457 (100%)
2020	106 grants $145,893,330 (39.7%)	131 grants $221,581,815 (60.3%)	$0	237 grants $367,475,145 (100%)
2021	110 grants $153,834,659 (38.5%)	143 grants $245,147,138 (61.3%)	1 grant $650,740 (0.16%)	254 grants $399,632,537 (100%)
Total	**313 grants $423,123,963 (37.3%)**	**422 grants $708,566,686 (62.5%)**	**2 grants $1,290,490 (0.11%)**	**737 grants $1,132,981,139 (100%)**

Structural priority funding

> **Structural priority funding – a special measure under the *Sex Discrimination Act 1984***
>
> In 2017, NHMRC implemented structural priority funding for women as a special measure under the *Sex Discrimination Act 1984* with the goal of achieving equal funded rates, initially in the former Project Grant scheme. Following the introduction of NHMRC's reformed grant program in 2019, the measure was continued in Investigator Grants and some other schemes.
>
> The measure has helped NHMRC to achieve near parity in funded rates across the grant program.
>
> Further information is available on the structural priority funding for gender equity webpage.

> Structural priority funding improved outcomes for women at every level of the Investigator Grant scheme.
>
> Leadership grants awarded through structural priority funding receive the lowest tier RSP ($300,000 per annum), the same tier as many grants above the funding cut-off. Concerns have been raised that this further entrenches disadvantage for women.

Structural priority funding has improved the funding outcomes for women in the Investigator Grant scheme over the first three years. The structural priority budget was allocated to support four priorities in 2019–2021: Aboriginal and Torres Strait Islander health researchers and research, female lead investigators and health services research. More women than men were supported through structural priority funding because support for female investigators was one of the priorities and because more women than men were awarded grants through the other priorities. As shown in Table 2 below, the overall difference in funded rates between men and women for the three years was 2.8 percentage points with structural priority funding and 5.2 percentage points without it.

Table 2. Impact of structural priority funding on Investigator Grant numbers and funded rates by applicant level and gender (pooled 2019–2021)

Level	Female		Male	
	Without SP funding Number of grants (funded rate)	With SP funding Number of grants (funded rate)	Without SP funding Number of grants (funded rate)	With SP funding Number of grants (funded rate)
EL1	113 (11.0%)	137 (13.4%)	120 (15.0%)	123 (15.4%)
EL2	48 (6.8%)	66 (9.3%)	66 (10.8%)	69 (11.3%)
L1	32 (6.0%)	47 (8.8%)	58 (8.0%)	59 (8.1%)
L2	29 (14.2%)	37 (18.1%)	58 (15.1%)	59 (15.4%)
L3	21 (30.9%)	26 (38.2%)	112 (41.8%)	112 (41.8%)
Total	**243 (9.6%)**	**313 (12.3%)**	**414 (14.8%)**	**422 (15.1%)**

Notes: SP = Structural priority

As the four Leadership RSP tiers are awarded to applications based on their position in the ranked list of final scores, Leadership grants awarded through structural priority funding receive the lowest RSP tier of $300,000 per annum. This is the same tier received by 43% of Leadership grants ranked immediately above the funding cut-off.

Average grant sizes awarded to women and men (including those awarded with structural priority funding) at each level were generally similar and any differences between them made only a minor contribution to overall gender disparities in funding (data not shown). However, the average grant size was highest at L3 where more men are funded, contributing to the gender disparity in total Investigator Grant funding.

Distribution of scores

Scores are more likely to be lower for women than for men but this is not consistent by year, level or assessment criterion.

Funding cut-offs fall within the 'outstanding' and 'excellent' scoring ranges, indicating that many highly meritorious applications are not funded.

Figure 2 shows the distribution of scores around the funding line. Mean scores and the distribution of scores were generally similar for women and men but there were differences in some groups that affected outcomes by gender. Where there were differences, scores were likely to be lower for women than for men. Analysis by assessment criterion showed that women's mean scores were lower for some criteria at some levels but these differences were not consistent across the three years (data not shown).

Category 7 applications (final score 6.501–7.00) are considered 'exceptional'; category 6 (5.501–6.500) and category 5 (4.501–5.500) are considered 'outstanding' and 'excellent' respectively. Almost all applications around the funding line, either slightly above or slightly below, including those receiving structural priority funding, have been assessed as outstanding, with the remainder rated excellent. The scores separating those around the funding line are measured to three decimal places. The score difference between the funding line and the lowest scoring application supported through gender structural priority funding ranged from 0.024 to 0.148 (for Investigator Grants 2019–2021).

In this context, seemingly minor effects of systemic disadvantage on scores, such as one point less on one criterion, can be the difference between an application being funded or unfunded.

Figure 2. Distribution of Investigator Grant scores and funding cut-offs by applicant level and gender (2019–2021)
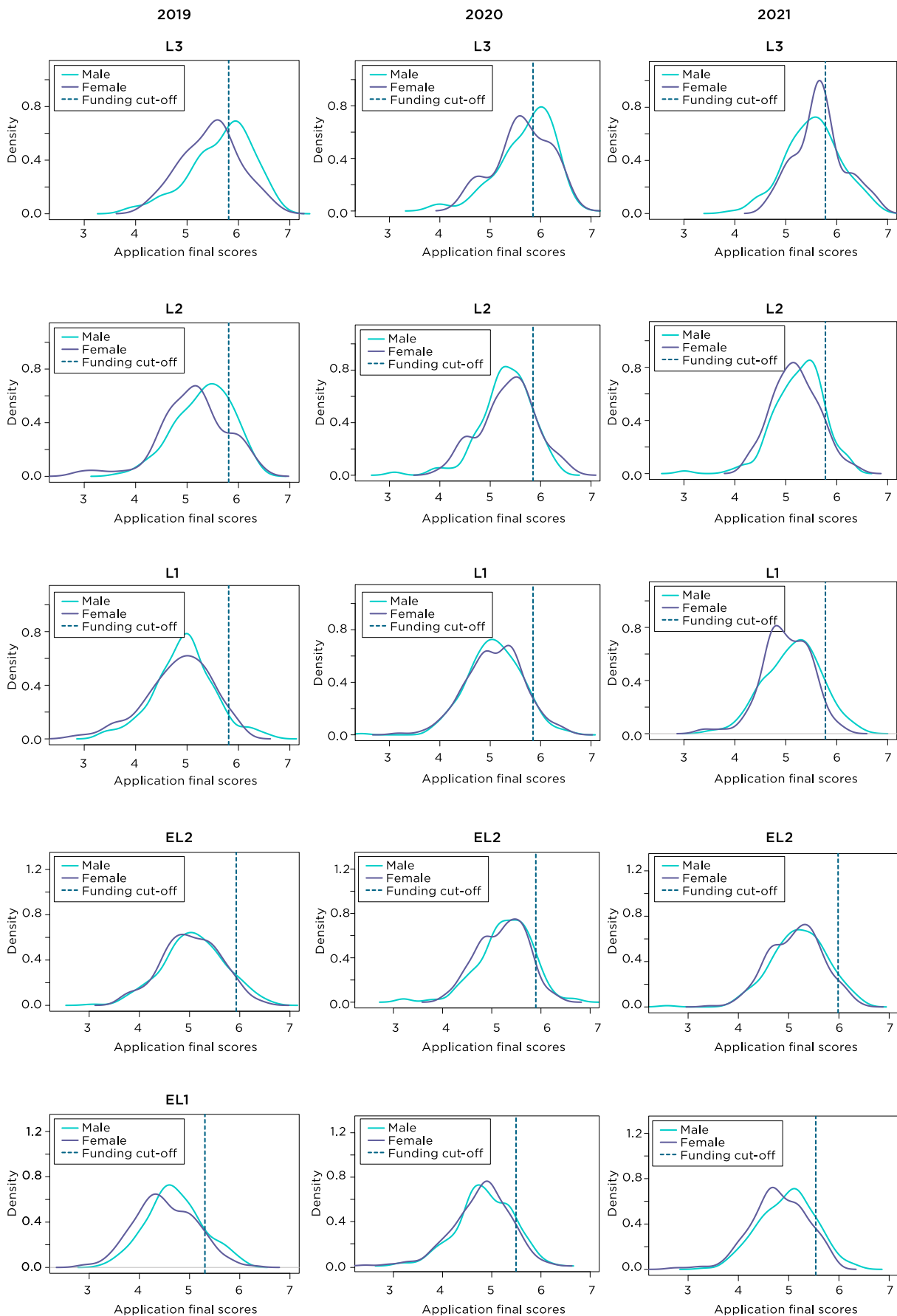
Options to reach gender equity in Investigator Grants

Introducing the options

The options presented in this Discussion Paper involve increasing funding through NHMRC's existing gender equity initiative (structural priority funding – Options 1 and 2) or directly equalising outcomes by gender by running separate competitions (Options 3 and 4).

> The options presented below are:
>
> - Option 1: Increase structural priority funding to 20%
> - Option 2: Increase structural priority funding to 20% and award a single RSP ($400,000 per annum) for all Leadership levels (L1, L2 and L3)
> - Option 3: Award equal numbers of grants by CIA gender
> - Option 4: Award equal total funding by CIA gender.

Options 1 and 2 were selected for analysis because they are a simple extension of the successful approach that has been used in major NHMRC grant schemes since 2017 (see Structural priority funding above). Option 2 directly addresses the concern noted above that Leadership applicants awarded structural priority funding under the current funding framework for Investigator Grants receive the lowest RSP tier, contributing to funding disparities and perpetuating disadvantage for women.

Options 3 and 4 were selected for analysis in response to calls from the sector for NHMRC to equalise Investigator Grant numbers and funding awarded to women and men. They also represent the most direct pathway to gender equity in Investigator Grant outcomes.

> The models presented below show how the funding outcomes in the first three years would have looked if each of these approaches had been adopted at the time. All four options (and the supporting models) are designed to test your reactions and help NHMRC determine the best path to gender equity for the Investigator Grant scheme. Your feedback will help NHMRC decide whether to adopt one of these options, or a variant of them, or take a different approach to address the problem.
>
> In considering the options, it is important to note that it is not possible to achieve equal funded rates, equal grant numbers and equal overall funding by gender at the same time unless NHMRC controls application numbers. Equal grant numbers and equal overall funding can be achieved together if grants sizes awarded to women and men are similar. However, funded rates depend on application numbers from women and men and are not controlled by NHMRC.
>
> The hypothetical funding outcomes shown below do not predict future outcomes as the distribution of applications and scores may change each year.

The modelling of the options is followed by a proposal for how applications from non-binary applicants and applicants who prefer not to state their gender identity might be considered under each of the options modelled here.

Investigator Grants – funding framework (2019–2021)

To understand the models below, it is important first to understand the funding framework for the Investigator Grant scheme in the first three years (2019–2021). An Investigator Grant provides a salary (if needed) and a flexible research support package (RSP) for outstanding researchers at all career stages. Investigator Grants are awarded for 5 years across 5 levels of seniority: two Emerging Leadership levels (EL1, EL2) (less than 10 years post-PhD) and three Leadership levels (L1, L2, L3).

The budget for the Investigator Grant scheme is $365 million. The budget was originally based on the proportion of NHMRC funding previously awarded to all fellows and equivalent researchers through the 5 Fellowship schemes and the Project and Program Grant schemes. In 2019–2020, the Investigator Grant budget comprised a $335 million baseline budget and $30 million structural priority budget. In 2021, the total budget for Investigator Grants increased to $400 million because of additional structural priority and targeted funding.[2]

Investigator Grants are funded as three competitions with their own pre-determined budgets for the three categories:

- Emerging Leadership Level 1 (EL1)
- Emerging Leadership Level 2 (EL2)
- Leadership (Levels 1, 2 and 3).

The budgets for each category and the distribution of RSP tiers were also based on the distribution of funding in the former grant program. The size of the RSP is determined in two ways:

- For Emerging Leadership Fellows, the RSP depends on their level ($50,000 per annum for EL1 and $200,000 per annum for EL2).
- For Leadership Fellows, the RSP depends on their position in the ranked list of assessor scores (Tiers 1–4: $300,000, $400,000, $500,000 or $600,000 per annum) regardless of their level; the intention is that the largest RSPs are not automatically awarded to the most senior applicants.

All applications are reviewed by up to 5 independent assessors. Peer review scores are used to generate three ranked lists (EL1, EL2 and L). The baseline budget for each category is allocated from the top of the ranked list until it runs out; for Leadership, L1, L2 and L3 applicants compete within the single budget allocation. Equally ranked applications are all treated the same way (i.e. either funded or not funded if clustered around the funding line).

The structural priority budget is used to fund additional 'near-miss' high-quality applications in defined priority areas. In 2019–2021, the following structural priorities were applied (in this order):

- Aboriginal and Torres Strait Islander health researchers (CIA)
- Female CIA
- Aboriginal and Torres Strait Islander health research
- Health services research (Broad Research Area).

All grants funded from the structural priority budget must meet the criteria for merit. In the 2019–2021 rounds, the maximum difference in final score between the baseline cut-off and the lowest score of a female CIA structural priority grant was 0.148 (data not shown).

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2   In 2021 the total budget for Investigator Grants was $400 million ($335 million baseline budget, $41 million structural priority budget and $15 million additional support for early and mid-career researchers and $9 million additional support for dementia research).

Modelling the options

Four models have been developed to answer the question: what would the funding outcomes have been in 2019, 2020 and 2021 if the Investigator Grant budget had been allocated according to any of the options?

The models are not predictive of outcomes in future rounds where application numbers, gender distribution, scores and other attributes will be different.

The methods used for each model are provided in Appendix A. Briefly:

- Each model recreates the funding outcomes for the 2019, 2020 and 2021 Investigator Grant rounds using historical data.
- Each model seeks to match the total amount awarded per round as closely as possible to the original funding outcomes published on the NHMRC website, including all structural priority (SP) funds. This means that SP funding awarded in 2019, 2020 and 2021 has been included and repurposed, rather than excluded.
- The final scores from peer review for each round have not been changed.
- The original distribution of the budget between each category was maintained. Within the Leadership category, the historical funding outcomes were not manipulated to force funding equality between men and women at each Leadership level (L1, L2 and L3). The RSP tiers were also maintained, except in Option 2 where a single RSP was applied for all Leadership levels.

The results are presented below for the three rounds combined ('2019–2021 pooled'). Each option is presented separately and then the outcomes of modelling all four options are compared. Detailed actual and modelled results for each round are available in Appendix B.

Structural priority funding for Aboriginal and Torres Strait Islander researchers has not been altered in any of the modelling below. The actual grants awarded to Indigenous researchers with SP funding have been preserved under each option.

NHMRC will continue to support additional Indigenous researchers through the Investigator Grant scheme using SP funding.

Option 1: Increase structural priority funding to 20%

In practice in 2019, 2020 and 2021, the $365 million budget for Investigator Grants was split into $335 million for baseline funding and $30 million for SP funding (about 8.2% of the overall budget).[3]

In Option 1, SP funding was increased to 20% of the overall budget to provide $292 million for baseline funding and $73 million for SP funding. The modelled funding outcomes were then generated from the original ranked application lists following the same process as used in practice.

Table 3. Option 1: 20% SP funding – modelled Investigator Grant funding outcomes (2019–2021 pooled)

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	36/68 (52.9%)	10 (14.7%)	$85,106,662 ($19,574,884)	103/268 (38.4%)	-9 (-3.4%)	$248,878,061 (-$22,512,561)
L2	47/204 (23%)	10 (4.9%)	$102,534,591 ($19,385,631)	49/383 (12.8%)	-10 (-2.6%)	$104,005,144 (-$23,715,175)
L1	64/537 (11.9%)	17 (3.2%)	$131,151,485 ($33,281,850)	49/729 (6.7%)	-10 (-1.4%)	$117,518,531 (-$20,264,044)
Leadership (L1–L3)	147/809 (18.2%)	37 (4.6%)	$318,792,738 ($72,242,366)	201/1380 (14.6%)	-29 (-2.1%)	$470,401,736 (-$66,491,780)
EL2	65/708 (9.2%)	-1 (-0.1%)	$91,482,933 (-$1,443,587)	64/612 (10.5%)	-5 (-0.8%)	$90,845,752 (-$6,898,425)
EL1	145/1023 (14.2%)	8 (0.8%)	$87,862,729 ($4,215,661)	114/798 (14.3%)	-9 (-1.1%)	$68,581,074 (-$5,336,920)
Total	**357/2540 (14.1%)**	**44 (1.7%)**	**$498,138,400 ($75,014,440)**	**379/2790 (13.6%)**	**-43 (-1.5%)**	**$629,828,561 (-$78,727,125)**

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3 The actual outcomes for 2021 Investigator Grants included an additional $11 million awarded to structural priorities (and $24 million additional support). The 20% SP model for 2021 applied $84 million in structural priority funding ($73 million + $11 million in additional structural priority funding).

Figure 3. Option 1: 20% SP funding – Actual versus modelled numbers of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)

Figure 4. Option 1: 20% SP funding – Actual versus modelled total funding of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
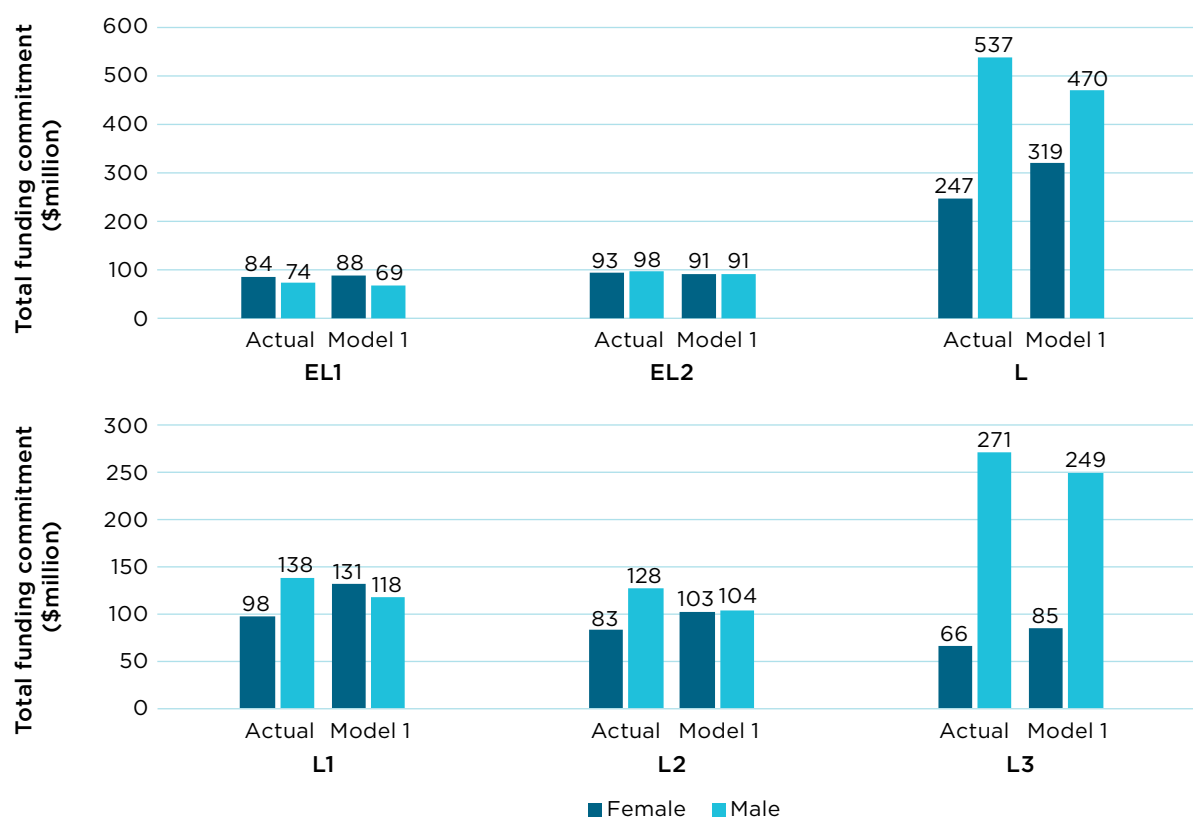
Key findings for Option 1: Increase SP to 20%

- Increasing the structural priority (SP) allocation to 20% of the overall budget did not achieve gender parity in the number of grants or total funding across all three categories or across all three Leadership levels.

- Option 1 increased the number of grants and total funding awarded to women in the EL1 and Leadership categories but it did not improve the outcomes for female EL2 applicants. Outcomes were already similar for women and men at EL2 without increasing SP funding.

- Within the Leadership category, Option 1 increased the number of grants and total funding awarded to women at all three levels (L1, L2 and L3). Both measures were higher for women than men at L1 and similar at L2 but remained substantially lower at L3.

- Option 1 reversed the gender disparity in average funded rates across the scheme to give a slightly higher funded rate for women than men overall. Women had a higher funded rate than men at the three Leadership levels.

Option 2: Increase structural priority funding to 20% and award a single Leadership RSP ($400,000 per annum)

In Option 2, SP funding was increased to 20% of the overall budget as described above for Option 1 and the four RSP tiers (LT1: $300,000; LT2: $400,000; LT3: $500,000; LT4: $600,000) were replaced with a single RSP of $400,000 per annum for all Leadership grants.

The value of $400,000 was chosen because it is the closest tier to the average RSP currently awarded across all Leadership grants.

The modelled funding outcomes were then generated from the original ranked application lists following the process used in practice, except for the application of a single Leadership RSP tier.

Table 4. Option 2: 20% SP funding and single Leadership RSP – modelled Investigator Grant funding outcomes (2019–2021 pooled)[4]

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	33/68 (48.5%)	7 (10.3%)	$83,386,078 ($17,854,300)	101/268 (37.7%)	-11 (-4.1%)	$238,405,341 (-$32,985,280)
L2	44/204 (21.6%)	7 (3.4%)	$106,871,744 ($23,722,785)	49/383 (12.8%)	-10 (-2.6%)	$113,467,747 (-$14,252,572)
L1	60/537 (11.2%)	13 (2.4%)	$143,766,821 ($45,897,186)	48/729 (6.6%)	-11 (-1.5%)	$113,763,587 (-$24,018,988)
Leadership (L1–L3)	137/809 (16.9%)	27 (3.3%)	$334,024,643 ($87,474,270)	198/1380 (14.3%)	-32 (-2.3%)	$465,636,675 (-$71,256,840)
EL2	63/708 (8.9%)	-3 (-0.4%)	$88,735,066 (-$4,191,455)	64/612 (10.5%)	-5 (-0.8%)	$90,845,752 (-$6,898,425)
EL1	137/1023 (13.4%)	0 (0%)	$83,677,305 ($30,238)	114/798 (14.3%)	-9 (-1.1%)	$68,581,074 (-$5,336,920)
Total	**337/2540 (13.3%)**	**24 (0.9%)**	**$506,437,014 ($83,313,053)**	**376/2790 (13.5%)**	**-46 (-1.6%)**	**$625,063,501 (-$83,492,185)**

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4   The modelled grant numbers for EL1 and EL2 are lower in Option 2 than Option 1 because the application of a single RSP tier of $400,000 per annum increased the average grant size in the Leadership category and this in turn alters the distribution of SP funds across the EL, EL2 and Leadership categories.

Figure 5. Option 2: 20% SP funding and single Leadership RSP – Actual versus modelled numbers of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
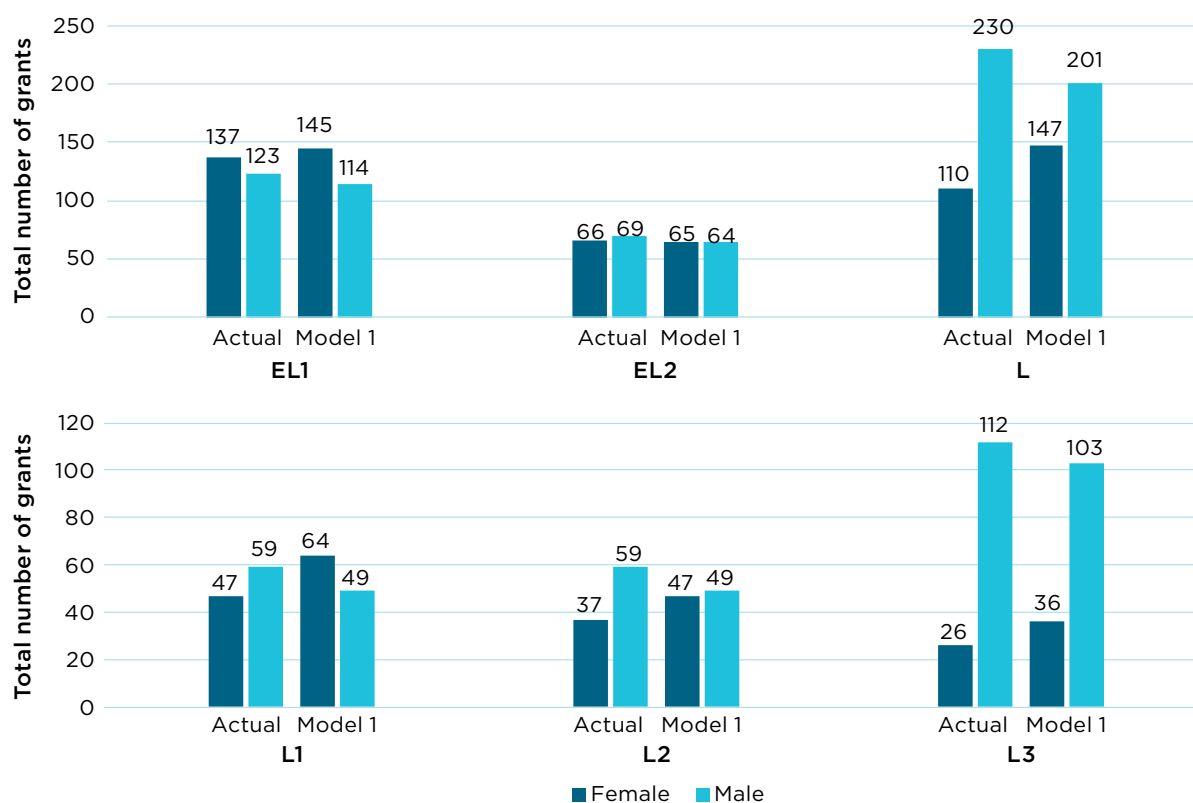

Figure 6. Option 2: 20% SP funding and single Leadership RSP – Actual versus modelled total funding of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
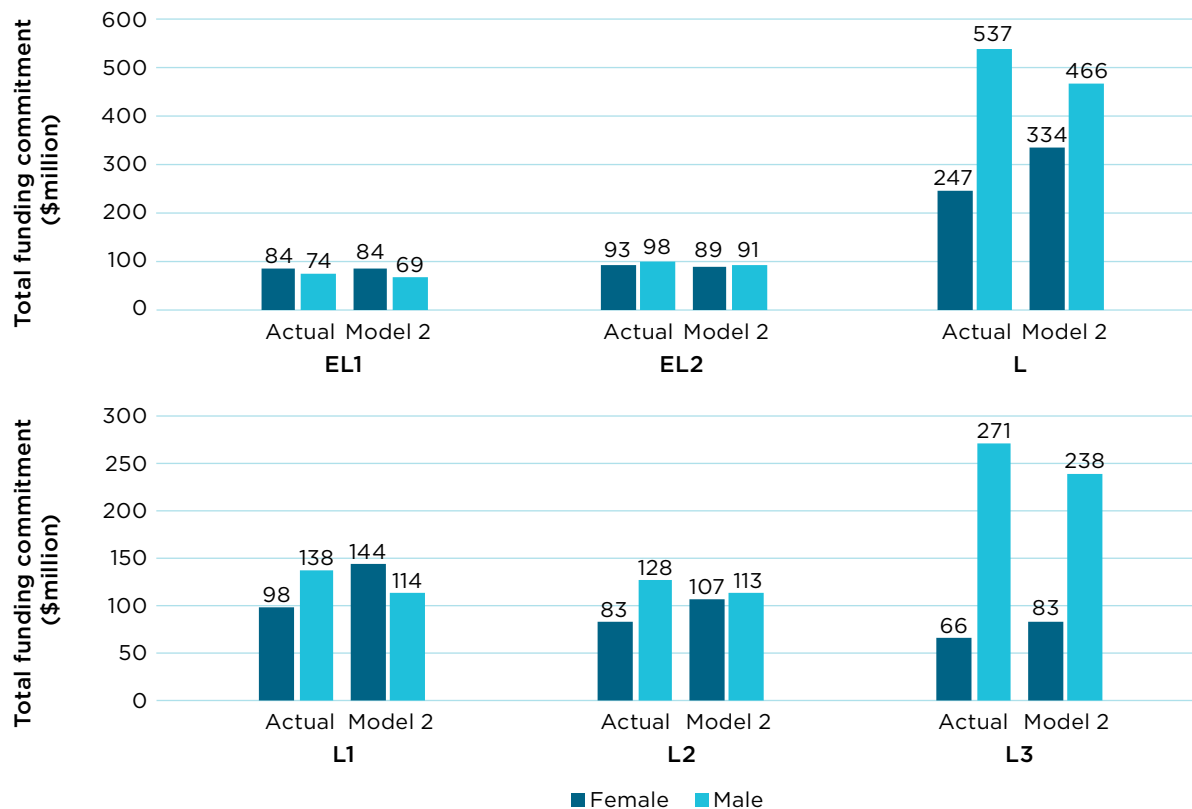
Key findings for Option 2: Increase SP to 20% and award a single Leadership RSP

- Increasing structural priority (SP) funding to 20% and awarding a single RSP of $400,000 at the Leadership level did not achieve gender parity in the number of grants or total funding across all three categories or across all three Leadership levels.
- Option 2 increased the number of grants and total funding awarded to women in the Leadership category but not in the Emerging Leadership categories.
- Within the Leadership category, Option 2 increased the number of grants and total funding awarded to women at all three levels (L1, L2 and L3). Both measures were higher for women than men at L1 and were similar at L2 but remained substantially lower at L3.
- Option 2 almost equalised average funded rates across the scheme with a slightly higher funded rate for men than women overall. Women had a higher funded rate than men at the three Leadership levels.
- The replacement of four RSP tiers with a single $400,000 RSP for the Leadership category increased the average grant size overall (not shown) and therefore reduced the total number of grants compared with actual numbers.

Option 3: Award equal numbers of grants by CIA gender

The purpose of this option is to equalise the number of grants awarded to male and female CIAs in each category (EL1, EL2 and L).

In this model, the total Investigator Grant budget[5] was split into six groups, one for each of the EL levels and the four Leadership RSP tiers (LT1–LT4). From the original ranked list of final scores, separate ranked lists were prepared for EL1, EL2 and L applications from men and women. Funding outcomes were then generated by funding pairs of applications (i.e. one woman and one man from their separate ranked lists within the same category) in descending order until the total funded amount was as close as possible to the corresponding MREA allocation for the respective EL category or RSP tier.[6]

Table 5. Option 3: Equal grant numbers – Investigator Grant funding outcomes (2019–2021 pooled)[7]

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	40/68 (58.8%)	14 (20.6%)	$100,779,508 ($35,247,729)	88/268 (32.8%)	-24 (-9%)	$211,515,397 (-$59,875,224)
L2	53/204 (26%)	16 (7.8%)	$132,923,593 ($49,774,633)	39/383 (10.2%)	-20 (-5.2%)	$78,688,875 (-$49,031,443)
L1	77/537 (14.3%)	30 (5.6%)	$175,215,065 ($77,345,430)	41/729 (5.6%)	-18 (-2.5%)	$96,665,563 (-$41,117,012)
Leadership (L1–L3)	170/809 (21%)	60 (7.4%)	$408,918,165 ($162,367,792)	168/1380 (12.2%)	-62 (-4.5%)	$386,869,836 (-$150,023,680)
EL2	62/708 (8.8%)	-4 (-0.6%)	$87,431,325 (-$5,495,195)	65/612 (10.6%)	-4 (-0.7%)	$92,075,099 (-$5,669,077)
EL1	125/1023 (12.2%)	-12 (-1.2%)	$76,404,269 (-$7,242,798)	132/798 (16.5%)	9 (1.1%)	$79,328,601 ($5,410,607)
Total	**357/2540 (14.1%)**	**44 (1.7%)**	**$572,753,759 ($149,629,799)**	**365/2790 (13.1%)**	**-57 (-2%)**	**$558,273,536 (-$150,282,150)**

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5   Excluding targeted funding and the proportion of SP funding that was used to support Indigenous CIAs.

6   Grants that were originally awarded in 2019, 2020 and 2021 to Indigenous CIAs using SP funding were preserved in the models. Additional applications were also 'funded' in the models to match any targeted funding applied in specific Investigator Grant rounds and to ensure that the models matched the total amount actually funded in each round as closely as possible.

7   The model aimed to produce the best result that is closest to the total budget available in each year, therefore strictly equal numbers between genders might not be achieved. Pooling of funding outcomes exacerbates any differences in outcome by gender year on year because the disparities are compounded and because Indigenous structural priority and other targeted funding outcomes have been preserved or replicated without balancing by gender.

Figure 7. Option 3: Equal grant numbers – Actual versus modelled numbers of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
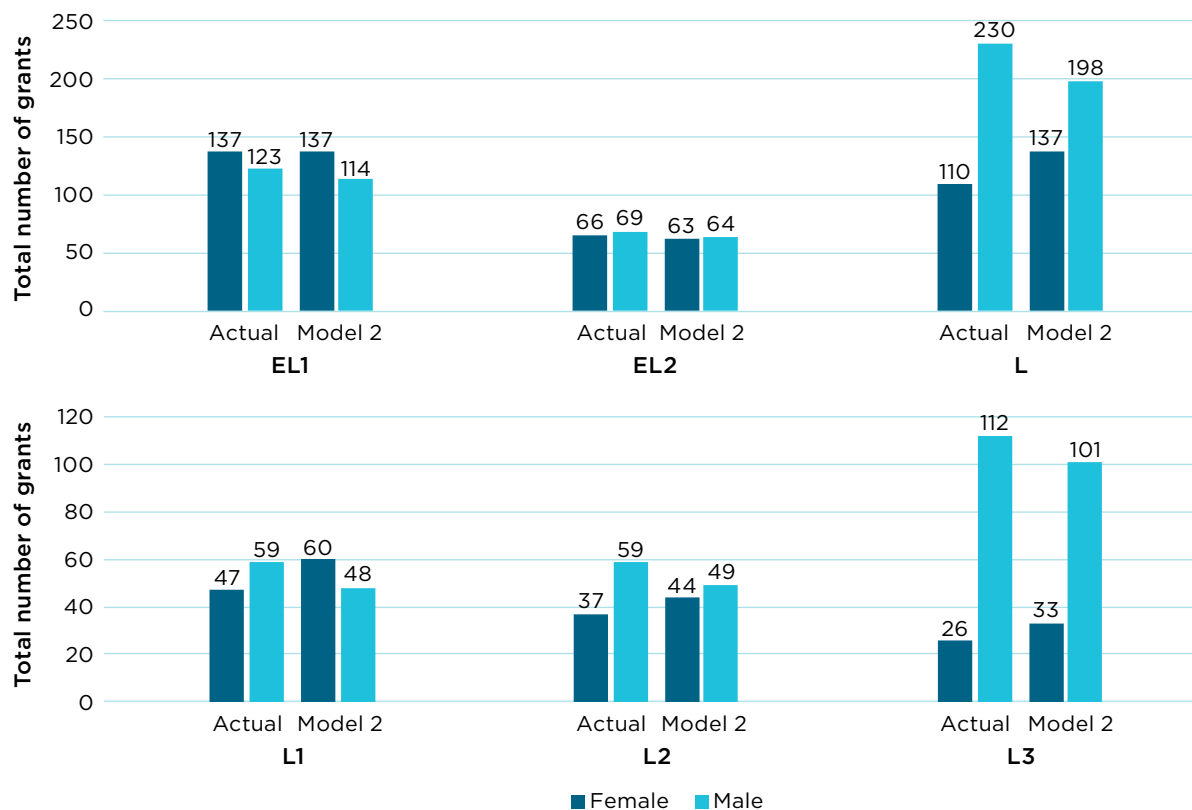

Figure 8. Option 3: Equal grant numbers – Actual versus modelled total funding of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
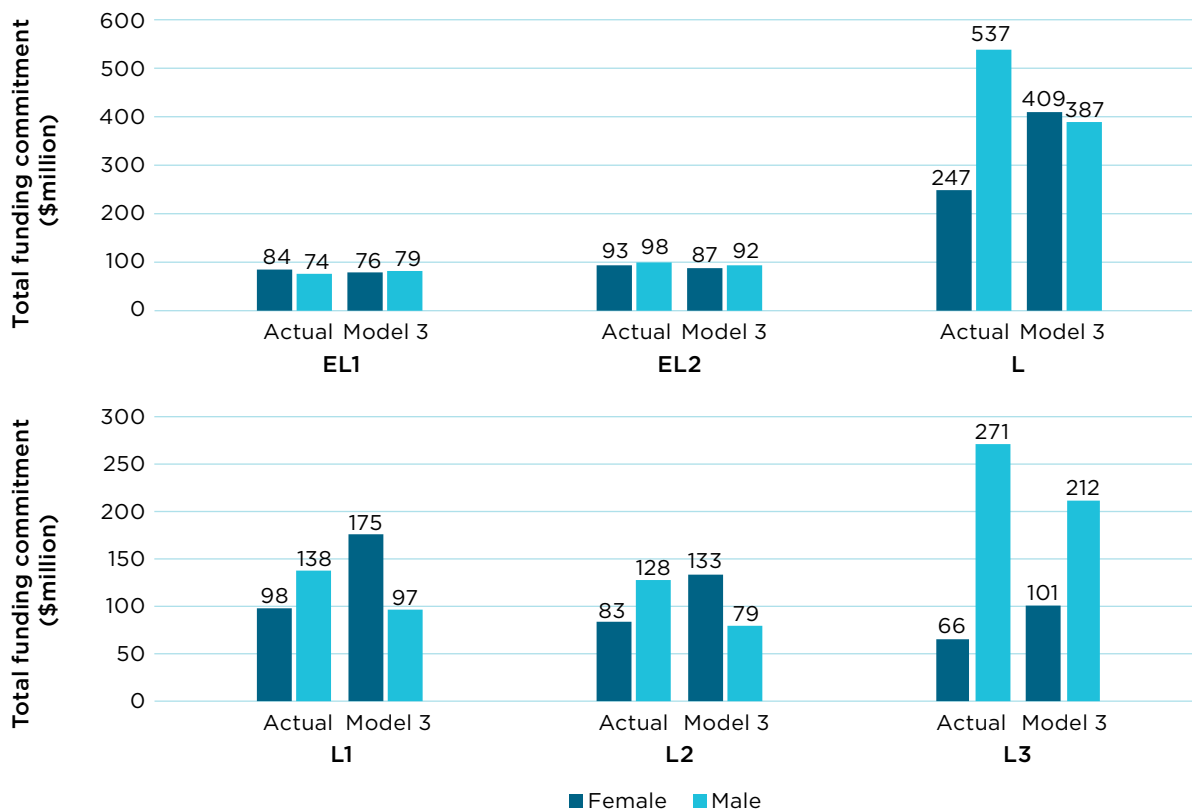
Key findings for Option 3: Award equal numbers of grants by gender

- Under Option 3, women and men were awarded similar numbers[8] of grants and total funding across the three categories (EL1, EL2 and L).
- Option 3 markedly increased the number of grants and total funding for women in the Leadership category but reduced them in the Emerging Leadership categories. The latter reductions occurred because some of the structural priority funding used in practice to fund women was allocated to men in this model.
- Within the Leadership category, women received more grants and total funding than men at L1 and L2. The model was unable to resolve the large gender difference in outcomes at the L3 level because of the much larger application numbers from men.
- Option 3 produced a higher funded rate for women than men overall. Funded rates were lower for women than men at EL1 and EL2, reflecting their higher application numbers, but substantially higher at every Leadership level.

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8   The model aimed to produce the best result that is closest to the total budget available in each year, therefore strictly equal number between genders might not be achieved. Pooling of funding outcomes exacerbates any differences in outcome by gender year on year because the disparities are compounded and because Indigenous structural priority and other targeted funding outcomes have been preserved or replicated without balancing by gender.

Option 4: Award equal total funding by CIA gender

The purpose of this model is to equalise the total funding awarded to male and female CIAs in each category (EL1, EL2 and L).

In this model, the total Investigator Grant budget[9] was split into six groups, one for each of the EL levels and the four RSP tiers for Leadership (LT1–LT4). From the original ranked list of final scores, separate ranked lists were prepared for EL1, EL2 and L applications from men and women. Funding outcomes were then generated by funding applications in descending order of final scores until the total funded amount was as close as possible to the corresponding MREA allocation for the respective EL category or RSP tier for both men and women.[10]

Table 6. Option 4: Equal funding – Investigator Grant funding outcomes (2019–2021 pooled)

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	40/68 (58.8%)	14 (20.6%)	$99,879,508 ($34,347,729)	90/268 (33.6%)	-22 (-8.2%)	$214,416,992 (-$56,973,629)
L2	50/204 (24.5%)	13 (6.4%)	$124,875,594 ($41,726,634)	41/383 (10.7%)	-18 (-4.7%)	$84,336,155 (-$43,384,163)
L1	75/537 (14%)	28 (5.2%)	$170,208,797 ($72,339,162)	41/729 (5.6%)	-18 (-2.5%)	$97,090,563 (-$40,692,012)
Leadership (L1–L3)	165/809 (20.4%)	55 (6.8%)	$394,963,899 ($148,413,526)	172/1380 (12.5%)	-58 (-4.2%)	$395,843,711 (-$141,049,805)
EL2	64/708 (9%)	-2 (-0.3%)	$90,270,646 (-$2,655,874)	66/612 (10.8%)	-3 (-0.5%)	$93,598,822 (-$4,145,355)
EL1	126/1023 (12.3%)	-11 (-1.1%)	$77,005,009 (-$6,642,058)	133/798 (16.7%)	10 (1.3%)	$79,981,598 ($6,063,604)
Total	**355/2540 (14%)**	**42 (1.7%)**	**$562,239,554 ($139,115,593)**	**371/2790 (13.3%)**	**-51 (-1.8%)**	**$569,424,131 (-$139,131,555)**

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9 Excluding targeted funding and the proportion of SP funding that was used to support Indigenous CIAs.
10 Grants that were originally awarded in 2019, 2020 and 2021 to Indigenous CIAs using SP funding were preserved in the models. Additional applications were also 'funded' in the models to match any targeted funding applied in specific Investigator Grant rounds and to ensure that the models matched the total amount funded in each round as closely as possible.

Figure 9. Option 4: Equal funding – Actual versus modelled numbers of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)

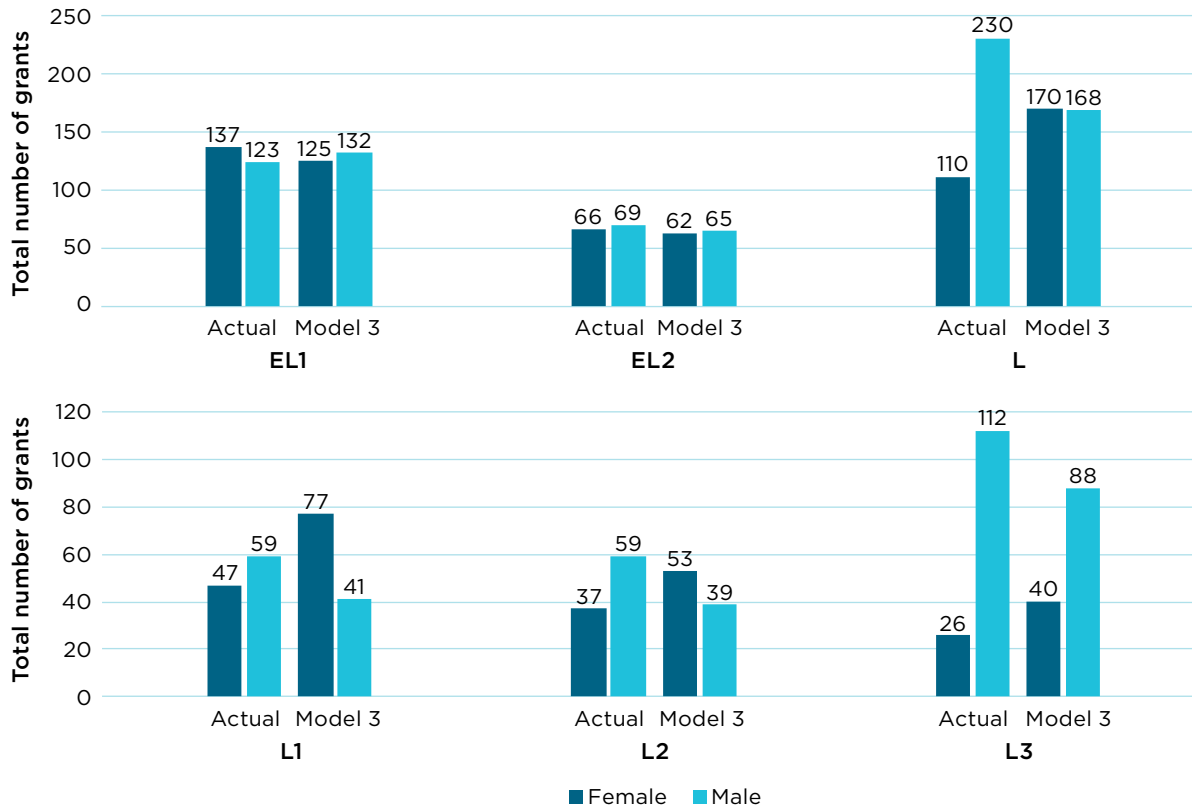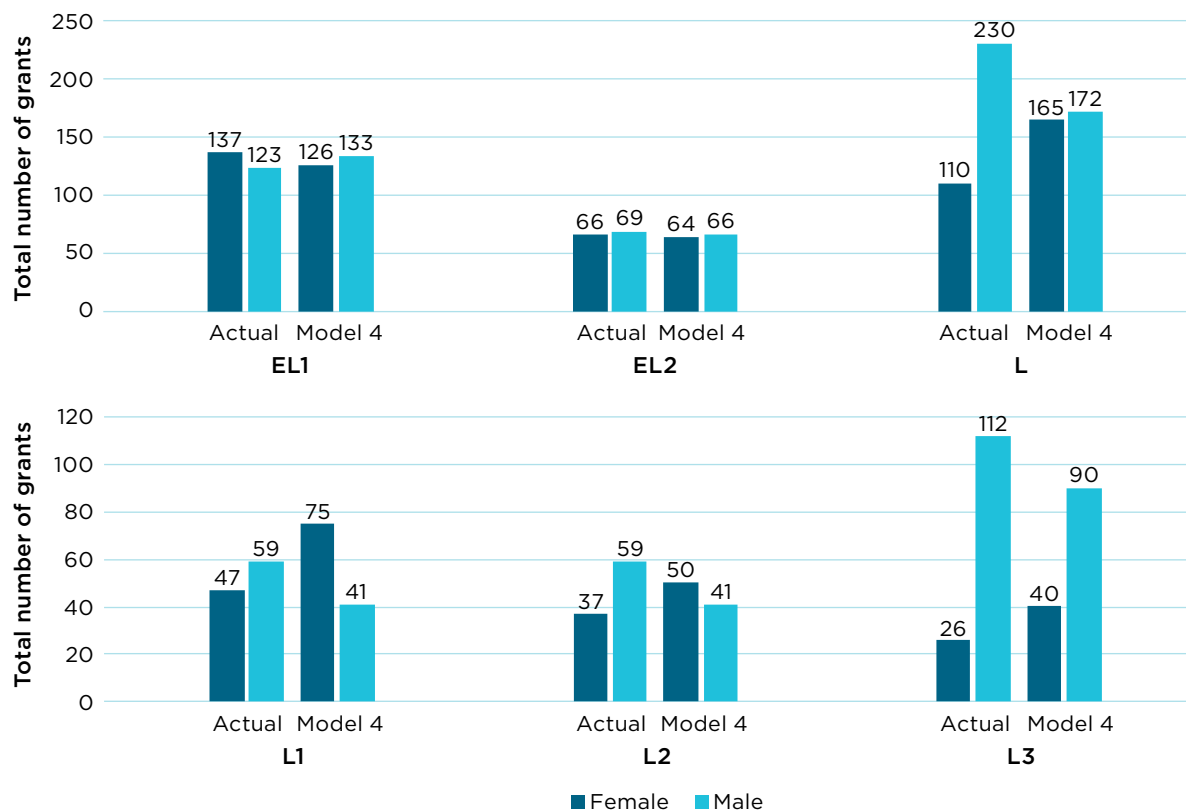Figure 10. Option 4: Equal funding – Actual versus modelled total funding of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
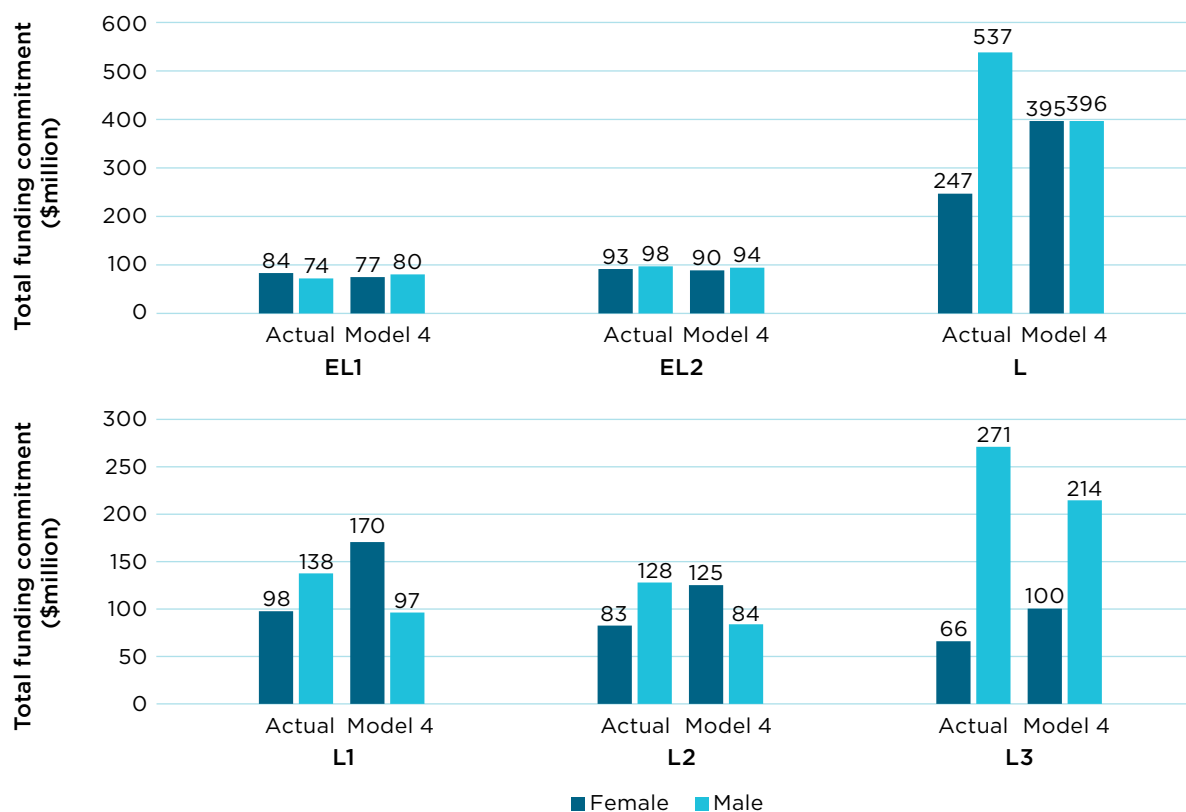
Key findings for Option 4: Award equal total funding by gender

- The outcomes under Options 3 and 4 were similar.
- Under Option 4, women and men were awarded similar numbers of grants and total funding[11] across the three categories (EL1, EL2 and L).
- Option 4 markedly increased the number of grants and total funding for women in the Leadership category but reduced them in the Emerging Leadership categories. The latter reductions occurred because some of the structural priority funding used in practice to fund women was allocated to men in this model.
- Within the Leadership category, women received more grants and total funding than men at L1 and L2. The model was unable to resolve the large gender difference in outcomes at the L3 level because of the much larger application numbers from men.
- Option 4 produced a higher funded rate for women than men overall. Funded rates were lower for women than men at EL1 and EL2, reflecting their higher application numbers, but substantially higher at every Leadership level.

Comparison of the four models

- No model can achieve equal funded rates,[12] equal numbers of grants and equal total funding for women and men at the same time.
- Within a fixed budget, any increase in funding for women comes at the expense of funding for men.
- Neither model with 20% SP funding (Options 1 and 2) achieved equal grant numbers or equal total funding for men and women across all categories. There was a sizable disparity in the number of grants and total funding between women and men at the Leadership level that was not seen at EL1 and EL2 where both the actual and modelled outcomes were much closer for women and men.
- Option 3 (equal grant number) and Option 4 (equal total funding) both achieved similar numbers of grants and total funding for women and men across the three categories.
- Outcomes under Options 3 and 4 were similar because grant sizes were similar for women and men within each EL category and each RSP tier in the Leadership category.
- Funding cut-offs were generally lower for women than men under each option. For all options, funding cut-offs remained within the 'excellent' and 'outstanding' score categories.

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11   The model aimed to produce the best result that is closest to the overall Investigator Grant budget in each year, therefore strictly equal funding between genders might not be achieved.

12   Equalised funding rates were not a specific objective of any of the options, primarily because funded rates are determined by the number of applications, which can change significantly from year to year.

Figure 11. All options – Actual versus modelled numbers of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
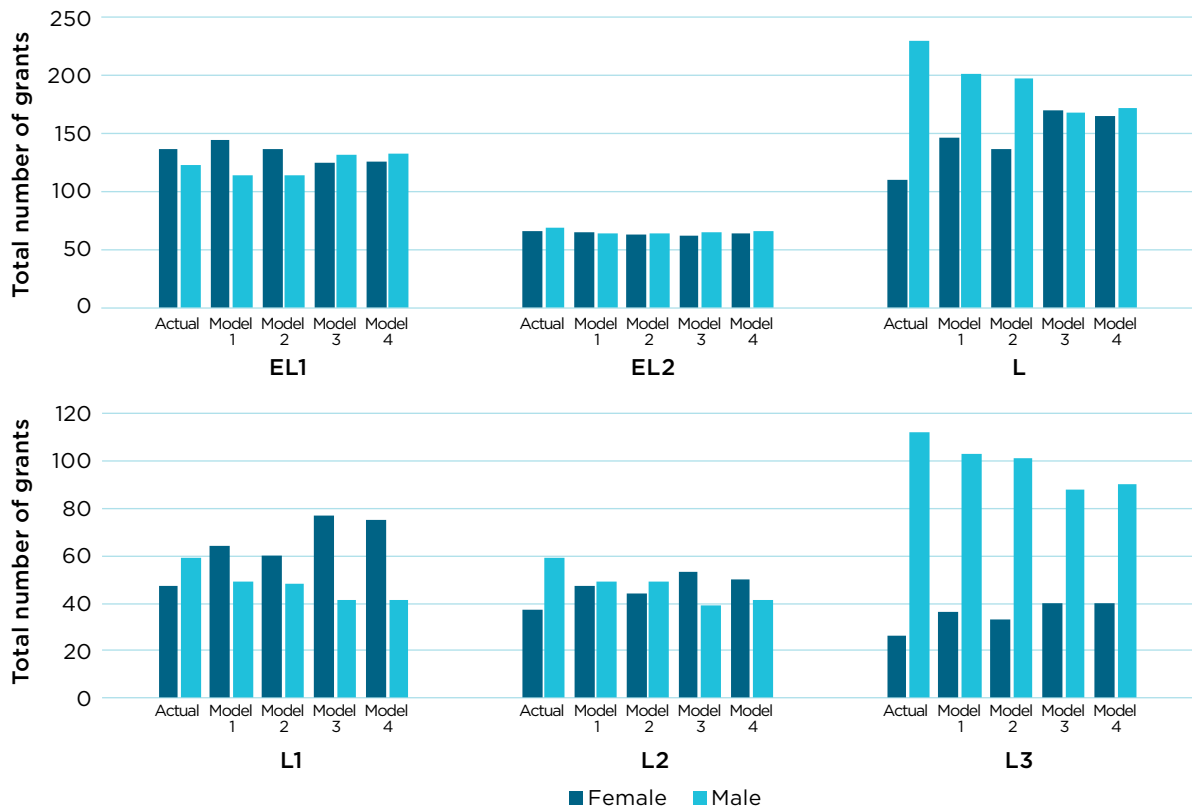
Figure 12. All options – Actual versus modelled total funding of Investigator Grants by category (upper panel) and Leadership level (lower panel) (2019–2021 pooled)
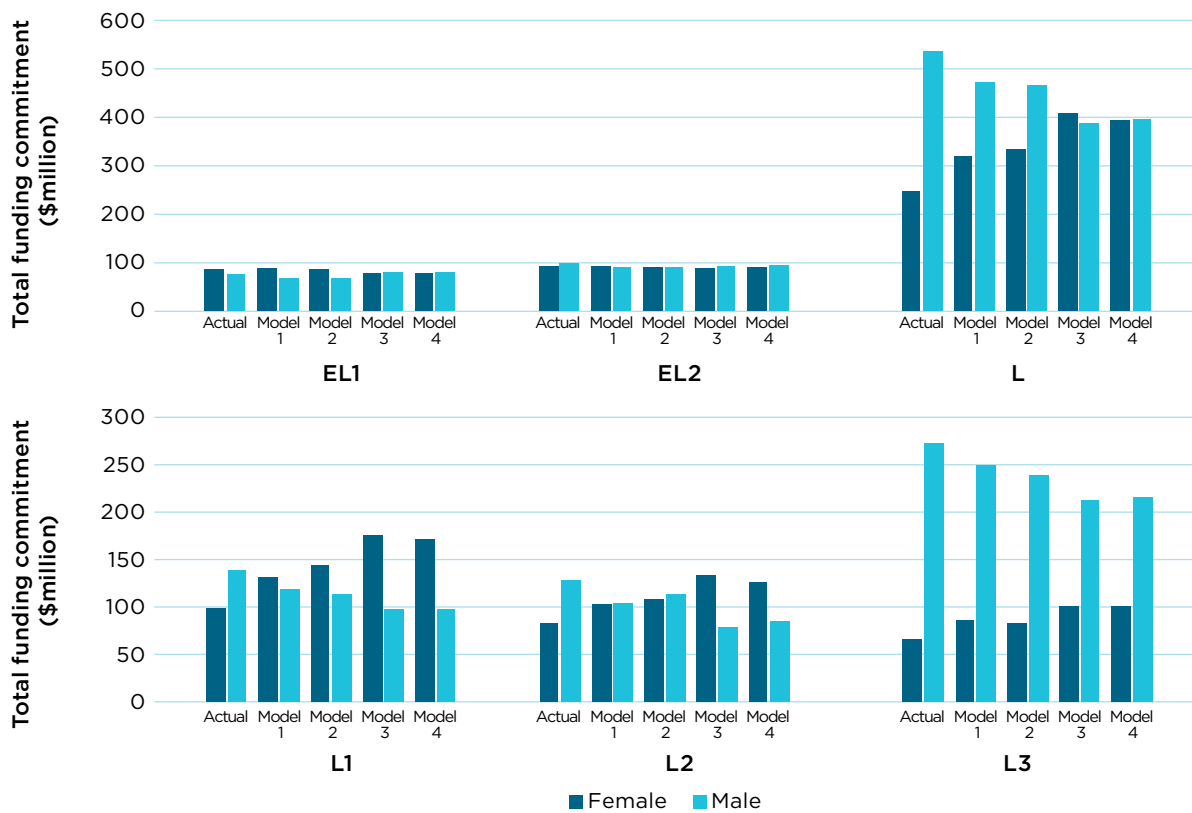
The effect of each option on funding cut-offs (lowest funded scores) for women and men is shown below in Table 7. Options 1 and 2 tended to lower the funding cut-off for women at L and EL1 (in the range of 0.010–0.154) and had no effect or increased the funding cut-off for women at EL2 (in the range of 0.000–0.014). These options invariably raised the funding cut-off for men (in the range of 0.006–0.066).

The effects of Options 3 and 4 on funding cut-offs were variable for women and men across categories but, in the Leadership category, they consistently lowered cut-offs for women (in the range 0.110–0.262) and raised them for men (in the range of 0.066–0.170).

For all options, cut-off scores were higher than 5.0 (category 5, 'excellent') and, in most cases, higher than 5.5 (category 6, 'outstanding') (data not shown).

Table 7. Difference in lowest funded score for each option compared with actual outcome by gender[13]

Year	Category	Difference in lowest funded score between actual and modelled outcomes							
		Option 1		Option 2		Option 3		Option 4	
		Female	Male	Female	Male	Female	Male	Female	Male
2019	L	-0.154	0.044	-0.132	0.044	-0.262	0.170	-0.228	0.114
	EL2	0.014	0.036	0.014	0.036	0.000	0.062	-0.008	0.067
	EL1	-0.036	0.066	-0.004	0.066	0.014	0.000	0.014	-0.020
2020	L	-0.096	0.046	-0.074	0.046	-0.114	0.066	-0.114	0.064
	EL2	0.000	0.006	0.008	0.006	0.000	0.012	0.000	0.012
	EL1	-0.010	0.022	0.018	0.022	0.062	-0.058	0.062	-0.056
2021	L	-0.070	0.042	-0.042	0.048	-0.128	0.126	-0.110	0.126
	EL2	0.000	0.032	0.000	0.032	0.082	0.000	0.020	-0.070
	EL1	-0.026	0.032	-0.022	0.032	0.054	-0.046	0.042	-0.054

13   For female or male applicants in each category, the lowest funded score that was actually awarded using baseline funding (including additional funding to support Early and Mid-Career Resarchers (EMCRs) in 2021) and gender structural priority funding was subtracted from the lowest funded score for each option. Grants awarded with Indigenous SP funding or for dementia were excluded from this table.

Inclusion of non-binary people in the proposed options

Gender non-conforming people who do not identify as either male or female (non-binary) are more likely to be discriminated against in the workplace and to suffer harassment and other abuse.[14] In a 2018 national survey on sexual harassment in Australia's workplaces, the Australian Human Rights Commission found that, while "the number of respondents who identified as non-binary or as a gender other than male or female was small (n=43)", it was clear that "people who identify in this way were also very likely (89%) to have experienced sexual harassment in their lifetime."[15] It is therefore highly likely that non-binary people in the research workforce, like women, have been affected by systemic disadvantage. NHMRC is therefore proposing to include non-binary Chief Investigators A (CIAs) in any intervention to reach gender equity in the Investigator Grant scheme.

As a first step, NHMRC is implementing changes to how it collects gender information in its grant management system, Sapphire, to give researchers the option to self-identify as 'non-binary', or to specify a different term, consistent with the gender variable in the ABS Standard for Sex, Gender, Variation of Sex Characteristics and Sexual Orientation Variables, 2020. Further information on key definitions and changes to the collection of gender information is provided in Appendix C.

There is no obvious basis on which to decide what proportion of funding would constitute equity for non-binary researchers because the number of people who identify as non-binary in the health and medical research workforce is unknown. As a result, NHMRC suggests considering Investigator Grant applications from non-binary CIAs *with* female CIAs. This approach aims to recognise that both women and non-binary researchers are likely to have experienced systemic disadvantage in the workforce, without prioritising one over the other. The proposed consideration of all possible gender responses within the four options is summarised in Table 8 below.

Options 1 and 2: Structural priority funding

Structural priority funding is applied in select NHMRC grant schemes to allow additional female CIAs to be funded to address gender inequities in NHMRC funding outcomes. If we were to implement Option 1 or 2, then we propose including non-binary researchers in an expanded structural priority, 'Gender equity: Women and non-binary researchers'.

This approach means that a non-binary CIA would **not be funded above** a higher scoring female CIA as structural priority funding would be awarded down the ranked list treating women and non-binary researchers equally until the structural priority funding allocation is exhausted. This approach can also be applied to other grant schemes that apply structural priority funding to recognise non-binary applicants.

Options 3 and 4: Award equal grant numbers or equal total funding

These options create separate competitions for women and men in the Investigator Grant scheme, where one aims to award equal numbers of grants and the other equal funding to women and men. If we were to implement either of these options, then it is proposed that non-binary researchers (CIAs) be considered alongside female CIAs. Individuals who prefer not to respond, or leave the field blank, would be considered alongside male CIAs.

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14 https://theconversation.com/half-of-transgender-and-non-binary-people-hide-their-identity-at-work-in-fear-of-discrimination-heres-how-you-can-help-115523, 30 May 2019

15 Australian Human Rights Commission (2018) *Everyone's business: Fourth national survey on sexual harassment in Australia's workplaces*, p.21. Non-binary respondents accounted for around 0.4% of more than 10,000 respondents.

Table 8. Proposed consideration of each gender response (or nil response) within each Option

Gender Response[1]	ABS Definition	NHMRC Code[2]	Proposed consideration in each Gender Equity Option
Man or male	Persons who described their gender as man or male	Man	Options 1 and 2– Not eligible for structural priority funding
			Options 3 and 4 – Male and other CIAs group
Woman or female	Persons who described their gender as woman or female	Woman	Options 1 and 2 – Eligible for gender equity structural priority funding
			Options 3 and 4 – Women and non-binary CIAs group
Non-binary	Persons who described their gender as non-binary	Non-binary[4]	Options 1 and 2 – Eligible for gender equity structural priority funding
Different term[3]	Persons who described their gender as a term other than man/male, woman/female or non-binary[3]		Options 3 and 4 – Women and non-binary CIAs group
Prefer not to answer	Persons who preferred not to respond on how they describe their gender	Not stated[6]	Options 1 and 2 – Not eligible for structural priority funding
Nil response[5]	N/A		Options 3 and 4 – Male and other CIAs group

Notes

1. The gender responses are from *ABS Standard for Sex, Gender, Variation of Sex Characteristics and Sexual Orientation Variables, 2020* (ABS Standard), which will form the basis of collecting gender information in Sapphire researcher profiles from January 2023 or earlier (refer to Appendix C for more information).

2. NHMRC Codes reflect the ABS Standard output categories for gender.

3. Examples of other terms that may be used are genderqueer, gender non-conforming, agender, and bigender.[16]

4. Under the ABS Standard responses to 'Different term' are included in the output category 'Non-binary'.

5. In NHMRC's grant management system, Sapphire, the gender response field is optional and, as a result, a nil response is possible, which will be coded as 'Not stated'.

6. Under the ABS Standard responses to 'Prefer not to answer' and inadequately described responses are included in the output category 'Not stated'.

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16 *Best practices for non-binary inclusion in the workplace, 2018.* https://outandequal.org/wp-content/uploads/2018/11/OE-Non-Binary-Best-Practices.pdf

Conclusions and next steps

This Discussion Paper presents four options to offset the systemic disadvantage faced by women in health and medical research, as reflected in the attrition of female applicants with seniority in the Investigator Grant scheme.

The modelling presented here suggests that each option would go some way to meeting this goal – Options 1 and 2 by extending the existing structural priority funding initiative and Options 3 and 4 as potential 'breakthrough' initiatives that intentionally equalise grant numbers or total funding awarded to women and men across the scheme. In all cases, the lowest funded scores for women and men would remain in the highly meritorious score range of 'excellent' and 'outstanding'.

Interventions such as these would rebalance funding outcomes for women and men, particularly in the Leadership category of the scheme. Within a fixed budget, however, any increase in funding for women would come at the expense of funding for men.

One outcome of this rebalancing would be that significantly more women would receive the support they need to pursue their research goals and progress their careers. This alone would help reduce the attrition of women from the sector.

Such a change to the Investigator Grant scheme would be important but cannot solve the larger problem of systemic disadvantage. Progress towards gender equity in the health and medical research sector depends on action at every level of the system, particularly in the institutions that seek to recruit, retain and reward researchers. NHMRC looks forward to working with its administering institutions and others in the sector to ensure that all researchers have the opportunity to succeed and to contribute to the improvement of health and wellbeing through their research.

This Discussion Paper is intended to support an open discussion with the research sector on options to reach gender equity in NHMRC's Investigator Grant scheme. NHMRC has not yet decided whether to introduce changes for 2023 or, if so, which path to take. The outcomes of this engagement with the sector will determine the approach to the 2023 Investigator Grant round for funding commencing from 1 January 2024.

We recognise that there are other ideas about how to achieve gender equity in NHMRC funding outcomes and in the health and medical research sector more broadly. The NHMRC CEO communique on Gender disparities in NHMRC's Investigator Grant Scheme released in February 2022 discusses a range of possible initiatives to address gender disparities in this scheme. The current stage of the consultation (July–August 2022) is focused on the four options presented here.

Before deciding whether to implement any new intervention, we will need to ensure that the intervention is justified as a special measure under the *Sex Discrimination Act 1984*, if required. Special measures should be time-limited and monitored to determine whether they are meeting the intended goal. It is expected they will be removed once substantive equality has been achieved and can be sustained without the intervention. Plans for monitoring and evaluation will be key aspects of the design of any new intervention.

NHMRC is also discussing its gender equity initiatives with other Australian Government agencies. The Investigator Grant guidelines for the 2023 round must be assessed by the Department of Finance and approved by the Minister for Health and Aged Care before they can be released. The guidelines are expected to be released in time for the opening of the round in January 2023. However, an earlier announcement of NHMRC's intentions for the 2023 round will be made if possible.

We also recognise that there are other issues that the research sector may be keen to discuss about the Investigator Grant scheme or about NHMRC funding. While we welcome broader discussion in general, this Discussion Paper is deliberately focused and the following issues, while important, have not been analysed or modelled here:

- Equalising funded rates for men and women in the Investigator Grant schemeChanging the distribution of funding across the EL and L categories
- Running separate L1, L2 and L3 competitions with their own budgets
- Increasing the total funding available through the Investigator Grant scheme
- Changes to how RSP tiers are calculated or applied, other than that modelled in Option 2
- Requiring institutions to submit equal numbers of applications for women and men
- Changes to the assessment of Investigator Grant applications, such as the assessment criteria or peer review processes
- Distribution of funding between Broad Research Areas (Basic Science, Clinical Medicine and Science, Health Services Research, Public Health).

This stage of consultation has been timed to enable consideration of changes in the 2023 Investigator Grant round and, for this reason, we are keen to hear your views at the open forums in early August 2022. We will, however, continue to discuss gender equity with the research sector for as long as is needed to achieve gender equity in NHMRC funding outcomes.

Appendices

Appendix A – Detailed methods for modelling outcomes

Detailed method for Option 1: 20% SP funding

1. Determine the amount of MREA funding to be distributed.

    a. Identify each year's MREA allocation for the scheme including all structural priority (SP) funds. The total MREA allocation was $365 million for 2019 and 2020 and $400 million for 2021 with additional funds.

    b. The actual split of the total MREA allocation of $365 million was $335 million for baseline and $30 million for SP funding. Option 1 converted 20% of the total SP allocation (20% of $365 million is $73 million) leaving $292 million as the baseline budget.

    c. In 2021, there were three additional funding allocations available that have been added into the model:

        i. additional $11 million SP funding, taking the total amount available for SP in 2021 to $84 million in this model

        ii. additional $15 million to support EMCRs in response to the impacts of COVID-19

        iii. additional $9 million to support Emerging Leadership researchers in the field of dementia research.

    The total budget allocations used in this model are shown below:

Funding category	2019 and 2020		2021	
	Actual	20% SP model	Actual	20% SP model
Baseline	$335 million	$292 million	$335 million	$292 million
SP total	$30 million	$73 million	$41 million	$84 million
EMCRs	-	-	$15 million	
Dementia research	-	-	$9 million	
Total	$365 million	$365 million	$400 million	

2. Use the relative proportions for each RSP tier/EL level as were used to develop the funding recommendations for the actual outcomes multiplied by the new baseline MREA allocation of $292 million. These figures were used as the target MREA allocation for each RSP tier or EL level.

3. Prepare separate ranked lists in descending final score order for EL1, EL2 and Leadership applications.

4. Fund applications using the baseline budget:

    a. Applications were funded in decreasing final score order until the available MREA allocation was consumed for each RSP tier or EL level. In some cases, slightly more than the indicative allocation was used in the model because this represented the closest result to the target allocation within each tier or level.

    b. For Leadership applications, RSP tiers were re-assigned to applications based on their final scores and the final budget was calculated based on the new RSP tier.

5. SP funding process:

    a. For the 2021 round, EMCR funding was allocated after the baseline funding and in accordance with the actual process used (i.e. funding an equal number of EL1 and

EL2 applications and then if possible using any remaining funds to support an extra EL1 application) until the $15 million was consumed.

b. Aboriginal and Torres Strait Islander CIAs were funded in accordance with the actual process used (funding the same applications as were actually funded with SP funding for simplicity).

c. The remaining SP funding ($73 million in 2019 and 2020 or $84 million in 2021 less the SP Indigenous researcher funding used in b) was then used to fund female CIAs in the ratio 3:1:2 based on the number of grants for Leadership (using the smallest RSP package), EL2 and EL1 in descending final score order.

d. For the 2021 round, EL applications that focused on dementia research were funded in accordance with the actual process used (funding the same applications as were actually funded for simplicity).

Detailed method for Option 2: 20% SP funding with a single Leadership RSP ($400,000)

1. Determine the amount of MREA funding to be distributed using the same method as described above for Option 1.

2. Use the relative proportions for each RSP tier/EL level that were used to develop the funding recommendations for the actual outcomes multiplied by the new baseline MREA allocation of $292 million. These figures were used as the target MREA allocation for each RSP tier or EL level.

3. Prepare separate ranked lists in descending final score order for EL1, EL2 and Leadership applications.

4. Fund applications in decreasing final score order until the available MREA allocation is consumed for each RSP tier or level. In some cases, slightly more than the indicative allocation was used in the model because this represented the closest result to the target allocation within each tier or level. All Leadership applications were assigned a single RSP of $400,000.

5. SP funding process:

a. For the 2021 round, EMCR funding was allocated after the baseline funding and in accordance with the actual process used (i.e. funding an equal number of EL1 and EL2 applications and then if possible using any remaining funds to support an extra EL1 application) until the $15 million was consumed.

b. Aboriginal and Torres Strait Islander CIAs were funded in accordance with the actual process used (funding the same applications as were actually funded with SP funding for simplicity).

c. The remaining SP funding ($73 million in 2019 and 2020 or $84 million in 2021 less the SP Indigenous funding used in b) was then used to fund female CIAs in the ratio 3:1:2 based on the number of grants for Leadership, EL2 and EL1 in descending final score order.

d. For the 2021 round, EL applications that focused on dementia research were funded in accordance with the actual process used (funding the same applications as were actually funded for simplicity).

Detailed method for Option 3: Equal number of grants by CIA gender

1. Determine the amount of MREA funding to be distributed.

a. As described above for Option 1, the total MREA allocation was $365 million for 2019 and 2020 and $400 million for 2021 with additional funds.

b. Safeguard the SP funds needed to ensure that applications from Aboriginal and Torres Strait Islander researchers that were successful in the actual outcome were also funded in the model. For example, in 2021 the sum of $6.8 million in SP funding was used to support Indigenous researchers and this amount was safeguarded in the model.

c. Combine the remaining SP funds with the actual baseline MREA allocation ($335 million) to calculate a new baseline MREA allocation. This new allocation was used for all subsequent steps.

2. Calculate new MREA allocations for each RSP tier and EL level.

a. Use the relative proportions for each RSP tier and EL level as per the actual outcomes multiplied by the new baseline MREA allocation. These figures were used as the target MREA allocation for each RSP tier or EL level.

3. Prepare separate ranked lists in descending order of final score for EL1, EL2 and Leadership applications for women and men (excluding the previously safeguarded applications). Applications where the CIA gender was not stated or non-binary have been excluded from the modelling for simplicity.

4. Determine which applications to fund.

a. Fund pairs of applications (i.e. one woman and one man from their separate ranked lists) in descending final score order until the total funded amount is as close as possible but less than the MREA allocation calculated in step 2. Leadership applications were assigned an RSP tier based on their final score using the process actually used in the scheme.

b. Determine whether funding no more applications, one extra application for either a woman or a man, or one more pair of applications (one women and one man) would produce a result that is closer to the MREA allocation. Implement whichever option is the closest.

5. Fund additional SP applications.

a. Use the $15 million available in 2021 for EMCRs to fund equal numbers of EL1 and EL2 applications, with any remaining used to fund an additional EL1 application (i.e. the actual process used).

b. Use the $9 million available in 2021 for EL applications in dementia research to fund the same applications as were actually funded.

c. Fund the previously safeguarded Indigenous researcher applications.

Detailed method for Option 4: Equal total funding by CIA gender

1. Determine the amount of MREA funding to be distributed as described above for Option 3.

2. Calculate new MREA allocations for each RSP tier/EL level by gender.

a. Use the relative proportions for each RSP tier/EL level as per the actual outcomes multiplied by the new baseline MREA allocation. These figures were used as the target MREA allocation for each RSP tier or EL level.

b. Split the indicative MREA allocations within each RSP tier and EL level in half to run separate competitions for women and men.

3. Prepare separate ranked lists in descending order of final score for EL1, EL2 and Leadership applications for women and men (excluding the previously safeguarded applications). Applications where the CIA gender was not stated or non-binary have been excluded from the modelling for simplicity.

4. Determine which applications to fund.

a. Fund applications in descending order of final scores until the available MREA allocation is consumed for each RSP tier or EL level for each gender. Leadership applications were assigned an RSP tier based on their final score using the process actually used in the scheme.

5. Fund any additional SP applications as described for Option 3.

Appendix B – Detailed results by year: 2019, 2020 and 2021

This appendix tabulates the actual outcomes and results for each of the four models for each year. The pooled results across all three years are also shown.

2019 Investigator Grant round

Table 9. Actual outcomes in 2019

Level	Female		Male	
	Model Grants/Apps (Funded Rate)	MREA allocation	Model Grants/Apps (Funded Rate)	MREA allocation
L3	5/17 (29.4%)	$11,261,273	37/75 (49.3%)	$81,980,715
L2	13/60 (21.7%)	$27,387,942	27/134 (20.1%)	$56,249,089
L1	15/194 (7.7%)	$30,083,242	20/284 (7%)	$47,430,901
Leadership (L1–L3)	33/271 (12.2%)	$68,732,458	84/493 (17%)	$185,660,705
EL2	21/245 (8.6%)	$28,468,535	22/227 (9.7%)	$31,301,570
EL1	43/340 (12.6%)	$26,194,982	42/271 (15.5%)	$24,875,458
Total	**97/856 (11.3%)**	**$123,395,974**	**148/991 (14.9%)**	**$241,837,733**

Table 10. Modelled funding outcomes for Option 1 in 2019

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	9/17 (52.9%)	4 (23.5%)	$18,691,058 ($7,429,785)	34/75 (45.3%)	-3 (-4%)	$74,829,971 (-$7,150,744)
L2	14/60 (23.3%)	1 (1.7%)	$28,986,582 ($1,598,640)	24/134 (17.9%)	-3 (-2.2%)	$49,550,449 (-$6,698,640)
L1	23/194 (11.9%)	8 (4.1%)	$45,533,950 ($15,450,708)	15/284 (5.3%)	-5 (-1.8%)	$37,957,796 (-$9,473,105)
Leadership (L1–L3)	46/271 (17%)	13 (4.8%)	$93,211,591 ($24,479,133)	73/493 (14.8%)	-11 (-2.2%)	$162,338,216 (-$23,322,489)
EL2	20/245 (8.2%)	-1 (-0.4%)	$27,024,947 (-$1,443,588)	21/227 (9.3%)	-1 (-0.4%)	$29,857,982 (-$1,443,588)
EL1	47/340 (13.8%)	4 (1.2%)	$27,905,382 ($1,710,400)	38/271 (14%)	-4 (-1.5%)	$22,536,333 (-$2,339,125)
Total	**113/856 (13.2%)**	**16 (1.9%)**	**$148,141,919 ($24,745,945)**	**132/991 (13.3%)**	**-16 (-1.6%)**	**$214,732,531 (-$27,105,202)**

Table 11. Modelled funding outcomes for Option 2 in 2019

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	8/17 (47.1%)	3 (17.6%)	$18,916,058 ($7,654,785)	33/75 (44%)	-4 (-5.3%)	$70,448,787 (-$11,531,928)
L2	14/60 (23.3%)	1 (1.7%)	$32,034,459 ($4,646,517)	24/134 (17.9%)	-3 (-2.2%)	$54,288,051 (-$1,961,037)
L1	21/194 (10.8%)	6 (3.1%)	$51,087,694 ($21,004,451)	15/284 (5.3%)	-5 (-1.8%)	$34,036,895 (-$13,394,007)
Leadership (L1–L3)	43/271 (15.9%)	10 (3.7%)	$102,038,211 ($33,305,753)	72/493 (14.6%)	-12 (-2.4%)	$158,773,733 (-$26,886,972)
EL2	19/245 (7.8%)	-2 (-0.8%)	$25,811,602 (-$2,656,933)	21/227 (9.3%)	-1 (-0.4%)	$29,857,982 (-$1,443,588)
EL1	44/340 (12.9%)	1 (0.3%)	$26,717,807 ($522,825)	38/271 (14%)	-4 (-1.5%)	$22,536,333 (-$2,339,125)
Total	**106/856 (12.4%)**	**9 (1.1%)**	**$154,567,619 ($31,171,645)**	**131/991 (13.2%)**	**-17 (-1.7%)**	**$211,168,048 (-$30,669,685)**

Table 12. Modelled funding outcomes for Option 3 in 2019

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model - Actual Grants (Funded Rate)	Model MREA allocation (Difference Model - Actual)	Model Grants/Apps (Funded Rate)	Difference Model - Actual Grants (Funded Rate)	Model MREA allocation (Difference Model - Actual)
L3	10/17 (58.8%)	5 (29.4%)	$22,135,031 ($10,873,758)	27/75 (36%)	-10 (-13.3%)	$56,689,812 (-$25,290,903)
L2	18/60 (30%)	5 (8.3%)	$46,234,291 ($18,846,349)	16/134 (11.9%)	-11 (-8.2%)	$29,916,888 (-$26,332,200)
L1	31/194 (16%)	16 (8.2%)	$69,299,071 ($39,215,829)	14/284 (4.9%)	-6 (-2.1%)	$33,029,766 (-$14,401,135)
Leadership (L1–L3)	59/271 (21.8%)	26 (9.6%)	$137,668,393 ($68,935,935)	57/493 (11.6%)	-27 (-5.5%)	$119,636,466 (-$66,024,238)
EL2	21/245 (8.6%)	0 (0%)	$28,468,535 ($0)	20/227 (8.8%)	-2 (-0.9%)	$28,408,642 (-$2,892,928)
EL1	42/340 (12.4%)	-1 (-0.3%)	$25,555,232 ($639,750)	42/271 (15.5%)	0 (0%)	$24,875,458 ($0)
Total	**122/856 (14.3%)**	**25 (2.9%)**	**$191,692,159 ($68,296,185)**	**119/991 (12%)**	**-29 (-2.9%)**	**$172,920,567 (-$68,917,166)**

Table 13. Modelled funding outcomes for Option 4 in 2019

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	10/17 (58.8%)	5 (29.4%)	$22,135,031 ($10,873,758)	28/75 (37.3%)	-9 (-12%)	$58,791,407 (-$23,189,308)
L2	16/60 (26.7%)	3 (5%)	$41,033,862 ($13,645,920)	18/134 (13.4%)	-9 (-6.7%)	$35,564,168 (-$20,684,920)
L1	30/194 (15.5%)	15 (7.7%)	$66,316,647 ($36,233,405)	14/284 (4.9%)	-6 (-2.1%)	$33,454,766 (-$13,976,135)
Leadership (L1–L3)	56/271 (20.7%)	23 (8.5%)	$129,485,540 ($60,753,083)	60/493 (12.2%)	-24 (-4.9%)	$127,810,341 (-$57,850,363)
EL2	22/245 (9%)	1 (0.4%)	$30,023,020 ($1,554,485)	19/227 (8.4%)	-3 (-1.3%)	$27,077,185 (-$4,224,385)
EL1	42/340 (12.4%)	-1 (-0.3%)	$25,555,232 (-$639,750)	43/271 (15.9%)	1 (0.4%)	$25,465,208 ($589,750)
Total	**120/856 (14%)**	**23 (2.7%)**	**$185,063,792 ($61,667,818)**	**122/991 (12.3%)**	**-26 (-2.6%)**	**$180,352,735 (-$61,484,998)**

2020 Investigator Grant round

Table 14. Actual outcomes in 2020

Level	Female		Male	
	Model Grants/Apps (Funded Rate)	MREA allocation	Model Grants/Apps (Funded Rate)	MREA allocation
L3	8/19 (42.1%)	$19,858,084	37/73 (50.7%)	$89,097,988
L2	12/53 (22.6%)	$25,886,467	16/115 (13.9%)	$33,750,018
L1	22/188 (11.7%)	$46,974,397	20/270 (7.4%)	$45,937,717
Leadership (L1–L3)	42/260 (16.2%)	$92,718,948	73/458 (15.9%)	$168,785,723
EL2	18/215 (8.4%)	$25,407,406	21/176 (11.9%)	$30,074,269
EL1	46/359 (12.8%)	$27,766,975	37/300 (12.3%)	$22,721,824
Total	**106/834 (12.7%)**	**$145,893,330**	**131/934 (14%)**	**$221,581,815**

Table 15. Modelled funding outcomes for Option 1 in 2020

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	9/19 (47.4%)	1 (5.3%)	$22,272,299 ($2,414,215)	34/73 (46.6%)	-3 (-4.1%)	$80,538,186 (-$8,559,802)
L2	16/53 (30.2%)	4 (7.5%)	$32,472,801 ($6,586,333)	12/115 (10.4%)	-4 (-3.5%)	$24,230,042 (-$9,519,976)
L1	29/188 (15.4%)	7 (3.7%)	$60,308,429 ($13,334,032)	18/270 (6.7%)	-2 (-0.7%)	$41,605,387 (-$4,332,330)
Leadership (L1–L3)	54/260 (20.8%)	12 (4.6%)	$115,053,529 ($22,334,580)	64/458 (14%)	-9 (-2%)	$146,373,615 (-$22,412,108)
EL2	18/215 (8.4%)	0 (0%)	$25,407,406 ($0)	20/176 (11.4%)	-1 (-0.6%)	$28,736,919 (-$1,337,350)
EL1	47/359 (13.1%)	1 (0.3%)	$28,412,180 ($645,205)	36/300 (12%)	-1 (-0.3%)	$22,076,619 (-$645,205)
Total	**119/834 (14.3%)**	**13 (1.6%)**	**$168,873,115 ($22,979,785)**	**120/934 (12.8%)**	**-11 (-1.2%)**	**$197,187,152 (-$24,394,663)**

Table 16. Modelled funding outcomes for Option 2 in 2020

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	9/19 (47.4%)	1 (5.3%)	$22,622,299 ($2,764,215)	34/73 (46.6%)	-3 (-4.1%)	$80,288,186 (-$8,809,802)
L2	14/53 (26.4%)	2 (3.8%)	$31,480,275 ($5,593,808)	12/115 (10.4%)	-4 (-3.5%)	$26,180,042 (-$7,569,976)
L1	28/188 (14.9%)	6 (3.2%)	$65,293,577 ($18,319,179)	17/270 (6.3%)	-3 (-1.1%)	$40,446,345 (-$5,491,372)
Leadership (L1–L3)	51/260 (19.6%)	9 (3.5%)	$119,396,150 ($26,677,202)	63/458 (13.8%)	-10 (-2.2%)	$146,914,573 (-$21,871,150)
EL2	17/215 (7.9%)	-1 (-0.5%)	$23,872,884 (-$1,534,523)	20/176 (11.4%)	-1 (-0.6%)	$28,736,919 (-$1,337,350)
EL1	44/359 (12.3%)	-2 (-0.6%)	$26,634,647 (-$1,132,328)	36/300 (12%)	-1 (-0.3%)	$22,076,619 (-$645,205)
Total	**112/834 (13.4%)**	**6 (0.7%)**	**$169,903,681 ($24,010,351)**	**119/934 (12.7%)**	**-12 (-1.3%)**	**$197,728,110 (-$23,853,705)**

Table 17. Modelled funding outcomes for Option 3 in 2020

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	10/19 (52.6%)	2 (10.5%)	$25,861,514 ($6,003,430)	31/73 (42.5%)	-6 (-8.2%)	$74,298,971 (-$14,799,017)
L2	16/53 (30.2%)	4 (7.5%)	$35,477,184 ($9,590,717)	12/115 (10.4%)	-4 (-3.5%)	$23,817,474 (-$9,932,544)
L1	31/188 (16.5%)	9 (4.8%)	$71,160,645 ($24,186,248)	14/270 (5.2%)	-6 (-2.2%)	$32,726,981 (-$13,210,736)
Leadership (L1–L3)	57/260 (21.9%)	15 (5.8%)	$132,499,343 ($39,780,395)	57/458 (12.4%)	-16 (-3.5%)	$130,843,426 (-$37,942,297)
EL2	18/215 (8.4%)	0 (0%)	$25,407,406 ($0)	19/176 (10.8%)	-2 (-1.1%)	$27,287,119 (-$2,787,150)
EL1	40/359 (11.1%)	-6 (-1.7%)	$24,098,316 ($3,668,658)	42/300 (14%)	5 (1.7%)	$25,689,767 ($2,967,943)
Total	115/834 (13.8%)	9 (1.1%)	$182,005,066 ($36,111,736)	118/934 (12.6%)	-13 (-1.4%)	$183,820,311 (-$37,761,504)

Table 18. Modelled funding outcomes for Option 4 in 2020

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	10/19 (52.6%)	2 (10.5%)	$25,861,514 ($6,003,430)	32/73 (43.8%)	-5 (-6.8%)	$75,348,971 (-$13,749,017)
L2	16/53 (30.2%)	4 (7.5%)	$35,477,184 ($9,590,717)	12/115 (10.4%)	-4 (-3.5%)	$23,817,474 (-$9,932,544)
L1	31/188 (16.5%)	9 (4.8%)	$71,160,645 ($24,186,248)	14/270 (5.2%)	-6 (-2.2%)	$32,726,981 (-$13,210,736)
Leadership (L1–L3)	57/260 (21.9%)	15 (5.8%)	$132,499,343 ($39,780,395)	58/458 (12.7%)	-15 (-3.3%)	$131,893,426 (-$36,892,297)
EL2	18/215 (8.4%)	0 (0%)	$25,407,406 ($0)	19/176 (10.8%)	-2 (-1.1%)	$27,287,119 (-$2,787,150)
EL1	40/359 (11.1%)	-6 (-1.7%)	$24,098,316 (-$3,668,658)	41/300 (13.7%)	4 (1.3%)	$25,302,644 ($2,580,820)
Total	115/834 (13.8%)	9 (1.1%)	$182,005,066 ($36,111,736)	118/934 (12.6%)	-13 (-1.4%)	$184,483,188 (-$37,098,627)

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Table 19. Actual outcomes in 2021

Level	Female		Male	
	Model Grants/Apps (Funded Rate)	MREA allocation	Model Grants/Apps (Funded Rate)	MREA allocation
L3	13/32 (40.6%)	$34,412,422	38/120 (31.7%)	$100,311,919
L2	12/91 (13.2%)	$29,874,550	16/134 (11.9%)	$37,721,212
L1	10/155 (6.5%)	$20,811,995	19/175 (10.9%)	$44,413,957
Leadership (L1–L3)	35/278 (12.6%)	$85,098,967	73/429 (17%)	$182,447,088
EL2	27/248 (10.9%)	$39,050,579	26/209 (12.4%)	$36,368,338
EL1	48/324 (14.8%)	$29,685,111	44/227 (19.4%)	$26,320,712
Total	**110/850 (12.9%)**	**$153,834,657**	**143/865 (16.5%)**	**$245,136,138**

Table 20. Modelled funding outcomes for Option 1 in 2021

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	18/32 (56.3%)	5 (15.6%)	$44,143,306 ($9,730,884)	35/120 (29.2%)	-3 (-2.5%)	$93,509,904 (-$6,802,015)
L2	17/91 (18.7%)	5 (5.5%)	$41,075,208 ($11,200,658)	13/134 (9.7%)	-3 (-2.2%)	$30,224,653 (-$7,496,559)
L1	12/155 (7.7%)	2 (1.3%)	$25,309,105 ($4,497,110)	16/175 (9.1%)	-3 (-1.7%)	$37,955,348 (-$6,458,609)
Leadership (L1–L3)	47/278 (16.9%)	12 (4.3%)	$110,527,619 ($25,428,652)	64/429 (14.9%)	-9 (-2.1%)	$161,689,905 (-$20,757,183)
EL2	27/248 (10.9%)	0 (0%)	$39,050,580 ($1)	23/209 (11%)	-3 (-1.4%)	$32,250,851 (-$4,117,487)
EL1	51/324 (15.7%)	3 (0.9%)	$31,545,167 ($1,860,056)	40/227 (17.6%)	-4 (-1.8%)	$23,968,122 (-$2,352,590)
Total	**125/850 (14.7%)**	**15 (1.8%)**	**$181,123,366 ($27,288,710)**	**127/865 (14.7%)**	**-16 (-1.8%)**	**$217,908,878 (-$27,227,260)**

Table 21. Modelled funding outcomes for Option 2 in 2021

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	16/32 (50%)	3 (9.4%)	$41,847,721 ($7,435,300)	34/120 (28.3%)	-4 (-3.3%)	$87,668,369 (-$12,643,551)
L2	16/91 (17.6%)	4 (4.4%)	$43,357,011 ($13,482,460)	13/134 (9.7%)	-3 (-2.2%)	$32,999,653 (-$4,721,559)
L1	11/155 (7.1%)	1 (0.6%)	$27,385,550 ($6,573,555)	16/175 (9.1%)	-3 (-1.7%)	$39,280,348 (-$5,133,609)
Leadership (L1–L3)	43/278 (15.5%)	8 (2.9%)	$112,590,282 ($27,491,315)	63/429 (14.7%)	-10 (-2.3%)	$159,948,370 (-$22,498,719)
EL2	27/248 (10.9%)	0 (0%)	$39,050,580 ($1)	23/209 (11%)	-3 (-1.4%)	$32,250,851 (-$4,117,487)
EL1	49/324 (15.1%)	1 (0.3%)	$30,324,852 ($639,741)	40/227 (17.6%)	-4 (-1.8%)	$23,968,122 (-$2,352,590)
Total	**119/850 (14%)**	**9 (1.1%)**	**$181,965,713 ($28,131,057)**	**126/865 (14.6%)**	**-17 (-2%)**	**$216,167,342 (-$28,968,795)**

Table 22. Modelled funding outcomes for Option 3 in 2021

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	20/32 (62.5%)	7 (21.9%)	$52,782,963 ($18,370,542)	30/120 (25%)	-8 (-6.7%)	$80,526,615 (-$19,785,304)
L2	19/91 (20.9%)	7 (7.7%)	$51,212,118 ($21,337,568)	11/134 (8.2%)	-5 (-3.7%)	$24,954,513 (-$12,766,699)
L1	15/155 (9.7%)	5 (3.2%)	$34,755,348 ($13,943,353)	13/175 (7.4%)	-6 (-3.4%)	$30,908,816 (-$13,505,141)
Leadership (L1–L3)	54/278 (19.4%)	19 (6.8%)	$138,750,429 ($53,651,462)	54/429 (12.6%)	-19 (-4.4%)	$136,389,944 (-$46,057,144)
EL2	23/248 (9.3%)	-4 (-1.6%)	$33,555,384 ($5,495,195)	26/209 (12.4%)	0 (0%)	$36,379,338 ($11,000)
EL1	43/324 (13.3%)	-5 (-1.5%)	$26,750,721 ($2,934,390)	48/227 (21.1%)	4 (1.8%)	$28,763,376 ($2,442,664)
Total	**120/850 (14.1%)**	**10 (1.2%)**	**$199,056,534 ($45,221,877)**	**128/865 (14.8%)**	**-15 (-1.7%)**	**$201,532,657 (-$43,603,480)**

Table 23. Modelled funding outcomes for Option 4 in 2021

Level	Female			Male		
	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)	Model Grants/Apps (Funded Rate)	Difference Model – Actual Grants (Funded Rate)	Model MREA allocation (Difference Model – Actual)
L3	20/32 (62.5%)	7 (21.9%)	$51,882,963 ($17,470,542)	30/120 (25%)	-8 (-6.7%)	$80,276,615 (-$20,035,304)
L2	18/91 (19.8%)	6 (6.6%)	$48,364,548 ($18,489,998)	11/134 (8.2%)	-5 (-3.7%)	$24,954,513 (-$12,766,699)
L1	14/155 (9%)	4 (2.6%)	$32,731,504 ($11,919,509)	13/175 (7.4%)	-6 (-3.4%)	$30,908,816 (-$13,505,141)
Leadership (L1–L3)	52/278 (18.7%)	17 (6.1%)	$132,979,015 ($47,880,048)	54/429 (12.6%)	-19 (-4.4%)	$136,139,944 (-$46,307,144)
EL2	24/248 (9.7%)	-3 (-1.2%)	$34,840,220 (-$4,210,359)	28/209 (13.4%)	2 (1%)	$39,234,518 ($2,866,180)
EL1	44/324 (13.6%)	-4 (-1.2%)	$27,351,461 (-$2,333,650)	49/227 (21.6%)	5 (2.2%)	$29,213,746 ($2,893,034)
Total	**120/850 (14.1%)**	**10 (1.2%)**	**$195,170,696 ($41,336,039)**	**131/865 (15.1%)**	**-12 (-1.4%)**	**$204,588,207 (-$40,547,930)**

2019–2021 Investigator Grant rounds (pooled)

Table 24. Actual outcomes (2019–2021 pooled)

Level	Female		Male	
	Model Grants/Apps (Funded Rate)	MREA allocation	Model Grants/Apps (Funded Rate)	MREA allocation
L3	26/68 (38.2%)	$65,531,778	112/268 (41.8%)	$271,390,622
L2	37/204 (18.1%)	$83,148,960	59/383 (15.4%)	$127,720,319
L1	47/537 (8.8%)	$97,869,635	59/729 (8.1%)	$137,782,575
Leadership (L1–L3)	110/809 (13.6%)	$246,550,373	230/1380 (16.7%)	$536,893,516
EL2	66/708 (9.3%)	$92,926,520	69/612 (11.3%)	$97,744,177
EL1	137/1023 (13.4%)	$83,647,067	123/798 (15.4%)	$73,917,994
Total	**313/2540 (12.3%)**	**$423,123,961**	**422/2790 (15.1%)**	**$708,555,686**

Appendix C – Gender responses in Sapphire researcher profiles

NHMRC collects information on gender in Sapphire researcher profiles.[17] This information is then linked to grant applications for NHMRC reporting and statistical analysis. The current gender question in Sapphire researcher profiles is shown in Table 25 below.

Table 25. Current gender question in Sapphire researcher profiles, 2022

> Gender
>
> *This field is used to mitigate bias in the granting process and for statistical purposes.*
> ❏ *Male*
> ❏ *Female*
> ❏ *Not stated*
> ❏ *Intersex or Indeterminate*

NHMRC intends to update the field for 'gender' in Sapphire researcher profiles to align with the new ABS Standard for Sex, Gender, Variation of Sex Characteristics and Sexual Orientation Variables, 2020. This approach to gender classification is consistent with emerging best practice across government. The updated gender question, as shown in Table 26, will be introduced in Sapphire in late 2022 and used for gender reporting and analysis for all NHMRC schemes from 1 January 2023. Existing researcher profiles will be mapped to new fields automatically.[18] This change will be communicated to the sector to encourage all researchers to review, update or complete the gender question in their Sapphire researcher profile by late 2022.

Table 26. Updated gender question in Sapphire researcher profiles, 2023

> How do you describe your gender?* Gender refers to current gender identity, which may be different to sex recorded at birth and may be different to what is indicated on legal documents.
>
> Please choose one option:
> ❏ Man or male
> ❏ Woman or female
> ❏ Non-binary
> ❏ I use a different term (please specify)
> ❏ Prefer not to answer
>
> **This field is used for statistical purposes and to address gender inequities in funding outcomes.*
>
> *Privacy statement: Responses to this field are visible only to you, the Research Administration Office staff at the Administering Institution with which your profile is associated and NHMRC staff who have a need to know for the purposes outlined above (refer to NHMRC's Privacy Policy for more information on how NHMRC may use your information). Responses to this field are not visible to other applicants, peer reviewers or other participating or partnering institutions.*

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17 Researcher profiles are only visible in Sapphire to the individual researcher and relevant staff in the Administering Institution's Research Administration Office (RAO) and in the Office of NHMRC. This field is optional and in some cases no response is recorded.

18 Currently, only 0.02% of profiles (11/56,768) have self-reported 'intersex or indeterminate' as their gender in Sapphire. These profiles will automatically be mapped to 'I use a different term', but targeted communications are planned to these individuals (if contact details are up to date) to encourage them to review and confirm their preferred gender response.

Gender glossary and relevant definitions

By aligning with the ABS Standard for the gender variable, NHMRC recognises that "gender is about social and cultural differences in identity, expression and experience" (see below) and that it is those differences that are most relevant to the historical and systemic disadvantage experienced by women in NHMRC funding outcomes.

The definition from the ABS Standard is outlined in the box below.

Gender, nominal definition from the ABS Standard

Gender is a social and cultural concept. It is about social and cultural differences in identity, expression and experience as a man, woman or non-binary person. Non-binary is an umbrella term describing gender identities that are not exclusively male or female.

Gender includes the following concepts:

- Gender identity is about who a person feels themself to be
- Gender expression is the way a person expresses their gender. A person's gender expression may also vary depending on the context, for instance expressing different genders at work and home
- Gender experience describes a person's alignment with the sex recorded for them at birth i.e. a cis experience or a trans experience.

Responses to a gender question may reflect a combination of gender identity, expression and/or experience. In statistical collections, gender may be reported in terms of a person's felt or lived gender, as well as how that person is perceived by others, depending on whether information on gender is based on self-reported data or done by proxy.

NHMRC is aware that some individuals 'prefer not to say' or may be expressing a gender identity in the workplace that is different to how they feel about themselves. Individuals are encouraged to consider the privacy statement included in the gender question before deciding how to respond.

NHMRC also recognises that other sex, gender and sexuality identity issues intersect with an individual's experiences and may contribute to discrimination and disadvantage in the workplace. NHMRC intends to ask health and medical researchers their preferred gender identity (using the ABS Standard question and responses for 'gender') with the aim of including non-binary researchers in gender equity initiatives and reporting.

NHMRC is not currently proposing to include other sex (e.g. sex at birth), variations in sex characteristics (e.g. intersex), gender (e.g. trans or cisgender) or sexual orientation identifiers in its data collection about health and medical researchers applying for NHMRC grants. This is because NHMRC is prioritising the collection of data that is used to inform decisions about grant funding in the near future, mindful of the burden on the sector of additional data collection.

A glossary of relevant terms and definitions is provided in Table 27 below, as well as information on NHMRC data collection in Sapphire Researcher Profiles for grant scheme rounds opening in 2023.

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19   Standard for Sex, Gender, Variations of Sex Characteristics and Sexual Orientation Variables, 2020 | Australian Bureau of Statistics (abs.gov.au)

Term	Definition	NHMRC data collection*
Intersex[21]	Umbrella term that refers to people with innate genetic, hormonal or physical sex characteristics that differ from medical and social norms for female or male bodies. This is sometimes also called 'variations of sex characteristics.' There are at least 40 different variations that may be apparent at different life stages or may remain unknown to the individual and their medical practitioners. Intersex people can express an identity that is cisgender (identify with sex assigned at birth), transgender, non-binary or another term.	<u>Not included</u> in data collection from 2023 Intersex people are encouraged to select the gender response that best meets their gender identity, expression or experience.
Non-binary	Non-binary is an umbrella term describing gender identities that are not exclusively male or female. A non-binary person can identify as both or neither male and female, or sometimes one or the other. There are several other terms used to describe gender identities outside the male and female binary such as genderqueer, gender non-conforming, agender and bigender. Although these terms have slightly different meanings, they refer to an experience of gender outside of the binary.[22]	<u>Included</u> in data collection for 2023 grant application rounds
Sex	Classification of a person's sex is based upon their sex characteristics, such as chromosomes, hormones and reproductive organs. Sex recorded at birth refers to what was initially determined by sex characteristics observed at birth or infancy.	<u>Not included</u> in data collection
Sexual orientation	Umbrella concept covering sexual identity, attraction and behaviour. There are a number of ways in which someone might define their sexual orientation. Common examples are heterosexual, gay, lesbian and bisexual.	<u>Not included</u> in data collection
Transgender/ Trans	Umbrella terms used to refer to people whose assigned sex at birth does not match their gender identity. Trans people may choose to live their lives with or without modifying their body, dress or legal status, and with or without medical treatment and surgery. Trans people may use a variety of terms to describe themselves including but not limited to: man, woman, trans woman, trans man, non-binary, agender, genderqueer, genderfluid, trans guy, trans masculine/masc, trans feminine/femme.	<u>Not included</u> in data collection. Trans people are encouraged to select the gender response that best meets their gender identity, expression or experience.

Note: Data collection refers to information asked of grant applicants in Sapphire Researcher Profiles.

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20 Definitions are largely based on the Australian Institute of Family Studies' LGBTIQ+ communities: glossary of common terms, February 2022 and/or the ABS Standard for Sex, Gender, Variations of Sex Characteristics and Sexual Orientation Variables, 2020.

21 What is intersex? – Intersex Human Rights Australia (ihra.org.au) uses the definition: 'Intersex people have innate sex characteristics that don't fit medical and social norms for female or male bodies, and that create risks or experiences of stigma, discrimination and harm'.

22 *Best practices for non-binary inclusion in the workplace.* https://outandequal.org/wp-content/uploads/2018/11/OE-Non-Binary-Best-Practices.pdf