HEALTH AND MEDICAL RESEARCH EARLY TO MID-CAREER RESEARCHERS ROUNDTABLE BACKGROUND PAPER

INTRODUCTION

The Minister for Health and Aged Care, the Hon Greg Hunt MP, has asked the Department of Health (the Department) to convene a Roundtable with early to mid-career researchers (EMCRs) in order to better understand the factors impacting their ability to remain within the health and medical research sector.

PURPOSE OF THE ROUNDTABLE

The Health and Medical Research EMCRs Roundtable (the Roundtable) is an opportunity for the Department to engage directly with EMCRs across the spectrum of health and medical research to better understand the drivers impacting their ability to remain within the sector and potential solutions to these challenges. Where possible, the views, information and ideas gathered through the Roundtable will be used by the Department to develop strategies and policies for supporting EMCRs to make the most effective use of their qualifications and training through the Medical Research Future Fund (MRFF). The Department will report back to the Minister with proposed ideas. National Health and Medical Research Council (NHMRC) representatives will also be present at the Roundtable to listen to the discussion.

It is important to note that not all challenges EMCRs face can be solved by government funding and/or policies, especially in the short term. However, the Department is keen to listen and to support EMCRs where their remit allows.

The Department is particularly keen to hear from EMCRs on the opportunities that would most support their ability to remain within the health and medical research sector. Specifically, are there defined actions that could be taken to address the challenges EMCRs experience?

An agenda for the Roundtable will be distributed prior to the meeting.

The Department defines EMCRs as emerging researchers within their first ten years of academic or other research-related employment, following completion of postgraduate research training (with consideration for career disruptions). There is no age limit on who can be an EMCR, as the definition is dependent on where the researcher is in their career progression.

MRFF OVERVIEW

The $20 billion MRFF was established as part of the 2014-2015 Federal Budget with the purpose of providing a sustainable source of funding for vital health and medical research over the medium to long term. The MRFF aims to transform health and medical research and innovation to improve lives, build the economy and contribute to health system sustainability.

The Australian Medical Research Advisory Board (AMRAB) sets a five-yearly strategy that sets out the vision, aims and objectives for the MRFF. The strategy is supported by a list of two-yearly investment priorities that the government must take into consideration in determining disbursements from the MRFF.

One reason the MRFF was established was to fund research strategically according to national priorities, filling gaps in areas that need more research. In this way, the MRFF is different to funding from the National Health and Medical Research Council (NHMRC), which is largely investigator-led funding, i.e. the applying researchers propose research topics.

Further information on the MRFF is available at www.health.gov.au/mrff.

LANDSCAPE SCAN – MRFF, OTHER RESEARCH FUNDING, PHD COMPLETIONS

The MRFF is not the sole funding source for health and medical research in Australia. It is additional, and complementary, to existing medical research and innovation funding, such as the NHMRC. The Government also provides broader support for the research sector. See **Attachment A** for more information on MRFF, NHMRC and broader research funding in Australia.

Changes in the number of PhD completions is relevant to the discussion on EMCRs' ability to stay in the health and medical research sector. PhD completion numbers have been increasing in Australia, perhaps putting further pressure on EMCR research funding and increasing the competition for jobs. See **Attachment B** for more information on PhD completions in Australia.

SUMMARY OF KNOWN CHALLENGES FOR EMCRS

Pre-roundtable written feedback from EMCRs

The Department appreciates the written responses received from EMCRs prior to this Roundtable. The most common challenges facing EMCRs and ideas for improvement that were raised in that feedback are summarised below. During the Roundtable, the Department is keen to hear more from EMCRs about these challenges and particularly about possible solutions and ideas to mitigate these issues.

1. Security of employment

Key finding: Secure employment allows EMCRs to plan their research projects, professional careers, and personal lives, and reduces uncertainty and stress.

Challenges

- Short contracts (often only 1 year, sometimes 6 months)
- Extreme competition for positions
- Paternalism/hierarchy in universities
- Low salaries
- Higher pay as a clinician than a researcher – lack of incentives for clinician scientists
- Expectation to move labs after completion of PhD

- Job mobility – researchers are largely limited to aligning with universities/medical research institutes that only support grant holders and casualisation of the workforce
- Insecure work, so hard to support family/pay mortgage
- Limited career progression opportunities (due to above factors)

Ideas for improvement

- Longer term job contracts
- Increased resourcing to assist in day-to-day operations, incl. teaching, admin, lab assistants
- More opportunities for HDR student supervisions
- [Many of the ideas raised under the topics below, would also contribute to job security and opportunities for career progression]

2. Access to grant funding

Key finding: Access to grant funding allows EMCRs to pursue novel research ideas and provides employment security.

Challenges

- Limited relevant grant opportunities
- Low success rates – not enough people supported, "lottery", wasted time in applying
- Short grant duration promotes short employment contracts
- Desperate for funding, so must address urgent needs with immediate impact and high publication potential, rather than explore new, longer-term questions
- Hard to move out of shadow of superiors
- Big salary gaps meaning multiple grants required to cover a single position
- Limited bridging support/overlapping funding available
- Limited/uncertain continuity of project/program support, e.g. a project with potential real world implications, has met initial research goals, but misses out on the additional funding needed for implementation.

Ideas for improvement

- Increased funding at dedicated career levels (note: funding pool is limited and must be appropriately balanced across career stages)
- All category 1 grant applications must include one or more EMCR. This may help to
    - Foster mentoring culture
    - Help develop EMCR track records
- Create more opportunities for EMCRs to lead projects, e.g.
    - Recognise and consider training and learning in grant applications
    - Implement guidelines for who can be named as a PI on grants (de-normalise default of supervisor/lab head as PI when an EMCR will do most of the management)
- In assessment focus more on
    - Future leadership capability
    - Long term vision
    - Diversity in training and mentors
    - Innovation/impact of the research idea (rather than track record)
    - Broader metrics (e.g. patents, interaction with industry/government/NGOs) than number of pubs
- Longer grant duration
- Options for grant funding extension to support long-term focus on promising projects
- More frequent funding rounds
- Feedback to EMCRs when application unsuccessful for EMCR growth/improvement
- Education to EMCRs on available/most appropriate grant opportunities
- Less restrictive career disruption guidelines – include moving labs/countries, parental leave/carers leave <90 days, COVID-19 home schooling

- Remove restrictions on collaboration – i.e. inability to be a CI on more than one MRFF application in same stream. EMCRs may be collaborator on multiple projects, but may not lead these
- MRFF funds MD near-miss EMCRs (EL1-2), but not non-MD EMCRs who are doing translational research
- EMCR-specific grant rounds, e.g.
    - Seeding grants for EMCRs only to kick start small, independent projects
    - Grants for EMCRs who have not previously held ARC/NHMRC grants
    - Grants for EMCRs who are starting their own research group and moving towards independence
    - Grants to attend conferences to help EMCRs establish collaborations
- Explore US pre-proposal system
- Involve EMCRs in targeted grant round design meetings

3. Workplace culture

Key finding: It is important that workplaces set realistic expectations of what 'success' looks like and promote a healthy work-life balance.

Challenges

- Tricky work-life balance
    - Big workloads including research, teaching/admin, student supervision, service contributions, lack of technical assistants
    - Unpaid hours to "keep up" in competitive environment
    - Excessive time spent repeatedly applying for job contracts and grants
    - Long hours
    - Balancing work and family responsibilities
    - Particularly disadvantages women, especially those with primary caregiving responsibilities
- Hyper-competitive, which impacts collaboration
- High expectations on what EMCRs should be achieving
- Not supportive/nurturing workplace
- Mental health impacts (e.g. stress, burnout) due to uncertainty, workloads, high skill demands, work-life balance challenges

Ideas for improvement

- Culture change from competitive to collaborative
- More healthy role models to promote work-life balance

4. Provision of training / support

Key finding: EMCRs need appropriate support to progress from pure researchers to leadership roles in academia and/or to careers in other sectors (e.g. industry, research policy).

Challenges

- Limited mentoring and sponsorship (advocacy) by senior researchers
- Limited networking opportunities for (new) collaborations
- Lack of formalised management training
    - Limited support to set up a lab and training on how to run a lab
    - EMCRs expected to lead multi-institutional trials but there is no set precedent for the associated management, legal and administrative knowledge required
- Limited support/training/information available on pursuing other career paths outside of academia (e.g. industry, research policy)
- Universities not transparent in allocation of infrastructure funding

Ideas for improvement

- Education on available roles, e.g.
    - Seminars/career fairs for PhDs for exposure to non-academic industries looking to recruit PhDs

- Examples of individuals who have successfully transitioned
- Better understanding of transferrable skills for non-academic careers and how to sell these skills in job applications
- Engagement/work placements/apprenticeships with industry/government/community organisations whilst PhD student/still in academia
- Bridging training programs to help PhD grads get into industry/research policy
- Promotion of industry/research policy as a viable career option, not a "failed" academic career
- Mentor/advisor programs outside of academia
- More networking opportunities between academic/health services/industry
- Industry incentives to employ highly skilled EMCRs who do not have prior industry training
- Financial incentives for NGOs, private practices, etc. to undertake meaningful research using qualified researchers
- Allow CIs more flexibility in who they choose to administer their grant funding, i.e. not limited to universities, but allow partnership with more agile sectors
- Invention/start-up grants
- Expansion of Chief Scientist's Science Policy Fellowship Program
- Decentralise policy jobs – currently Canberra-centric
- Recognition of prior/future industry/external experience, ensuring the experience gained working outside academia will be recognised and valued in the context of promotion frameworks should the EMCR choose to return to academia
- Open opportunities for MBA courses, providing EMCRs with leadership skills (e.g. management, marketing, finance) and reinforcing connections and networks with the outside community
- Maintain access to next-generation and emerging technologies to allow Australian EMCRs to publish high impact science

5. Support for diversity

Key finding: Diversity needs to be championed to ensure a wide range of perspectives are embedded in research and that individuals from all backgrounds are valued.

Challenges

- Academic metrics are too strong a focus (e.g. number of publications)
- Seems better to be attached to an established lab and under an existing research program than to explore new questions/innovative ideas
- Lack of diversity in peer reviewers, e.g. with families, women, culturally and linguistically diverse (CALD), rural backgrounds
- Failure to recognise future feasibility/impact of commercially geared research
- Research involving protected IP cannot be published
- If enter academia after industry career, industry experience not valued
- Health services research undervalued/impact not understood
- Career disruption guidelines too restrictive
- Not feasible to assume all EMCRs (especially female) can become independent 10 years post PhD. "Mid-career" often > 10 years.

Ideas for Improvement

- Increase diversity of peer reviewers to reflect the community
- Increased paternity leave to normalise equitable division of parenting responsibilities
- Quotas/gender-specific funding to reduce gender gap
- Incentives to move rurally to research issues there and build research capacity. But then don't be disadvantaged in terms of track record
- Support for women and carers to take career breaks without being disadvantaged
- Link some hospital funding to how well research is fostered in the hospital

Literature review

The Department has reviewed a range of Australian and international literature on the challenges facing EMCRs. The challenges broadly aligned with those provided summarised above.

Recent literature has also focussed on the impacts of COVID-19 which has exacerbated the challenges facing EMCRs. For example

- Increased anxiety due to increased employment uncertainty, workplace changes and perceived loss of career prospects
- Impacts on track record and future grant competitiveness due to disrupted research (e.g. limited or no data collection due to restricted lab/field access, reduced clinical trial recruitment)
- Reduced revenue (e.g. fewer international students, decline in philanthropy, decline in gift-giving, reduced investment returns and reduced revenue from commercial deals) leading budget cuts within research organisations reducing team sizes and numbers of support staff.

The above COVID-19-related issues may disproportionately impact EMCRs, who are in a critical stage of career development, attempting to secure funding to continue their work and perhaps setting up their own research teams.

ADDRESSING EMCR CHALLENGES

As the major health and medical research funders in Australia, the Department (through the MRFF) and NHMRC are aware of the broad challenges facing EMCRs and have been attempting to reduce the barriers within their remit that EMCRs face. This Roundtable will provide ideas to support further efforts in this area.

ACKNOWLEDGEMENT

The Department thanks you for your contribution to this important discussion. Your involvement and feedback at the Roundtable will help assist the Department to inform strategies and policies for the MRFF to support EMCRs to make the most effective use of their qualifications and training.

Health, Medical and Broader Research Funding from the Australian Government

The below table shows budgeted MRFF, NHMRC and Biomedical Translation Fund (BTF) research investment into the future.

PROGRAM	2020-21 (BUDGET) ($m)	2021-22 (BUDGET) ($m)	2022-23 (BUDGET) ($m)	2023-24 (BUDGET) ($m)
National Health and Medical Research Council (NHMRC)	891.3	887.8	889.9	912.8
Medical Research Future Fund (MRFF) - total available for investment	597.9	627.5	650.0	650.0
Biomedical Translation Fund				$500.0

In 2019-20, the dedicated budget for health and medical research (NHMRC, MRFF and BTF) represented 13.6% of total Australian Government Investment in research and development. In addition, broader support from the government for the research sector included:

- Australian Research Council ($791.3 million)
- National Collaborative Research Infrastructure Strategy (NCRIS) ($181.9 million)
- Research Block Grants program ($1.94 billion)
- Cooperative Research Centres Programme ($184.3 million)
- Commonwealth Scientific and Industrial Research Organisation (CSIRO) ($839.2 million)

The Government has also committed to recent additional support in response to COVID-19, including $1 billion in research funding for Universities to supplement the lost income as a result of COVID-19.

Source: Data largely from the Australian Government's 2019-20 Science, Research and Innovation Budget Tables, Department of Industry Science, Energy and Resources

PhD Completions in Australia

Graph 1: PhD completions in Australia from 1989 to 2019. Source https://www.dese.gov.au