Australian Medical Research and Innovation Priorities 2018 – 2020 Determination 2018

I, Ian Frazer, Chair of the Australian Medical Research Advisory Board, make the following instrument on behalf of the Advisory Board, under subsection 32E(1) of the *Medical Research Future Fund Act 2015*.

Dated: 30 October 2018

Professor Ian Frazer, AC
Chair, Australian Medical Research Advisory Board

Contents

1. Name of Instrument

This instrument is the *Australian Medical Research and Innovation Priorities 2018 – 2020 Determination 2018*.

2. Commencement

This instrument commences on the day after it is registered.

3. Cessation

This instrument will cease to be in force as if repealed at the end of two years after the instrument is registered.

4. Authority

This instrument is made under subsection 32E(1) of the *Medical Research Future Fund Act 2015*.
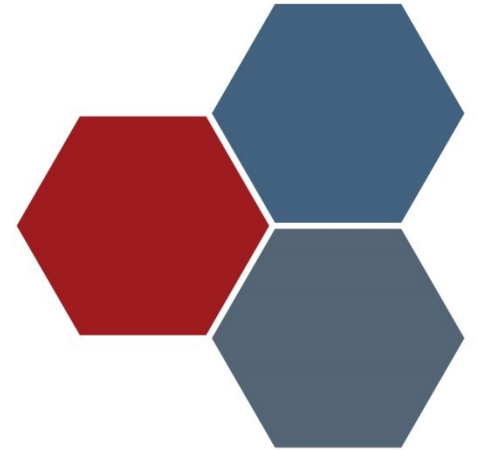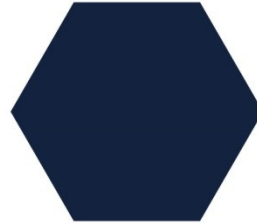
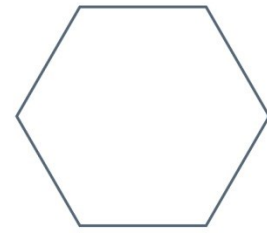### 5. Schedules

Schedule 1 to this determination contains the *Australian Medical Research and Innovation Priorities 2018 – 2020*.

Schedule 1

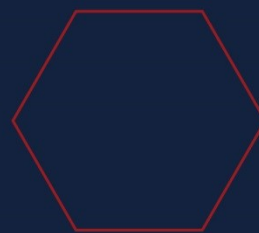# Medical Research
Future Fund

**AUSTRALIAN MEDICAL RESEARCH
AND INNOVATION PRIORITIES
2018-2020**

Australian Medical Research and Innovation Priorities 2018-2020

Preamble

In accordance with the *Medical Research Future Fund Act 2015* (the Act), the independent Australian Medical Research Advisory Board (AMRAB) must develop a five-year *Australian Medical Research and Innovation Strategy* and a set of related *Australian Medical Research and Innovation Priorities* (Priorities) to be in force for two years. The inaugural Medical Research Future Fund (MRFF) Strategy 2016-2021 and Priorities 2016-2018 were delivered to Government in early November 2016.

This document comprises the second set of MRFF Priorities spanning the period 2018-2020.

The Act requires AMRAB to take into account the following when determining the Priorities:

- the burden of disease on the Australian community;
- how to deliver practical benefits from medical research and medical innovation to as many Australians as possible;
- how to ensure that financial assistance provided under the MRFF complements and enhances other financial assistance provided for medical research and innovation; and
- any other relevant matters.

The Priorities for 2018-2020 were developed by AMRAB following a comprehensive national consultation process. Community and sector engagement on the development of the Priorities is critically important as the Priorities serve to inform future Government decisions on MRFF initiatives and investments. The 2018 consultation engaged the Australian public, organisations with expertise in health and medical research and innovation, consumer representatives, clinicians and health services managers. More than 1,200 stakeholders were involved and over 360 individual written submissions received. Full information about the national consultation, including the analysis of submissions, forums and roundtables, can be found at www.health.gov.au/mrff.

These Priorities build on (where appropriate) and replace the first set of Priorities 2016-2018. They remain consistent with the vision, aim, objectives and six strategic platforms identified in the MRFF Strategy 2016-2021.

The Act requires that the MRFF's Priorities are refreshed every two years. The identification of new priorities does not impact initiative funding already committed by Government and yet to be the subject of an approach to market or contracted as grants. Some of these investments by Government have a four to 10 year investment horizon and are in effect forming a foundational program structure for the MRFF. That funding will continue, while any new MRFF initiatives decided by Government will need to take into account the Priorities for 2018-2020. Based on the current forward estimates, over $700 million remains available for initiatives from 2019-20 to 2021-22, the primary period of applicability of these Priorities. The health and economic return on investment associated with these new Priorities will be measured against a framework currently under development.

MRFF Priorities are designed in accordance with the Act with the purpose of informing Government decision-making on future initiatives. While Government must take the MRFF Priorities into consideration when making these decisions, they are not required to address each and every priority.

These new Priorities reaffirm that funding from the MRFF is complementary to, and does not duplicate, the effort of the National Health and Medical Research Council (NHMRC), Australia's premier health and medical research funding body. The Priorities are also designed to harness the Commonwealth's significant investment in science, innovation and technology and align with the National Science Priorities and the National Innovation and Science Agenda. They are intended to complement investments by state and territory governments, and private and not-for-profit sectors in Australian health and medical research.
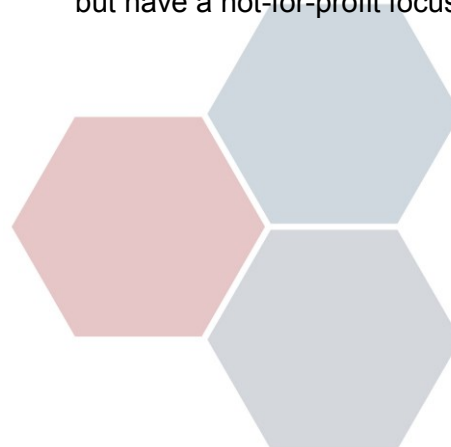
The National Collaborative Research Infrastructure Strategy (NCRIS) network will play an important support role for future research under the Priorities, and early collaboration will be required to ensure that facilities can plan for demand, and to avoid duplication of investment.

The 2018-2020 Priorities

The MRFF Priorities for 2018-2020 under each Strategic Platform are presented below. In determining each of the Priorities for 2018-2020, AMRAB has considered *Why* the priority is or remains important as well as *How* the priority might be addressed through initiative implementation.

Strategic and International Horizons

Priority	WHY action is needed	HOW best addressed
One Health – Antimicrobial Resistance There are no borders between human and animal health when it comes to antimicrobial resistance (AMR). Research into stewardship practices, diagnostic tools and new antimicrobials and vaccines that spans this divide is critical.	Australia has one of the highest rates of antibiotic use in the world. High rates of antibiotic use are associated with increasing rates of antibiotic resistance. The *Australian National AMR Strategy 2015-2019* recognises that AMR is a One Health issue that requires a coordinated response in all sectors including the human health, animal health, food and agriculture sectors.	Provision of research grant opportunities that focus on collaborative multidisciplinary research to achieve better public health outcomes through the understanding of mechanisms of microbe transfer between animals and humans and by the development of strategies to reduce antibiotic use and apply novel therapeutic solutions.
Global Health and Health Security Global health challenges including health emergencies and pandemic preparedness, and the development and implementation of low technology preventative, diagnostic and treatment solutions are best addressed through international research collaboration.	Health is a global effort and today's world is highly interconnected. Australians can benefit from research that addresses emerging global threats and delivers fit-for-purpose healthcare innovations that can be of secondary benefit to other nations. It is important that Australian researchers think and work globally to address shared challenges.	Creation of an Australian Global Health Challenges Research Fund that can leverage contributions from other portfolios, philanthropy and global health funds to purposefully stimulate public good research that addresses global health and health security issues of relevance to Australia. This fund could work similar to the Biomedical Translation Fund but have a not-for-profit focus.

Priority	WHY action is needed	HOW best addressed
Aboriginal and Torres Strait Islander Health Indigenous leadership and Indigenous-led priority setting to drive health-related research to improve the health of Aboriginal and Torres Strait Islander Australians and to close the gap on health mortality and morbidity.	Health and social equity for Indigenous Australians remains one of Australia's most enduring challenges. The gap between Indigenous and other Australians in life expectancy, mortality and wellbeing remains large, and unacceptable. Indigenous health research investment to date has been fragmented and not always prioritised or led by communities. In line with *Closing the Gap Refresh*, enhancing Indigenous research capacity is essential.	A significant investment is required. Such a mission must have at its core a focus on Indigenous leadership, agency and community empowerment, the promotion of health equity, elimination of discrimination and the strengthening of Indigenous research capacity. Through Aboriginal and Torres Strait Islander governance and with regard to the social and cultural determinants of health, a series of health challenges should be identified for priority action.
Ageing and Aged Care Research into the diseases of ageing and the means to prolong quality of life, including tackling cognitive decline and dementia, and compressing the period of intense morbidity in later years through biomedical discovery and health service innovation.	The intergenerational distortion ahead requires a concerted research focus on ageing Australians. Optimising the physical and cognitive health and wellbeing of older Australians is one of society's greatest challenges. It requires a multidisciplinary understanding of prevention, behaviour, biomarkers, disability and mobility, co-morbidity, models of care, consumer choice and care needs.	A significant investment to boost efforts in biomedical, medical technology and health services research into ageing and aged care. Such a mission would need to be responsive to any research-relevant outcomes from the Royal Commission into Aged Care Quality and Safety, of which the interim report is due in October 2019.

Data and Infrastructure

Priority	WHY action is needed	HOW best addressed
Digital Health Intelligence The digitalisation of healthcare will disrupt and transform clinical practice. Data science, informatics, advanced clinical decision making tools, wearables and artificial intelligence research are the key to realising the benefits of healthcare digitalisation.	Digital health uses information technology to support and enhance clinical safety and connect the health system. The potential for improved prevention, patient care, behavioural change and care compliance is enormous, as articulated in Australia's *National Digital Health Strategy*, which is agreed by all governments. Australia is at the cusp of an eHealth revolution and research is critical in harnessing the potential of My Health Record to improve health outcomes.	Work with the Australian Digital Health Agency, states and territories and key industry players to define and then conduct a series of thematic research grant opportunities that advance data platforms, linkage and analytics; end-user digital utility; the development of novel decision tools; and applied artificial intelligence. Opportunity to align with the emerging *National Framework for Clinical Quality Registries* should be considered over time.

Health Services and Systems

Priority	WHY action is needed	HOW best addressed
Comparative Effectiveness Research Support systematic evaluation and demonstration of the comparative value of health interventions to better inform the decisions clinicians and consumers make in healthcare.	Healthcare is about choices – this treatment over that, essentially 'what works best'. Knowledge of the benefits and harms of alternative means to prevent, diagnose, treat, and to monitor care, can transform health outcomes. It is important to close the gap between efficacy and effectiveness. Evidence generated by comparative effectiveness research improves treatment and informs decision making about investment and divestment.	Develop a program to drive prioritised targeted grant opportunities to conduct research that engages patient populations that are typical in primary and acute care settings in randomised control trials; data, observational, service model and behavioural economic studies; and decision analysis research. Priorities need to be driven by clinicians, consumers and policy makers.
Primary Care Research Address the capacity and production gap in primary care research with an emphasis on multi-disciplinary, adaptive research methodologies and clinician capability support.	While most healthcare occurs in the community, most research occurs in tertiary or specialist settings. In primary care patients typically present early with undifferentiated disease and multiple co-morbidities. The increasing complexity of care environments make practitioner and care team decisions increasingly difficult. The business reality of general and allied health practice also leaves little time for research translation. The growth in chronic and complex diseases, particularly in cohorts with low socioeconomic status, calls for a more concerted effort in primary care research that is geographically relevant and where possible scalable nationally to maximise impact.	Support the establishment of Practice-Based Research Networks (PBRNs) to advance primary health care research in partnership with Advanced Health Research and Translation Centres (AHRTCs) and Centres for Innovation in Regional Health (CIRHs), and the Australian Clinical Trials Alliance. Develop a grant opportunity to support PBRNs and other collaborations to conduct prioritised primary care research that is led by clinicians, can permeate daily practice and has potential for scalability.

Capacity and Collaboration

Priority	WHY action is needed	HOW best addressed
Clinical Researcher Capacity Continue to enhance Australian clinical researcher capacity with a focus on next generation fellowships that target multidisciplinary engagement, fields of emerging scientific effort that has healthcare application potential and primary care.	Clinically active researchers bring a practice perspective that aids research translation. Sufficient and sustained investment is required to ensure Australia maintains its reputation for research excellence. This attention must traverse career stages with a focus on early and mid-career to ensure the viability of the next generation of researchers. It must also draw on the increasing diversity of disciplines intersecting with healthcare innovation and engage with the end-user of research – clinician and consumer.	Continue to harness the fellowship schemes operated by the National Health and Medical Research Council (NHMRC). Determine priority fields of study for concentrated investment. Explore opportunities to work in partnership with professional colleges and industry to enhance access to PhD scholarships for general practice and allied health.
Consumer-Driven Research Conduct research that is driven by crowdsourcing consumer priorities and purposefully connecting researchers to consumers with the intent of enhancing evidence translation into every day clinical practice.	Sometimes there is a mismatch between what researchers want to research and the lived experiences, values and priorities of consumers, carers and clinicians. Partnerships in research design and practice can increase the translation of research evidence and illuminate new discoveries, transforming the healthcare experience and maximising the impact of research investment.	Establish a program that can pair researchers to consumers, carers and clinicians and through a joint priority setting methodology design grant opportunities that enable consumer-driven targeted research.

Trials and Translation

Priority	WHY action is needed	HOW best addressed
Drug Repurposing Partner with industry to foster an enduring partnership to systematically identify drugs with repurposed therapeutic potential for investigative research.	The application of an existing therapeutic to a new disease indication is attractive in terms of decreasing development costs and decreasing the time needed to deliver new therapies to the patient. De novo drug development can take well over a decade. Currently, repurposing of drugs is difficult and achieved by access to comprehensive libraries of clinical compounds. New technologies and advances in experimental methods can accelerate the identification and access to drugs of interest.	Work with MTPConnect, the Australian medical technologies and pharmaceutical industry growth centre, to create a partnership investment program with industry to identify and research drugs with repurposing potential.
Public Health Interventions Targeted research to test innovative public health approaches to addressing modifiable risk factors that are at the heart of the rise of chronic and complex disease prevalence and persistence in Australia.	Investment in public health brings economic benefit. Chronic conditions are the leading cause of illness, disability and death in Australia. They are prevalent, persistent and can gradually lead to a deterioration of health and loss of independence. Primary causes are typically known (behavioural and biomedical) and modifiable. There is great potential for integrating prevention and public health interventions with healthcare to keep Australians healthy for as long as possible.	Provision of research grant opportunities for multidisciplinary collaborative teams to test the viability of new innovations and public health interventions that consider geographic place and socio-economic vulnerabilities and apply sound implementation science approaches.

Commercialisation

Priority	WHY action is needed	HOW best addressed
Translational Research Infrastructure Address gaps in early biomedical and medical technology product development by supporting access to expertise and infrastructure in partnership with industry that seeks to accelerate rapid pre-clinical work and evaluation.	Early drug or device development can suffer from a lack of sufficient threshold evidence critical to attracting future private capital. For Australian innovation this sometimes means research needs to 'go back, before it can go forward' creating a loss in opportunity. Research must be rigorous and reproducible to demonstrate investment merit. Better integration with and access to NCRIS support and advanced biomedical translation assets is required to ensure that discoveries are converted to new drug candidates, devices and treatments with quality data and speed. This will make Australian research more 'investable'.	Design a targeted investment program that complements the MRFF's existing proof-of-concept supporting programs by providing timely and strategic access to expertise and infrastructure that facilitates research into novel biomedical technologies to enable their translation into clinical practice. This might be best achieved by identifying an oversighting entity operating perhaps a voucher-type system.