Australian Academy of Science submission on the
Draft National Health and Medical Research Strategy

The Australian Academy of Science welcomes the draft National Health and Medical Research Strategy (NHMR Strategy) and supports the focus areas and enablers, which provide a strong framework to strengthen Australia's health and medical research system.

The Academy recommends the Strategy:

- Clearly articulate the links between the National Health and Medical Research Strategy and Strategic Examination of R&D to deliver a coordinated, dynamic research system
- Develop a set of actions to address funding challenges as a key part of the Strategy, including lifting the cap on MRFF disbursements
- Provide opportunities for large multidisciplinary research teams through networks and funding structures
- Deliver a coordinated approach across infrastructure, data and emerging technologies for health and medical research
- Prioritise development of sustainable careers for EMCRs and preparing for future demands on the workforce in the proposed workforce plan
- Develop joint Indo-Pacific regional research programs and increase resources necessary to build multidisciplinary, multinational research teams.

Articulate the links between the National Health and Medical Research Strategy and Strategic Examination of R&D to deliver a coordinated, dynamic research system

To deliver transformational change across Australia's research and development system, the National Health and Medical Research Strategy and implementation of the findings of the Strategic Examination of R&D (SERD) must be aligned. The Academy welcomes the recognition of this need in the Strategy under Focus area 2 and looks forward to seeing further details on how this will be achieved in the final Strategy and its implementation.

The Strategy Focus area 1 emphasises "consistent processes to set, fund and evaluate research impact", including coordination between state and federal governments and other stakeholders. Under the coordination model proposed by the Strategic Examination of R&D panel, one (or more) pillars could be focused on health and medical research challenges informed by the Strategy and proposed National Strategy Advisory Council. The governance board proposed in the SERD issues paper, *National coordination for RD&I impact,* should coordinate with the National Strategy Advisory Council. The SERD model would allow greater private and co-investment in translational research and should refocus public investment in discovery (basic) research.

The Academy welcomes the Strategy's recommendation to "ensure balanced investment into investigator-led and priority-driven research, across discovery, clinical, translational and commercialisation research and development."

Develop a set of actions to address funding challenges as a key part of the Strategy, including lifting the cap on MRFF disbursements

In its earlier [submission](#) on the NHMR Strategy, the Academy highlighted the persistent systemic issues that impact health and medical research investment, and national R&D investment more broadly. The Academy welcomes the inclusion of 'funding' as an enabler in the strategy and the intention to ensure balanced investment into investigator-led and priority drive research from discovery through to commercialisation (Focus area 1).

Given challenges faced by the health and medical research sector, particularly in addressing the full costs of research and supporting career pathways for researchers, it is unacceptable that an arbitrary cap is placed on disbursements from the MRFF.

Costings by the Parliamentary Budget Office show that disbursement from the MRFF could be doubled and still maintain the fund at $24 billion over the next ten years. Under the current $650 million annual disbursements, the MRFF is expected to grow to $35.4 billion. The cap should be removed to allow the MRFF to deliver what it was originally designed and legislated to do—support medical research and innovation.

The Academy strongly recommends that an increase in MRFF funding includes an allocation to host institutions to alleviate the pressure of indirect costs of research and facilitate sustained collaboration between research and clinical providers. The Academy strongly recommends that the NHMR Strategy include lifting the cap as an action, potentially under Focus area 2 – Commonwealth research funding.

Support for aligning management of the MRFF and MREA and future investment strategies

The Academy supports the Strategy's proposal to bring the administration of the Medical Research Future Fund (MRFF) and the Medical Research Endowment Account (MREA) together, while preserving the unique strengths and focus of each program. Bringing together the two streams, under one executive agency will build a point-to-point system from investigator-initiated research (MREA) and translation of the research into a clinical setting (MRFF). The Academy supports the strategy's recognition that the strengths of each fund are preserved—maintaining the discrete and complementary focus of each program is essential. The MREA should largely be devoted to funding discovery research and the MRFF focused on applied, translational and clinical research.

Provide opportunities for large multidisciplinary research teams through networks and funding structures

The nature of scientific research, including health and medical research, is evolving as multi-disciplinary teams of researchers collaborate to tackle complex challenges, and the need for multi- and inter-disciplinary approaches grows.

Collaborative networks and funding structures should seek to promote multi and inter-disciplinary collaboration, rather than competition. The Academy welcomes the proposal in the NHMR Strategy to create grant schemes that incentivise and resource research activities that sit across traditional disciplinary boundaries and smarter design of grant opportunities that are fit-for-purpose. Peer review processes for competitive grants will need to evolve to ensure that suitable expert peer review is available to adequately assess interdisciplinary research.

Deliver a coordinated approach across infrastructure, data and emerging technologies for health and medical research

The NHMR Strategy appears to solely focus its attention on AI as an emerging technology. While AI is a major research and healthcare disruptor, a Strategy with longevity must also consider other emerging technologies that will shape research and healthcare into the future, in areas including personalised medicine, synthetic biology, quantum technology, materials science, digital health innovation and multi-model data transforming healthcare delivery.

Harnessing AI for health and medical research capability (Focus area 5) is welcome and should also be a key focus of the Government's National AI Capability Plan. The Academy supports the Strategy's recognition of the need for a national coordinated policy approach to harness AI and advanced technologies, and advocates for a national strategy for the uptake of AI in the science sector, including scaling up investment in fundamental AI science. A coherent policy framework to guide responsible development and adoption of AI technology is essential across science, including health and medical research.

Next-generation high-performance computing (HPC) is a key opportunity to support advanced health and medical research and health outcomes–enabling applications like AI driven diagnostics, accelerating drug discovery, epidemiological modelling and precision healthcare. Data-intensive research requires faster, scalable systems to process massive datasets and run high-resolution simulations. The expansion of high-performance computing and data (HPCD) capability also offers opportunities for innovative industry-research collaborations.

Australia's current HPCD infrastructure is no longer sufficient to meet the increasing demands of science and society, but Australia has no plan for the next generation of supercomputing or to replace the computing infrastructure Australia currently relies on. **Australia needs a long-term national strategy and roadmap to build national HPCD capacity**.

Prioritise the plan to develop sustainable careers for EMCRs and prepare for future demands on the workforce

The Academy strongly supports the NHMR Strategy's proposal to develop an Australian Health and Medical Research Workforce Plan. Building sustainable career pathways and greater career certainty for early and mid-career researchers should be an important focus of this plan.

The current practice of short-term funding cycles and multiple concurrent grants to retain health and medical researchers creates uncertainty and erodes health and medical research talent. The lack of stable career pathways and availability of secure positions creates a situation where researchers are constantly applying for the next grant rather than focussing on research. Existing support focuses heavily on mentorship support, whilst lacking fundamental job security.

The Academy conducted a capability analysis of Australia's science sector, Australian Science, Australia's Future, which found that in-demand areas important for healthcare and medical innovation—such as AI, data science, materials science, biotechnology and epidemiology—are facing critical gaps in education and workforce capability. The Academy would welcome the opportunity to discuss our analysis further with the NHMR Strategy Chair and secretariat.

Develop joint Indo-Pacific regional research programs and increase resources necessary to build multidisciplinary, multinational research teams.

The Academy welcomes the Strategy's goal to strengthen regional and global partnerships. This will support Australia's leadership and role in promoting health security across the region and building capacity to anticipate and respond to health threats. Expanding Australia's participation in global initiatives such as Horizon Europe and the Global Health Security Agenda would provide opportunities to build greater capacity and increase health security in the region.

The UK based Fleming Fund provides a strong example of a One Health interdisciplinary funding model. The fund, a substantive global program supports up to 25 countries across Africa and Asia through a UK Aid program that takes a multidisciplinary approach to addressing antimicrobial resistance (AMR), encompassing human and animal health, food production, and the environment.

To discuss or clarify any aspect of this submission, please contact Lauren Sullivan, Manager Policy, at science.policy@science.org.au