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Association of Australian
Medical Research Institutes

SUBMISSION TO

DEPARTMENT OF FOREIGN AFFAIRS AND TRADE

NEW INTERNATIONAL DEVELOPMENT POLICY

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Executive summary

This submission is made on behalf of the Association of Australian Medical Research Institutes (AAMRI). Our 56-member medical research institutes, and their 19,000 staff and students, work on the full spectrum of medical research, undertaking discovery, clinical, public health, social science, and health systems research. Our members are world leaders in their fields and have extensive experience with international partnerships in training, research and policy.

As a leading medical research nation, Australia, has the opportunity to use its considerable talents and resources to boost its international development efforts by better combining medical research with international aid. Australia's outstanding medical research is already delivering improved health and economic outcomes through the Indo-pacific region. This is best demonstrated through case studies one to four which accompany this submission.

A healthy economy is reliant on a healthy society. Achieving this will require research being fully embedded into all health programs within the aid program as well as smart investments in health and medical research. There should be no major expenditure on health interventions without an accompanying knowledge gain designed to promote current and future cost-effective health benefits.

The key recommendations of this submission are:

- **Recommendation 1.1: The quantum of aid funding should be increased, including an increase in funding for health investments.**
- **Recommendation 1.2: Research should be embedded in all future health investments made through the aid program.**
- **Recommendation 2: The new international development policy should consider incorporating the World Health Organization health priorities for the Western Pacific Region.**
- **Recommendation 3.1: Continue funding for the Indo-Pacific Centre for Health Security beyond 2022.**
- **Recommendation 3.2: Establish an Australian Centre for International Health and Medical Research.**
- **Recommendation 4: Expand the role of the Indo-Pacific Centre for Health Security to cover non-communicable diseases**
- **Recommendation 5: Ensure a strong working relationship with Australia's funders of medical research to help optimise support for health components of the aid program.**
- **Recommendation 6: Build capacity of Indo-Pacific nations in health and medical research across the entire research pipeline, from discovery to implementation.**

1 Securing regional economic prosperity through better health outcomes

One of the most significant parts of Australia's international development policy are the investments made through the Australian aid program. The aid program promotes Australia's national interests by contributing to sustainable economic growth and poverty reduction and has a specific geographic focus on assisting growth in the Indo-Pacific region. Economic growth and poverty reduction can only be achieved by making ongoing investment in the health outcomes of those living in the region.

The health challenges for the region directly impact on future economic prosperity, both in the Indo-Pacific region and in Australia (see case studies one and two). Increased morbidity and mortality impacts on people's ability to participate in the economy, reducing economic activity. This results in reduced employment in the region and reduced trade with Australia. It is in Australia's economic interests to promote improved health outcomes in the region, which includes ensuring there is a skilled research workforce that is able to support the optimisation of healthcare delivery.

The quantum of funding through for the aid program should be increased, as well as the quantum of funding directed towards activities to improve health in the region needs. At present around $545 million, or 14% of the aid budget, is allocated towards health, ranking health fifth out of the seven aid priority areas. To ensure this investment delivers maximum impact research needs to be embedded in all future health investments, with all major expenditure on health interventions demonstrating an accompanying knowledge gain that will

promote current and future cost-effective health benefits. While all the aid priority areas require strong investment, health should be seen as fundamental to improvements across the whole aid program.

Recommendation 1.1: The quantum of aid funding should be increased, along with an increase in funding for health investments.

Recommendation 1.2: Research should be embedded in all future health investments made through the aid program.

2 Health aid investment priorities

The region faces a number of key health challenges that left unaddressed will continue to impact on regional development. This includes:

- 200 million children under five years old do not reach their potential due to poverty, poor nutrition and health, and inadequate learning opportunities.
- On average 288 women in our region die every day due to complications during pregnancy or at childbirth.
- Nearly three million children under five years of age died in 2011 in the Asia-Pacific region, and 75 per cent of all deaths in the Pacific are caused by non-communicable diseases.
- Uncontrolled epidemic and emerging diseases such as measles, Zika, Japanese Encephalitis, multi-drug resistant tuberculosis, malaria, swine flu and currently COVID-19.

The widespread overuse of antibiotics in the region leaves it particularly vulnerable to antimicrobial resistance. This brings the risk of the incidence high-risk and costly infections increasing. Non-communicable diseases are growing in impact and are becoming the biggest killers in the region. This includes diseases such as heart disease, stroke, cancer, diabetes and chronic respiratory diseases. The Pacific Islands experience some of the highest levels of obesity and diabetes in the world. The Indo-Pacific region is also particularly vulnerable to the impacts of climate change on health. It is anticipated there will be increased heat stress, malnutrition due to food insecurity, increased vector-borne diseases, and the emergence of novel pathogens.

The new international development policy should focus on tackling these health threats and should take into account the recent World Health Organization's thematic report into the health priorities for the Western Pacific Region. This report identified four areas of future focus, and consideration should be given to incorporating these into future plans for health within the new policy.

- improving health security (including from antimicrobial resistance and from infectious diseases)
- tackling non-communicable diseases and the impacts of ageing
- managing the impacts of climate change on health
- reaching those people who are still most affected by infectious disease, and high rates of maternal and infant mortality

Recommendation 2: The new international development policy should consider incorporating the World Health Organization health priorities for the Western Pacific Region.

3 Investing to make a substantial difference: Indo-Pacific Centre for Health Security

A significant and welcome new five-year $300 million investment was made in 2017 by the government to tackle infectious diseases in the region through the establishment of the Indo-Pacific Centre for Health Security (IPCHS). This investment was made in response to the Indo-Pacific region being a source for several emerging infectious diseases as well as a site of growing antimicrobial drug resistance to high-burden diseases such as malaria and tuberculosis. This crucial investment is helping to reduce the impact of infectious disease which can cause social and economic harm on a national, regional or global scale.

The IPCHS has the potential to be a game changing investment and is already informing evidence-based planning that will help prevent epidemics, strengthen early detection capacity, and support rapid, effective national and international outbreak responses.[1] It is accelerating research on new drugs and diagnostics,

[1] IPCHS (2020) About. Available at: https://indopacifichealthsecurity.dfat.gov.au/about

expanding partnerships with regional neighbours, investing in work-force development and building new people-to-people linkages that will build regional health capacity. A number of AAMRI members are directly involved in IPCHS initiatives and research programs and these are already delivering tangible benefits.

While the IPCHS is a welcome new investment its funding is time-limited and will expire in 2022 at a time when threats from infectious diseases in the region remains prevalent. The World Health Organization has declared five Public Health Emergencies of International Concern (PHEICs) due to infectious disease transmission since 2014. In 2019-20 the Indo-Pacific region faced large scale outbreaks of polio and measles and is now responding to the COVID-19 epidemic.

The new international development policy should consider extending the life of this program to ensure this essential capacity building does not suffer an abrupt halt and fall away. This and other programs (see section four) would benefit from from the establishment of an international centre for health and medical research, similar to that of the Australian Centre for International Agricultural Research. There would be considerable benefits in establishing an ongoing health and medical research program. This would help enhance the ongoing funding and brokering of partnerships between Australian scientists and their counterparts in the Indo-Pacific region.

Recommendation 3.1: Continue funding for the Indo-Pacific Centre for Health Security beyond 2022.

Recommendation 3.2: Establish an Australian Centre for International Health and Medical Research.

4 Tackling non-communicable diseases

In addition to refunding the IPCHS consideration needs to be given to extending its remit. At present it has a focus on infectious diseases, with non-communicable diseases not featuring. However, the health and economic security of the region, and that of Australia, are inextricably linked to tackling non-communicable diseases. This includes investing in capacity to reduce the region's biggest killers: heart disease, stroke, cancer, diabetes and chronic respiratory diseases. Collectively, these diseases are responsible for 86% of deaths in the Western Pacific Region, and 71% worldwide.[2] Other non-communicable diseases, such as hearing loss, mental health and dementia are major contributors to the global burden of disease. Hearing loss and depression are globally ranked the third and fifth most burdensome health conditions respectively.[3] They are also a major source of impoverishment for populations in low- and middle-income countries.

Left unaddressed these chronic diseases will hold back the region and economic growth will inevitably suffer, which will in turn affect Australia. Investments through an IPCHS initiative that utilise research will help find ways to reduce this burden of disease.

Recommendation 4: Expand the role of the Indo-Pacific Centre for Health Security to cover non-communicable diseases

5 Making use of the opportunities provided by the NHMRC and the MRFF

Around $50 million in global health research is funded through the general NHMRC funding programs which are open to all investigators. This is research undertaken by leading researchers at Australia's medical research institutes, hospitals and universities, and often in partnership with researchers in developing countries. This research has a substantial impact in finding new cures and treatments for diseases such as malaria, dengue fever and cardiovascular disease, as well as improving maternal and infant health. An example of effective NHMRC funded research is provided in case study three, which shows how incidence of parasitic intestinal helminth worms have been substantially reduced in some communities thanks to Australian funded research.

There are now new opportunities through the Medical Research Future Fund (MRFF) to fund research that will improve the lives of those living in the Indo-Pacific region. Two of the twelve priority areas the MRFF is funding are particularly relevant to improving health outcomes in the Indo-Pacific. The first is anti-microbial resistance,

[2] WHO (2019) *Towards the healthiest and safest region: A vision for WHO work with Member States and partners in the Western Pacific*.
[3] GBD 2016 Disease and Injury Incidence and Prevalence Collaborators (2017) 'Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016'. *The Lancet*, 390(10100):1211-1259

a key health challenge in the region, and the other is funding for global health challenges such as pandemics. Other MRFF themes such as ageing and aged care, and primary care research are also relevant to the region and efforts should be made to support research that benefits the region.

A clear relationship between the new international development policy and existing funding mechanisms and structures should be established. This should include identifying how DFAT can best leverage existing expertise and investments being made by other medical research funding bodies, as well as avoiding duplication and ensuring knowledge gaps are filled. For example, DFAT in the past has engaged the NHMRC to identify high quality research projects relevant to the aid program, and this approach should be continued. How the international development policy's plans for improving health outcomes and the MRFF's plans for funding antimicrobial resistance and global health research align with each other should also be made clear.

Recommendation 5: Ensure a strong working relationship with Australia's funders of medical research to help optimise support for health components of the aid program.

6 Building health and medical research capacity

Health systems are at their most effective when they are underpinned by a strong health and medical research sector. Improving health outcomes over the long-term will require capacity building in the health and medical research sector in the region. This includes building capacity across the pipeline of health and medical research, from fundamental discovery science through to health implementation research (see case study four).

There are excellent examples of where Australia has successfully been involved in local capacity building. For a long-time Australia has supported the Papua New Guinea Institute for Medical Research. This institute now has its own programs undertaking research in infections and immunity, vector borne diseases, sexual and reproductive health, and population health and demography. The advantages of building such capacity are considerable. A sustained focus on the health priorities of that country can be built up, and research more quickly embedded into the health system.

Recommendation 6: Build capacity of Indo-Pacific nations in health and medical research across the entire research pipeline, from discovery to implementation

Case study 1 – Health and medical research delivering outstanding economic returns: prevention and containment of multi-drug resistant Malaria

Drug resistant malaria poses major public health challenges across Australia and the region. More than two billion people are at risk of malaria, with more than 50,000 deaths each year. The Menzies School of Health Research in Darwin has undertaken more than 40 clinical trials to address the control and management of malaria. Research conducted with the institute demonstrated that artesunate reduces the mortality of severe falciparum malaria by 35% compared with conventional intravenous quinine[4]. Subsequent research showed mortality benefit for all malaria species causing severe disease.[5]

This research resulted in changes to the WHO's Global Severe Malaria Treatment Guidelines. Evidence from the clinical trial and meta-analyses have also led to the revision of international guidelines for uncomplicated malaria and have been incorporated into national policy in Indonesia and Malaysia resulting in significant public health impacts. For example, at a site in eastern Indonesia these new treatment strategies have resulted in a 60% reduction in malaria, a 50% reduction in hospital admissions, and a 40% reduction in malaria attributable mortality. An independent review recently estimated the economic impact of their work to be around $439 million.[6]

[4] SEAQUAMAT (2005) 'Artesunate versus quinine for treatment of severe falciparum malaria: a randomised trial'. *Lancet*, 366(9487):717-25.
[5] Barber B.E. et al (2013). 'A prospective comparative study of knowlesi, falciparum and vivax malaria in Sabah, Malaysia: high proportion with severe disease from Plasmodium knowlesi and P. vivax but no mortality with early referral and artesunate therapy.' *Clin Infect Dis*, 56:383-97; Rajahram G.S. et al (2016) 'Falling Plasmodium knowlesi malaria death rate among adults despite rising incidence, Sabah, Malaysia, 2010-2014.' *Emerg Infect Dis*, 22(1):41-48
[6] Deloitte Access Economics (2015) *The social and economic contribution of the Menzies School of Health Research*. Available at: https://www2.deloitte.com/au/en/pages/economics/articles/economics-social-economic-contribution-menzies-school-health-research-2015.html

Case study 2 – Using research to influence health system change

The ACTION study was a multi-country prospective observational study led by the George Institute for Global Health. Its aim was to determine the economic burden experienced by households in south east Asia from a first-time diagnosis of cancer. It found that one year after initial diagnosis around 50% of patients experienced financial catastrophe and about a quarter of patients had died.[7] For those needing surgery, around a quarter had not continued treatment after three months.

The findings of the study were tied in with substantial policy translation activities, and in particular, in the Philippines where they were influential in the push to expand services and financial protection for cancer patients and culminated in the establishment of the National Cancer Control Program. This program will, over coming years, provide financial protection and expand access to care for many millions of patients with cancer.

Case study 3 – Australian research improving health outcomes in Southeast Asia - Magic Glasses Asia

Diseases caused by parasitic intestinal helminth worms (hookworm, round worm and whipworm) are among the most common human infections worldwide with more than billion people, mainly in low/middle income settings infected. They present a significant public health challenge in Southeast Asia, as approximately one third of global cases occur there. These infections have major health impacts, causing physical disability, particularly for children, in terms of anaemia, malnutrition, stunted growth and cognitive deficit.

The research team at QIMR Berghofer, University of Queensland, and the Australian National University pioneered the development of an engaging and effective health education package for the prevention of intestinal worms in schoolchildren. The educational package was based on a 12-minute educational cartoon video called *"The Magic Glasses"* (Figure 1). When evaluated the *"Magic Glasses*" health education package showed an unprecedented 50% decrease in infection incidence in intervention. The evaluation also found a two-fold increase in knowledge scores in the intervention schools; and the proportion of students washing hands after using the toilet increased by a factor of two in the intervention group.

As a direct result of positive results from a trial in the Philippines, the Philippines Department of Health are now keen to roll out the Magic Glasses in 3,500 schools in Calabarzon region, an administrative region with a large population of 15 million. If successful, it is anticipated a National rollout would follow.

This research was supported by the NHMRC and UBS Optimus Foundation (Switzerland).

Case study 4 – Build research capacity – collaborations to enhance international clinical trials capacity: HIV-NAT

In the mid-1990s there was limited access to therapeutic HIV treatment in low- and middle-income countries in the face of a growing epidemic, as well as deficiencies in infrastructure and experience in the clinical setting. The Kirby Institute collaborated with partners in Thailand and the Netherlands to establish *HIV - the Netherlands, Australia and Thailand* program, known as HIV-NAT. The HIV-NAT program allowed for the transfer of skills and infrastructure, while conducting essential clinical trials of HIV treatments. Based at the Thai Red Cross in Bangkok, HIV-NAT began its first two trials of antiretroviral therapy by the end of 1996, and very quickly became the focal point for developing new treatments for Asian countries facing increasing HIV rates.

Funding came from a variety of sources, small to start with, but growing to the point where HIV-NAT is now a fully independent centre of excellence and training in South East Asia. The centre has over 100 employees and has completed over 68 studies with 60 more currently being coordinated and has received funding from large government and philanthropic agencies in the US and Europe. Research driven by HIV-NAT has contributed to multiple Thai and international HIV treatment guidelines, and many researchers have been trained and gone on to become leaders in their countries through their roles at HIV-NAT.

[7] Action Study Group (2015) 'Catastrophic health expenditure and 12-month mortality associated with cancer in Southeast Asia: results from a longitudinal study in eight countries'. *BMC Med*, 13(190): 1-11