THE UNIVERSITY OF SYDNEY

REGENERATIVE NEUROSCIENCE GROUP

Tuesday, March 27, 2012

Simon McKeon

Chair

Strategic Review of Health & Medical Research

Re: Submission to McKeon Review of Health and Medical Research

Dear Panel

Please accept my submission towards your review of Australia's health and medical research system. This submission focuses on three of the panel's terms of reference.

Current expenditure on, and support for, health and medical research in Australia.

The Australian government is no doubt aware of the broad and vocal support for medical research following the community's reaction to proposed funding cuts last year. The quantum leap in medical research funding advocated for in this submission is accordingly likely to receive widespread backing and will be difficult to oppose.

Over the last decade, funding for medical research has grown modestly, slightly above the rate of inflation. Whether measured as a percentage of GDP, or dollars per capita, funding has generally been in line with most OECD countries with the notable exception of the USA. In 2006, health research and development funding in Australia as a fraction of GDP was 0.1%, similar to the UK (0.12%), Canada (0.08%) and Norway (0.07%)[1]. Corresponding funding in the US was a qualitative step beyond all other nations, at 0.225% of GDP.

My submission is that Australia ought take advantage of a unique confluence of world events to make a stepwise advance in medical research funding, moving us 'ahead of the pack' and in line with the US by increasing funding to 0.225% of GDP.

A primary reason for urgent action is that most of the rest of the developed world is either fiscally contracting or barely expanding. There is hence immense pressure on medical research budgets around the world. By contrast, the Australian economy is growing strongly, and forecast to continue to do so, and hence provides a once-in-a-lifetime strategic opportunity to place us ahead of comparable nations. This opportunity should not be thought of simply as an exercise in moving up ranking tables – or even increasing research funding for the sake of it – but a chance to boost Australia's *research and health outcomes* to the highest levels internationally.

The second reason is closely linked with the financial pressures being experienced in many countries. There is now a cohort of world-class medical research talent looking for new opportunities abroad with the prospect of medium-term security.

[1] Trends in health and medical research funding. Research Australia, April 2009.

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As a case in point, the Spanish government is currently considering an 8.65% cut to research and development funding, along with a proposed freeze on funding for new research positions and leaving unfilled permanent positions vacated by retiring academics[2]. Researchers within the 'Ramon y Cajal' research programme – the flagship funding source for the best medical researchers in Spain – are already leaving the country because of lack of ongoing funding.

By increasing funding for attracting top international talent, Australia may therefore benefit from a major increase in research capacity in a cost- and time- efficient mechanism. From personal experience, and no doubt supported by statistics, many of these researchers will go on to become citizens and establish long and successful careers in Australia.

Thirdly, there is a general consensus that medical research is a wise investment. Whether measured on near-term dollar returns, or broader indirect benefits to the community, investment in medical research clearly returns above the long term cash rate. Hence, a substantive increase in medical research funding will not only pay for itself, but also lead to knock-on benefits economically, scientifically and help contribute to the enhanced health of our nation.

I submit that the economic and political landscape is ripe for an inter-generational investment in medical research that will continue to benefit Australia for the next 100 years.

Degree of alignment between Australia's health and medical research activities and the determinants of good health.

Australia's medical research funding must not only address the nation's *current* disease burden and health challenges, but also reflect the *predicted* challenges of the next 50 years. In this regard, the ageing of our population stands out as not only the pre-eminent health challenge of our times, but an exigent threat to our way of life.

To underscore this point, I draw the panel's attention to the conclusions of an analysis in *The Economist* (June 25 2009) at the height of the Global Financial Crisis, regarding the economic consequences of demographic ageing:

> "When the IMF earlier this month calculated the impact of the recent financial crisis, it found that the costs will indeed be huge: the fiscal balances of the G20 advanced countries are likely to deteriorate by eight percentage points of GDP in 2008-09. But the IMF also noted that in the longer term these costs will be dwarfed by age-related spending. Looking ahead to the period between now and 2050, it predicted that '**for advanced countries, the fiscal burden of the crisis [will be] about 10% of the ageing-related costs' [my bold]**…The other 90% will be extra spending on pensions, health and long-term care. "

[2] Open letter for Spanish Science: Confederation of Spanish Scientific Societies, Comisiones Obreras, Unión General de Trabajadores, the Federation of Young Researchers and the grassroots Investigación Digna. February 2012.

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Clearly, neither the Australian government nor any other government will be willing or able to expend to the same level as in response to the Global Financial Crisis every 5-6 years just in order to keep pace with servicing the aged population as it does today.

Hence, policy-makers face diabolical decisions over the next 50 years. The alternatives include doing less for the future aged, doing more with less, or beginning a concerted campaign *now* aimed at reducing the age-specific prevalence and incidence of the most common age-related disorders.

My recommendation is therefore to establish a National Healthy Ageing Research Council with the specific mandate to fund high-quality research aimed at reducing age-related disease burden.

This new research council should reflect the magnitude and urgency of the challenge – in my view funding should be at least equal to the NHMRC budget. Such an initiative would attract worldwide attention and further increase the pull-factor for attracting world-class researchers to this area.

This new body would recognize the need for such research to be of the broadest scale, from short term pilot studies of innovative interventions, to long term population-based clinical trials, community risk factor reduction campaigns and knowledge-to-action translational activities.

Importantly, this new council should also have the mandate to perform yearly State-of-the-Nation Health Reports, where the age-specific prevalence and incidence of the five most common age-related disorders would be systematically quantified in order to establish definitive outcomes to track the success (or otherwise) of the nation's medical research effort in combating age-related diseases. For the first time, it will become customary to measure the impact of medical research investment against population-based health. Over time, this is anticipated to lead to a natural selection of research that effectively translates to action.

Strategies to attract, develop and retain a skilled research workforce which is capable of meeting future challenges and opportunities.

Development of the requisite medical research workforce for the coming decades requires the right workforce structure. In my view, the NHMRC's People Funding structure is fundamentally flawed.

According to the 2011 round of NHMRC statistics[3], the following number of personal grants were awarded:

- PhD Scholarships: **130** (45.1% success rate)
- Early career fellowships (junior post doctoral level, Australians plus overseas): **121** (28.8% success rate)
- Career Development Fellowships (mid-career level): **62** (14.5% success rate)
- Established Research Fellowships (Australia Fellowships, NHMRC Research fellowships, Practitioner Fellowships): **92** (32.1% success rate)

[3] 2011 Application Round - Funding and Success Rates for People Support Grants (Excel spreadsheet available at: www.nhmrc.gov.au/grants/outcomes-funding-rounds).

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These figures – typical of funding patterns over a number of years – show there is a tight bottleneck in mid-career funding with a greater number of positions and higher success rate at both more junior and more senior levels. This 'hourglass' workforce structure hard to justify, counter-productive and will adversely affect the medical research capacity in years to come. The current structure is a disincentive for early career researchers to make the transition to mid-career research, a difficult career move at the best of times.

The *relative* over-abundance of senior NHMRC research positions has also in recent years provided an incentive for institutions to encourage their tenured professorial-level academics to apply for personal funding, a cost-shifting exercise that rarely translates to additional research positions at more junior levels.

My submission is therefore to reinstitute the tried and true 'pyramidal' structure for medical research workforce funding. A general rule of an approximate 30% success rate at each level will ensure that the workforce is continually replenished with outstanding candidates, where selection is based purely on merit.

Thank you for considering my submission and please do not hesitate to contact me if I can help the panel in any way.

Sincerely,

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