University of Western Australia Submission to the Strategic Review of Health and Medical Research

Summary:

As a member of the Group of Eight research intensive universities, the University of Western Australia is responsible for the largest share of health and medical research conducted in WA. We believe that as well as national issues of strategic importance there are unique Western Australian circumstances and perspectives that deserve consideration in this timely review of Australian health and medical research. A particular Western Australian handicap is that there has been relatively less state government support for health medical research in contrast to the rest of the Australian sector. We believe that it is no coincidence that those states that have enjoyed the largest injections of state funds into health and medical research have also been those that have enjoyed concomitant increases in their competitiveness for national and international research grants as well as philanthropic support. Initiatives are now needed that effectively level the playing field, ensuring competitiveness and a robust and sustainable health and medical research environment in all states and territories. Australia (especially WA) is well positioned, both by geographical proximity and very similar time zones, to forge stronger health and medical research links with its neighbours to the North. The rapid escalation of Asian universities on global ranking scales of research quality indicates significant opportunity for leveraging and complementing local research efforts. Initiatives by government to facilitate such collaborations can be expected to result in early dividends. More than any other state, in WA we see an ageing demographic of health and medical researchers highlighting the necessity of developing strategies for renewal and the development of secure and well-funded early career researcher training pathways together with increased mid-career researcher support. Finally, UWA offers strong encouragement for the development and funding by government of academic health science centres in Australia as a strategic approach that will ensure a constantly improving health system founded on evidence based practice and enhanced opportunities for translational research.

Response to the Terms of Reference:

1. **Why is it in Australia's interest to have a viable, internationally competitive health and medical research sector? (*Terms of Reference 1 and 6)***

- Australia's health costs are projected to increase from 9.3% of GDP in 2003 to 12.4% of GDP in 2033, mirroring the ageing population and increased burden of disease on our society [1]. Without concurrent increases in investment in health and medical research and research infrastructure, including preventative health, we will not be able to respond optimally to this increased burden of disease.

- The recent Excellence in Research Australia (ERA) exercise confirms that Australia's health and medical research sector is delivering at the highest levels of international excellence and there is good evidence that this directly translates into health benefits for all Australians through disease prevention, better treatments and better health outcomes both in terms of quality and quantity of life [2,3].

- A vibrant medical research sector ensures a skilled and motivated health and medical research workforce making valuable contributions to the national economy. The economic benefits of Australia's investment in health and medical research have previously been explored in depth [4] with consistent observations of tangible benefits. As reported by the Australian Society for Medical Research in 2011 [5] these include adding 98,426 disability-adjusted life years (DALYs) valued at $6 billion, avoidance of $581 million in direct health system expenditure and $385 million in indirect costs (productivity losses etc.) together with commercialisation opportunities of up to $1.6 billion.

- Finally, positioning high quality health and medical research at the interface of teaching and training of tomorrow's health professionals as well as clinical service delivery, ensures excellence in patient care, optimises patient outcomes and attracts and retains the highest quality health professionals to our health care sector.

2. **How might health and medical research be best managed and funded in Australia? (*Terms of Reference 2, 3 and 7)***

- *Levelling the playing field:*
  Despite great potential in terms of the quality of its health and medical researchers, for over a decade there has been a relentless deterioration in the national competitiveness of health and medical research in Western Australia. The percentage of NH&MRC support flowing to WA has decreased substantially from 8.8% in 2000 to 5.5% in 2011, while the per cent of the total research funding pool received by Victoria, Queensland and New South Wales has steadily increased over the same period. This includes project grants, program grants and infrastructure support. For program grants between 2004 and 2010, NSW received approximately 28%, Queensland 16%, Victoria 46% and Western Australia a mere 5%.

  The tyranny of distance and relative isolation may have some role to play in the genesis of this decreased competitiveness with less opportunity for collaboration and engagement in decision making processes around resource allocation. However a much more likely contributor is the large differential seen in State government support for health and medical research around Australia. In WA in particular there has been relatively less state government support for recurrent costs and equipment in contrast to the rest of the sector. As examples, the Queensland state government through its "Smart State" initiative has been involved in establishing 36 new Queensland research institutes since 1996, a $25 million Health and Medical Research Program and a dedicated Office of Health and Medical Research and Development. The Victorian state government is making a major commitment to the Bio21 collaborative cluster of 22 Melbourne institutions, including universities, health services, and medical research institutes. In addition, the Traffic Accident Commission (TAC) in Victoria has contributed significantly to neurotrauma research, namely spinal cord injury and related neurological conditions (2006-2011: $60m + $3m from the Victorian State Government; 2011-2015: $20m from TAC). Similarly, the NSW State Government has committed $25m funding to neurotrauma research since 2003. The New South Wales Government through the NSW Cancer Institute has invested around $30m on cancer research in the 2009/2010 financial year and the Victorian Government's Cancer Agency has committed $78.8m over four years (2008-2012). Such state government support has ensured access to cutting edge equipment and resources, the attraction and retention of the highest quality research staff and sustainable infrastructure models for the ongoing health and medical research effort, thereby providing leverage for enhanced competitiveness for peer-reviewed federal funding.

  To ensure that all Australians have access to the best health care, initiatives are now needed that effectively level the playing field, ensuring competitiveness and a robust and sustainable health and medical research environment in all states and territories. Such initiatives could include federal research funding being made contingent on matched support at a state level. Initiatives to grow philanthropic support also need encouragement and should include federal and state based programs to match any large scale donations to health and medical research. As recommended in the Larkins report to the Department of Health (WA) such support could be sourced on a recurrent basis from the establishment of specific sovereign wealth funds, especially in resource rich states like Western Australia [6]. The establishment of such initiatives will ensure that the current international quality health and medical research effort at UWA is realizable long into the future, and that we continue to provide a stimulating and supportive environment for our early and mid-career academics as the leading researchers of tomorrow.

- *A focus on collaboration in the zone*
  Australia (especially WA) is well positioned, both by geographical proximity and very similar time zones, to forge stronger health and medical research links with its neighbours to the North. The large scale investment of the Chinese and Singaporean governments in particular into biomedical research and the rapid escalation of Asian universities on global ranking scales of research quality indicate significant opportunity to leverage and complement local research efforts. Initiatives by federal and state government to facilitate such collaborations could be expected to result in early dividends, enhancing

local productivity and research excellence and the provision of multidisciplinary research opportunities and access to top class research facilities and infrastructure.

- *Improving quality, equity and efficiency in the grant application review process*
  There is general consensus in WA of an inconsistent quality of NH&MRC peer reviews as well as inconsistency in the numbers of reviews per grant. We need a better process for assessment of the quality of peer reviews that are offered. Broadening the process to include much more international peer review, remuneration of those engaged in the peer review process and consideration of international chairs for each of the discipline panels are strategies that should be considered to improve quality and equity in the grant application review process. The changing profile of universities with increasing student numbers, increasing student to staff ratios, increased workload pressure on those attempting to remain at the cutting edge of national and international research, increased time pressures on participation on the national stage (especially in distant states like Western Australia), all demand an increased efficiency in the currently time consuming and highly demanding peer review process. At present a disproportionate amount of time is spent on lengthy grant applications rather than research, especially given that only just over 20% of all applications are ultimately successful. Increased efficiency in the system will increase capacity for more productive research and reduce time for grant outcomes to be announced. Unifying the ARC and NH&MRC grant application systems i.e. GAMS and RGMS respectively, is just one approach that could save a considerable amount of researchers' time, avoiding the duplication of data input that is currently necessary.

- *Uniform interpretation by animal ethics committees of NH&MRC guidelines*
  The NH&MRC Australian code of practice for the care and use of animals for scientific purposes are not uniformly interpreted by animal ethics committees across Australia despite being national guidelines. Ensuring conformity across all states would bring consistency to the application and approval processes. The establishment of clear and standardised interpretation of the Code would expedite these processes while the sharing by researchers of ideas and protocols across the nation can only lead to better animal welfare as well as to a reduction in the workload currently involved.

- *The widening NH&MRC salary funding gap*
  At present inadequate funding of NH&MRC researchers is built into the system with the gap between award rates at each institution and the salaries provided by the NH&MRC support packages widening each year. As can be seen from the table below, this has meant that at the University of Western Australia, for example, a successful NH&MRC grant provides only half the salary for a PSP3 to PSP5. Other universities and research institutions suffer variously from the same shortfall in funding.

Personnel Support Packages 2011	**$ per annum per 2011 PSP**	**UWA approx salary level 2011**	**UWA Salary plus On costs**	**Gap**	**% of PSP**
PSP3 - Experienced graduate research assistant/Junior postdoctoral research officer	69,891	LVLA Step 8 PhD start 77,328	101,290	31,138	45%
PSP4 - Experienced postdoctoral researcher (i.e., a researcher who would normally be considered as a named investigator on the research application and/or approaching the NHMRC CDA scheme or equivalent)	82,551	Top of Level B 96,663	126,290	43,739	53%
PSP5 - Senior experienced postdoctoral researcher (i.e., a researcher who would normally be considered as a named investigator on the research application and is more than 10yrs post doctoral and/or would be expected to have applied for or held an NHMRC CDA or equivalent)	88,881	Level C step 2 (10yrs post starting with a PhD) 102,766	134,263	45,382	51%

3. **What are the health and medical research strategic directions and priorities and how might we meet them? (*Terms of Reference 5, 12 and 13)***

- *Strategic priorities*
  Funding and policy for research should focus on the chronic disease burden in Australia as well as on new and emerging diseases while being simultaneously cognisant of our local capabilities, opportunities and gaps.

- *The health and medical research career pathway*
  One of the highest priorities in Australian health and medical research should be to support new and early career investigator research programs that ensure a secure career development pathway. More than any other state in WA we see an ageing demographic of health and medical researchers highlighting the necessity for renewal if a high quality research effort is to be sustained into the future. We need to provide a career pathway that makes health and medical research a sustainable and achievable career track with maximum opportunity for creativity and innovation. At present as a career choice, health and medical research is precarious at best with inadequate funding for early career researchers (ECR) and job insecurity. It is taking more time for researchers to achieve independence, thus the definition of an ECR needs to be revisited. Together, prolongation of the period before lead investigators are becoming independent and a limited definition of what characterises an ECR, mean limited access to current ECR support programs and ultimately a drought of established mid-career researchers as we increasingly lose talented trained researchers from the system. A clear statement on this will set a national benchmark that can be used for all grant giving bodies; government or not-for-profit organisations alike. We need to not only expand ECR access and support but to simultaneously develop a program grant process that supports and encourages independent researchers and their associated teams at the mid-career level, without them having to compete against elite established investigators for survival, the situation that currently exists. This problem of inadequate and insecure training pathways is particularly acute in the case of future clinical academics. Integrated clinical academic training pathways with guaranteed employment at their conclusion as well as increased opportunities for practitioner fellowships offer some potential solutions.

How can we optimize translation of health and medical research into better health and wellbeing? (*Terms of Reference 4, 8, 9, 10 and 11)*

- *Academic health science centres*

Internationally the development of academic health science centres (AHSC's) is increasingly being seen as a strategic approach that ensures a constantly improving health system through enhanced evidence based practice, translational research and preventative health research. Academic health science centres with systems in place to ensure that universities, medical research institutes and hospitals work together in either closely affiliated or integrated models need to be developed in Australia [7]. They have been consistently demonstrated to deliver research and research translation that provides better patient care and improved community health outcomes. Given that the highest quality research and research training environment is integral to the delivery of the highest quality healthcare, we should be aiming to deliver AHSC's across all states – not just where the resources for health and medical research in terms of people and infrastructure are already concentrated.

- *Strategies to encourage research collaboration*

It is crucial that government support for independent basic and translational research work is strengthened and maintained. Relying on commercially driven research will not meet the needs of our health care burden, in particular in areas such as basic science research ("blue sky"), population health research, health service and supportive care research, and research into rarer conditions or those affecting the most under-privileged Australians. Moreover encouraging research collaboration both

across the country and internationally should be the core business of government sponsored research. Sharing ideas, technologies and discoveries is the key to improving human health and should be seen as perhaps the most vital agenda of any government.

References:

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