

SUMMARY: Please find below a brief submission on my views on matters relating to health and medical research in Australia. In the interest of brevity, I have addressed those terms of reference for which I have particularly strong views, some of which have arisen from my experiences in biomedical research over the last 2 decades. Due to limits in time availability, I provide only opinions (rather than factual observations and comparisons), but believe that at least some of these are opinions that are widely held by many in the biomedical research community in Australia. These opinions relate to alternative approaches to improve management of research funding and to develop new preventative measures to improve human health.

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

In my view, some aspects of Australian health and medical research could be managed and administered much more efficiently to expedite high quality medical research:

1. The great majority of medical research in Australia is driven by 3 year NHMRC project grants. This short time frame is not at all conducive to the most productive research outcomes. It is a reality that most medical researchers in Australia who are funded by 3 year NHMRC project grants focus on publishing papers within the first 2 years of having a grant awarded, in order to demonstrate productivity for future grant rounds. This model fosters mediocre/incremental research and a failure to apply research findings to new approaches to improve human health. Essentially, it means that medical researchers end up focusing too much of their efforts on finding ways to continue their careers (i.e. survive in biomedical research) and too little of their efforts on trying to generate research findings that will lead to measurable impacts on human health. It is true that researchers are able to apply for 4 to 5 year grants within the current NHMRC project grant system, but the reality is that very few researchers do, and these grants are rarely awarded. An alternative model is a 5 year project grant cycle, with fewer grants being able to be held by an individual researcher e.g. a maximum of 3 or 4 project grants that are all of 5 years in length, rather than the current maximum of 6 project grants (which are almost always 3 years in length). Such a model would have modest budgetary impacts (because of the reduced number of grants that can be held by an individual), but would be likely to lead to several improvements including: (1) encouraging high quality, innovative research, rather than incremental advances in knowledge (because the 5 year time frame would not demand immediate and low impact outcomes); (2) translation of research findings into new approaches to improve human health; (3) some level of stability within biomedical research laboratories for researcher employment, which would have enormous impacts on research productivity; and (4) reduced administrative burdens on medical researchers (reduced number of grant applications to write and review). The last point is particularly important: currently, biomedical researchers spend far too much of their time writing grant applications (~1 – 2 months per annum) and reviewing grant applications (~1 – 2 month per annum). This represents a huge burden on the medical research community (~ 2- 4 months per year i.e. up to 1/3 of a medical researcher's research time), which severely reduces research productivity, and thus the opportunity to generate research findings that have the potential to improve human health. Indeed, biomedical researchers in Australia are typically faced with an ever spiralling administrative workload – finding ways to reduce this, such that medical researchers can spend more time on medical research and less time on administration, can only lead to positive outcomes for health and

medical research. There are obviously many potential impediments to the 5 year project grant model, but I believe that all of these could be overcome through carefully devised strategies e.g. introduction of a separate pool of funds for new investigators for 3 year grants (to ensure that early career researchers have opportunities, but must generate productive research outcomes before moving into the 5 year project grant cycle).

2. In the last 10 years, philanthropic funding has primarily been devoted to the establishment of new research institutes/buildings. The capacity to fill these institutes with high quality research staff is limited by funding opportunities for people support. I believe that this will lead to a crisis point in biomedical research in Australia within the next 10 years – we will essentially have shiny new biomedical research institutes dotted around the country, with nobody working in them! It is crucial that government organizations work with Universities and Research Institutes to change the philosophy of philanthropic funding. An absolute imperative is the funding of people (e.g. fellowships) by philanthropic organizations in the years ahead. Without this, the infrastructure investment in biomedical research in Australia over the last 10 years will be completely wasted. We have an opportunity to capitalize on this recent infrastructure investment through philanthropic funding of people support, and we as a nation should develop clear strategies to ensure that this happens.

What are the health and medical research strategic directions and priorities and how might we meet them?

(Terms of Reference 5, 12 and 13)

Chronic diseases such as cardiovascular diseases have now taken over from infectious diseases as the biggest health problem that we face globally (having said this, we cannot take our eye off infectious diseases that have the potential to rapidly sweep across the globe, particularly with the neglect over the last several years in developing new front line defences such as antibiotics). In the face of chronic diseases such as obesity, diabetes, atherosclerosis and cancer, I believe that we need a two-pronged approach. We must continue with biomedical research approaches aimed at developing new therapies, because we cannot neglect those people that are currently, or will be, burdened by such diseases. Included in such approaches, is the need for fundamental biological studies at the molecular, cellular and organismal level – such approaches can often lead to therapeutic avenues in the long term, even though they often do not necessarily start with the goal of developing therapeutics. This aspect of scientific research has been neglected, to the detriment of all, in recent years – the emphasis on translational research has reached a point that is unbalanced. In addition to biomedical research, positive health outcomes require an absolute commitment to education, in particular, childhood education. Many of the diseases that we now face are clearly driven by inappropriate lifestyle choices. Education at an early age is essential if we are to prevent these diseases. I believe that education of parents and children, aimed at prevention, is the best possible avenue for improving health outcomes in this country, and this should be aggressively pursued in the years ahead. I personally am very disappointed by the lifestyle choices that people in lower socio-economic circles are forced to face – the rising costs of fresh fruit and vegetables does not at all compare favourably with the cheap costs for the endless lines of junk food that are readily available. Chronic disease is an inevitable consequence. I would love to see the large multi-national fast food companies slugged with a junk food tax – the revenue raised could be fed into biomedical research and/or subsidizing the costs of fresh fruit and vegetables. I know it will never happen, but it's nice to dream.....