

## Submission to the Strategic Review of Health and Medical Research in Australia

This submission is the result of consultation with a number of scientific personnel and members of the public — primarily through a series of public forums on science and research in Australia held by the Australian Democrats, and also via correspondence and personal communication. This includes scientists in academic research and industry, administrators of philanthropic organisations, policy makers at a state and federal level, and patients and families of those who have been the beneficiaries of medical research outcomes.

I believe that the Australian government must recognise the importance of having an internationally competitive health and medical research sector, first and foremost because international competitiveness is arguably the most sensible gauge as to whether we are able to meet our own future needs in public health and medical care. These future needs arise from the long-term needs to have an internationally competitive workforce and attractive lifestyle, and these factors in turn depend upon the level of healthcare to which Australians have access.

It is the case that a country tends to have better access to the outcomes of domestic medical research than of foreign research — better in terms of cost, available expertise, deployment, or even just awareness. Therefore, if we wish to have a workforce and lifestyle comparable to that of other countries in the future, we must have a medical research sector that operates at a level comparable to that of other countries now.

The strength of our research sector entails other benefits for Australia that can be realised sooner than this, though. As the quality of our research increases we become more attractive to researchers from other institutions, who bring with them new ideas, techniques and expertise. This leads to more, and better, outcomes for the research itself, as well as opening up new paths of research to follow. Science has only ever benefited from a more frequent and more liberal exchange of ideas, and if Australia can help to foster this exchange, we will not only see our own level of research and development rise, but we will be better able to participate in a global effort to advance medical research as a whole.

There are, however, a number of factors that are currently holding Australia back in health and medical research. Any formulation of new approaches to funding medical research in Australia should be coupled with an overhaul of the existing systems that currently serve to discourage existing and potential researchers from pursuing a research career in Australia.

Take, for example, the two most significant funding sources for medical research in Australia: the National Health and Medical Research Council's (NHMRC) and the Australian Research Council (ARC)<sup>1</sup>. One recent study characterised NHMRC funding as “costly and somewhat random”<sup>2</sup>, and in the 2012 round of ARC Discovery Projects only 20% of projects were funded. The low rate of success and high level of uncertainty when applying for grants means that researchers must apply for multiple grants across multiple systems to ensure any chance of continuing in their career. Since it can take up to a month of full time work to prepare such an application, researchers can end up spending several months out of the year writing grant applications alone — this can hardly be

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<sup>1</sup> Research Australia, 2011, *Shaping Up: Trends and Statistics in Funding Health and Medical Research*, Occasional Paper Series: Two, Melbourne.

<sup>2</sup> Graves, Barnett and Clarke, *Funding grant proposals for scientific research: retrospective analysis of scores by members of grant review panel*, BMJ 2011

considered the optimal use of their time. Conversely, if researchers write fewer grant applications, they risk losing income until the next round of grant allocations, or even ending their career prematurely.

Further to the low chances of success in obtaining funding, the funding that is allocated under these systems only covers a fraction of the true cost of the work. For example, the NHMRC can award a level 3 personnel support package to fund an “experienced graduate research assistant/junior postdoctoral research officer” — in 2011 this package comprised \$67 508 to cover a year's research. But the salary level for such a researcher at the University of Western Australia in 2011 was \$72 160 p/a, and on-costs (such as superannuation and long-service leave) bring that to \$94 277. There will also be indirect costs (also known as “infrastructure costs”) to cover specialised equipment or access to such, consumable resources or extra support staff. Funding from the ARC has a similar problem, with all 2012 Discovery Project grants allocating only 50% of the funds that were requested *for every project*.

Any and all shortfalls must be sourced by the researcher themselves, and if they are unsuccessful in finding the extra funding, they cannot use the funds that are allocated at all and will be unable to continue their research. This is yet another factor that reduces the amount of time researchers spend on actual research, and contributes to a lack of job security.

Every single researcher and administrator I have spoken to has cited a lack of job and income security as the single biggest factor discouraging potential researchers from taking up a career in medical research in Australia. Potential researchers and early career researchers are disheartened and discouraged from any kind of career in medical research, and either leave the field to work in non-research industries or leave the country to pursue a research career elsewhere.

There is also the fact that these problems contribute to a highly risk-averse approach to medical research in Australia — bold new directions of research and untested ideas are not as sure to secure funding, and so are rarely taken up. This is highly detrimental to the breadth of outcomes that may result from such research, it is quite demoralising for the individual researchers themselves, and makes Australia a far less attractive place for overseas researchers.

Senior research administrators have told me that their biggest fear is that we will simply not have an adequate workforce for medical research in Australia in the future — not just against the standard of “meeting our future needs”, but to sustain any reasonable level of health and medical research at all.

The problem that I believe needs to be addressed over any other, therefore, is ensuring that we actually have a future workforce for medical research in Australia. This could be achieved, at least in the short term, by fixing problems in our current systems with a view to making a career in medical research attractive to potential entrants. We could increase the reliability of funding for early career researchers, perhaps by having a system where we fund individual researchers for a longer period of time instead of operating on year-by-year project basis — this has the advantage of not requiring significantly higher levels of funding. Including indirect costs in the funds provided by the NHMRC and ARC would provide more security for researchers and minimise time wasted trying to find money from other organisations to cover such costs.

Finally, in the context of translating research into real outcomes in health and wellbeing, it is vital that wider problems in acceptance of these outcomes be addressed. A specific example might be found in the continual campaigns against vaccination — the success of making an incremental improvement to a vaccine that might improve or save a hundred lives is somewhat diminished if another hundred people decide they're going to forgo vaccination altogether because of myths and scaremongering.

Strategies to implement research results need to be supported by programmes to clearly communicate the benefits and risks to all stakeholders in both the research and in the eventual implementation. This includes not just the expected beneficiaries of medical treatment, but their

families and friends, taxpayers who fund the bulk of the research, philanthropic donors, researchers themselves and the general Australian public.

Such efforts in communication need to be more than the traditional “flyer in the doctor's office” — they need to target people in various emotional states, they need to cover various levels of technical knowledge and they need to explain subtle scientific concepts. It is not enough to simply have a single overly-generic, broadly targeted leaflet for each medical issue or treatment. They should range from simple explanations of how the risk of medical treatments in general are measured, to outlining the underlying science of a specific technology. There need to be multiple approaches covering different forms of media and targeting different audiences, and they should incorporate input from researchers, patients, medical staff and support groups.

In other words, any plan to deliver the results of medical research to Australians that does not also outline serious strategies to improve *acceptance and appreciation of these results* cannot be considered to be complete.

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