

## A defining moment for medical research beyond 2015

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### EDITORIAL

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In a powerful speech at the National Press Club in April 2015, Warwick Anderson, the retiring director of Australia's National Health and Medical Research Council (NMHRC), outlined six major challenges to the status quo in medical research:<sup>1</sup>

1. There needs to be a clear link between research and improving outcomes for patient care. In every other industry, innovation serves the end user of products and services. Not so in health care. At a cost of AUD \$140 billion per year, health care is a substantial drain on resources in Australia, as it is elsewhere in the world.

Prof Anderson said: "Turning the research into guidelines for policymakers and practitioners is currently done in an ad hoc, piecemeal fashion. Of the more than 1,000 clinical guidelines in Australia, only a minority have been developed with rigour and are demonstrably free of vested interests."<sup>1</sup>

I suspect the issues are of even greater concern. Research monies are substantially expended on repeating studies without agreement on how the research could directly benefit patients. To make an appreciable contribution to health, research must address real world problems. The recurring themes at primary care research conferences have hardly changed in decades. Many projects are exploratory, and

despite a plethora of peer-reviewed publications, they hardly ever result in tangible solutions.

2. The best talent is leaving research. In his speech Prof Anderson focused on the gender imbalance with a marked shortage of women in research leadership positions.<sup>1</sup>

The reality is that research leadership develops over time and many institutions are driven to have researchers with substantial competitive national grant income on their books at about the time they are being audited for funding purposes. We only need to look at the experience of the United Kingdom (UK) where researchers knew that the best terms and conditions were available at struggling institutions about to undergo the Research Assessment Exercise (now the Research Excellence Framework).<sup>2</sup> It is a bit like the football league where lucrative transfer deals are struck before the season. Therefore, there is a perverse incentive in hiring people who are already successful leaders.

If there is a problem with retaining research leaders, it is a mammoth problem in primary care where it is difficult to compete for university positions, but even more problematic because the pay and conditions for researchers cannot compete with the earning potential in clinical practice. In practice, the public has greatest contact with primary care practitioners and rarely go to hospital. Whereas we often hear about medical research, it is seldom with reference to primary care. The issue of research is even more problematic in primary care where many authors publish their results in journals of modest impact factor and where the impact on health care is less easily demonstrated at a national level. There is a brain drain between institutions, but especially to the clinical sector.

3. "Australia has more than 50 independent medical research institutes. Yet almost two-thirds of medical research is conducted at just seven universities and a further 17% at the sixth-largest medical research

institutes. The remaining 20% or so is spread around more than three dozen other independent medical research institutes and more than 30 universities.”<sup>1</sup>

This is hardly surprising. Every university is competing for resources. Each wants to attract the brightest and the best. When nationally competitive research income is followed by other government investment there is an incentive to set up research centres of “excellence”. The best students will sign up to be taught by the most recognised and accomplished staff. There is hardly any incentive to collaborate between institutions and where there is “collaboration” there is a real risk that one of the partners will be perceived to benefit more than the others.

4. “Using the argument that applying for grants and peer reviewing wastes time, the ‘father knows best’ school urges that NHMRC stop all this peer reviewing and just give them the money because they are wiser than everyone else. In short, it’s a wish to return to the old days when NHMRC gave institute directors a large amount of funding and then left them to decide how it should be spent internally.”<sup>1</sup>

In a country with a relatively small research community, the issue of conflict of interest is problematic. As Prof Anderson has recognised, the majority of researchers are employed by seven universities. Peer review relies on the individuals from these institutions conducting review blind to the identity of the applicant. It is true that applications are de-identified, however, in theory, anyone who has the expertise to assess the science would also be able to guess the origin of the application. Therefore, we may already inhabit a world where the institute directors are able to exercise considerable influence on where the money is destined after each round of “independent peer review”.

5. “My next point relates to early career researchers. Let’s do train lots of PhDs, but train them too for many careers, not just full-time research. A full-time, lifelong career in research can only ever be available to a proportion of the hundreds of biomedical and life science PhDs we produce each year.”<sup>1</sup>

There can be hardly any argument with this. PhDs and other higher degrees by research graduates need to be able to make a contribution in a variety of ways, not just in the laboratory, but in many other roles. The question is: are they prepared during their training to take on these alternative positions? Are PhDs advised on the day they enrol that the unique and new contribution to the science they are about to make may

be the only significant piece of research they will ever undertake? What other roles are we talking about? Prof Anderson mentions more researchers working in government and the public service, in non-government organisations (NGOs) and the community sector, and in teaching.<sup>1</sup> These are excellent suggestions; indeed, many, if not most of the candidates I have supervised have ended up in such roles. However, their preparation for life after PhD was based on developing leadership skills alongside research expertise. It is not clear if universities that offer PhD programmes are bolting leadership skills to their curriculum. And if they are, who is taking responsibility for those lessons and are they qualified to supervise PhDs as leadership role models?

6. “I have talked a lot about using science and the outcomes of research more rigorously in health care. So it’s distressing when unscrupulous people exploit the sick for their own personal gain, selling products that have no hope at all of helping the patient.”<sup>1</sup>

The speech did not make a specific reference to examples of the sort of thing that is of concern to Prof Anderson. However, there are very worrying trends as to what the public will accept as acceptable in health care. What makes this worse is that so many “technological innovations” are now available that have never been formally evaluated. And yet millions of dollars in profits are posted by companies that offer these “innovations”.

It seems that people want the “Uber of health care”.<sup>3</sup> Change is already afoot we are advised:

*Instead of waiting weeks to see your doctor when you have a cold, you can now go to your local drugstore, see a nurse, pick up your medications and be home in an hour.*<sup>4</sup>

It is assumed that it is appropriate for anyone with a “cold” to make do with this version of health care. Perhaps it is. However, a “cold” is a diagnosis. Symptoms are a different matter. Is it safe for anyone who experiences a persistent dry cough and a temperature to simply buy a cough linctus? At what point can a cough and temperature be labelled a “cold” (i.e., minor self-limiting condition) and not “pneumonia” (potentially life threatening)? Those who cannot afford the “uber service”—a suitably qualified and experienced health professional at their beck and call—may have to make do with something much less satisfactory. Perhaps the alternative is a video consult.

*If you have a problem that might not necessarily require a healthcare professional to be physically present—say, for example, you are having an acne flare-up or you want to know why you get nauseous when you eat cheese—you can opt for a video consultation for \$50.<sup>3</sup>*

Perhaps the answer is to avoid cheese and \$50 is a substantial sum for the parents of many teenagers I consult in my practice. Their visits are covered by a government fee and they do not incur out-of-pocket expenses. It may certainly be inconvenient to drag your teenager to the clinic after school and to occasionally have a long wait before it is your turn to consult the doctor. However, if doctors could make a better living working online, then they will be less available to those who may have a greater need but cannot pay. In the drive to make health care more convenient we could introduce both inequity and risk. Those who design such reform need to understand the business of doctoring and not just the profit margin. General practitioners in Australia have already expressed the view that there are limited circumstances in which a video consult is appropriate.<sup>5</sup> There is a market for on-demand medicine, facilitated by technology, but the potential downside includes:

1. Soaking up capacity to provide services to those who cannot afford it.
2. Risk to those who may not receive the correct diagnosis.
3. Worse outcomes for those who are most vulnerable in society.
4. Generating demand for advice about conditions that are better managed without recourse to health professional time.

We should certainly respond better to the needs of people who attend general practitioners daily. We risk throwing the baby out with the bath water, however, if we do not consider why people need these services. There is great scope to do more good, but introduce the profit motive as primary and someone will lose out. Better not those who already have little or nothing.

Prof Anderson highlighted the six key challenges for medical research in Australia and beyond. To rise to the challenge, we need to hear the views of those who work in that industry because I suspect the solutions may require a radical review of what we deem to be worthwhile research and how we incentivise the tertiary care sector to host the talent that drives progress. There are many vested interests that may fear the brave new world ahead.

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## PEER REVIEW

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