

The Panel is calling for written submissions on the following questions:

Why is it in Australia's interest to have a viable internationally competitive health and medical research sector?

Medical research is under threat worldwide. In the long term this will lead to a shortage of outstanding research departments able not only to attract the world's brightest minds but also to focus on and develop appropriate medical interventions which result in substantial improvements in the quality of care currently available. A strong and vibrant research sector leads to opportunities to attract national and international funds for research, particularly within the medical area. Internationally there is a general downgrading of support for medical research, largely as a side effect of the global financial crisis. This provides an opportunity for Australia to repatriate many of its brightest scientific minds. This should also act as an incentive to our recent university graduates to stay within the country and work in the medical research sector. The cost of importing research infrastructure and know-how into Australia is substantial. To have this available within our own geographic region, and particularly within our own country, makes adopting, developing and sustaining important medical innovations a much more viable option.

The ability to develop safe and effective devices, techniques and treatments with adequate evaluations and then deliver them to the Australian population, and ultimately the worldwide community, should be a key national priority. In many areas Australia has difficulty competing on the international stage. This is particularly the case now with a rising Australian dollar. However, within the area of health and medical research we have a publication output well above what would be expected from a population of our size and we should build on this to become a focussed, successful research hub within the sector. As Australia moves towards the adoption of a unique patient identifier and electronic records we have the opportunity to develop a valuable testing ground for new interventions both within surgery and the pharmaceutical sphere. This opportunity is something many other countries would have great difficulty in harnessing. This will also enable local solutions to local problems, facilitate a regional leadership opportunity in the Asia-Pacific, and provide economic benefits from innovation and development.

Retaining the top academic scientists and clinicians in all areas of health and medical research is critical, and support in their earlier years as they establish their research groups is essential.

How might health and medical research be best managed and funded in Australia?

It is important that all reputable research groups within Australia are given equal opportunity to apply for research funding. In many instances, the larger, well known groups are able to obtain funding from sources that exclude smaller groups with less experience. The Nobel Laureates, Barry Marshall and Robin Warren, are good examples of outstanding researchers who were unable to obtain funding from the National Health and Medical Research Council yet went on to gain the ultimate validation of their work.

It is vital that Australia recognises not only the value of large-scale, co-operative, collaborative initiatives but also the extraordinary resource of individuals who have an idea which they are able to develop and, as in the case of Marshall and Warren, deliver a huge health benefit not only to Australia but to the world. This is a difficult challenge to manage. At present there is a preoccupation with large research groups and collaborative initiatives. While these are an enormous resource and represent great expertise, they should not be supported at the expense of enterprising individuals who can also deliver important health gains.

It is also important to note that not all research groups require large sums of money. One recalls the likes of John Snow, who first traced the outbreak of cholera to a water pump in the Soho district of London, and achieved this simply by mapping the cholera cases using a geographic information system. While in 2012 the world is a more complex environment, the ability to fund small innovative groups is no less important. More innovative techniques which enable access to statistics, infrastructure and some basic pieces of equipment to facilitate novel research concepts should be more actively explored.

An increase in funding for R&D as a percentage of GDP must occur. An increase in the proportion of funding for clinical research, where the benefits are more readily obtained, should be a key consideration, rather than a focus on basic research. Research should be core business in health and should be better funded.

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

The purpose of research should be to identify health priorities and those solutions which address these priorities in the most cost effective manner. A greater emphasis on clinical research and health services research, including research training and the development of career pathways for the research workforce, is critical.

Research focussed on the economics of healthcare, particularly what is cost-effective and has cost-utility is important. Insistence on higher quality clinical research, multicentre clinical trials to answer questions that cannot be answered in isolated centres and evaluations, will provide significant benefits to the health sector.

Research aimed at reducing the burden of disease in Indigenous communities and closing the gap between the health of Indigenous and non-Indigenous Australians has to be a priority. Improved access is a clear priority and there must be greater research in the area of health service delivery.

How can we optimise translation of health and medical research into better health and wellbeing?

Dedicated research centres, which monitor the process of translating health and medical research into better public health and wellbeing, are essential to reliable, reproducible and verifiable research. These centres must be adequately funded and be able to oversee device, technique and pharmaceutical developments as well as undertake clinical trials of such products. They need not only to provide leadership within the basic research sector and then translate this into clinical practice, but also establish more effective ways of disseminating knowledge gained, providing the teaching and education that help implement the research findings.

There is a substantial gap between the gaining of new knowledge and its translation into clinical practice. This gap often leads to poorer health outcomes for the population at large, particularly if it occurs over a long period of time. Recent examples abound. The lack of a proper registry for the French breast implant has meant that its disadvantageous outcomes have taken longer than necessary to become apparent to the surgical community. In contrast, the existence of a well-designed joint registry in the form of the Australian Orthopaedic Association's National Joint Registry enabled prompt identification of hip joints that were failing to deliver the outcomes expected. Translational health research, therefore, is not just about bringing new developments into practice; it is also about monitoring and enhancing them on the basis of well-designed registries and audit processes able to identify improvements required and to detect poorly performing interventions as they gain widespread application outside of the clinical trial environment.

Health care is a major cost within the Australian budget, and methods of delivering cost effective medical care will be vital to the sustainability of healthcare, not only in Australia but internationally. While our population is relatively small, it is large enough to answer many if not all of the questions related to major healthcare problems. Unified systems across states, common datasets, unique identifiers and electronic health records are needed if we are to optimise our population's capacity to develop the translational potential of our research.

Translational research should be done by those institutions with a proven track record. Evaluating surgical techniques and devices using high level evidence before introducing them into the health sector is critical. The formal evaluation of medical technology is currently inadequate; this is an area where the College of Surgeons and University Departments of Surgery can provide national leadership, if given the opportunity.