



Australian Vice-Chancellors' Committee
the council of Australia's university presidents

***Investment Review of Health and
Medical Research***

AVCC Submission

December 2003

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The 1999 Wills Report¹ has provided Australia with a strategic blueprint for maximising the social and economic returns on our investment in health and medical research. The establishment of a comprehensive implementation framework² and the doubling of public investment in health medical research over five years, focussed on collaboration, national research priorities and workforce measures, have been key planks underpinning this commitment. But, as the Wills Report foreshadowed, while this will make a substantial difference in our capacity to pursue excellence in health and medical research, it is a modest increase in world terms.

The challenge now is to build strategically on the strong foundations of the Wills initiatives to ensure we sustain and grow an effective health and medical research sector built on high impact fundamental research, a world-class workforce, and targeted support for infrastructure.

These themes are at the core of the Australian Vice-Chancellors' Committee's (AVCC) vision for 2020 – that “Research excellence will be found in all Australian universities, with a focus on key priority areas, extending basic knowledge, and innovative research and development”³. They are integral to the policy positions the AVCC has recently articulated in its submissions to each of the major research-related reviews initiated by the Minister for Education, Science and Training: the evaluation of the *Knowledge and Innovation* reforms; the review of closer collaboration between universities and major publicly funded research agencies; and the National Research Infrastructure Taskforce.⁴

This submission draws on the AVCC submissions to the major research reviews referred to above, as relevant to the Investment Review of Health and Medical Research, and to the National Health and Medical Research Council (NHMRC) in particular. Individual AVCC member universities will make their own submissions which are likely to address the more the specific questions put and issues raised in the review's terms of reference and submission template.

¹ *The Virtuous Cycle: Working together for health and medical research* (1999)
<http://www.nhmrc.gov.au/wills/hmrsr/oldindex.htm>

² *Enabling the Virtuous Cycle: Implementation Committee Report* (2000)
<http://www.nhmrc.gov.au/wills/hmrsr/evcsynopsis.htm>

³ *Positioning Australia's Universities for 2020: An AVCC policy statement*
http://www.avcc.edu.au/news/public_statements/media_releases/2002/2020.pdf

⁴ The AVCC submissions to these research reviews are available at
http://www.avcc.edu.au/policies_activities/research/gov_reviews/index.htm

In line with the Investment Review's three broad terms of reference, this submission focusses on:

1. the impact of the increased support for the NHMRC on health and medical research outcomes;
2. the appropriateness, effectiveness and efficiency of the current level of investment in the NHMRC; and
3. future directions and priorities for our health and medical research.

Recommendations

1. Australia should set a research and development target of 2% of GDP by 2010, and 3% by 2020.
2. Australia must meet the challenge of ensuring flexibility and capability in national health and medical research by:
 - continuing the growth in the NHMRC's capacity to support excellence in health and medical research initiated by the Wills Report;
 - providing for a level of professional and administrative support for the NHMRC that enables the Council to fulfil its charter and to ensure the optimum return on the nation's investment in health and medical research;
 - ensuring that the NHMRC's policy framework continues to support and grow the international quality of our health and medical research, researchers and research students across a wide range of fields both within and outside the NHMRC's specified priority areas and the national research priorities; and
 - ensuring that Australia's pluralist research framework is underpinned by reinvestment in the research base and the research building capacity of universities.

1. The impact of the increased support for the NHMRC on health and medical research outcomes

The Government signalled from the outset of the Wills Review that its strategy was long-term, the focus being the future role of health and medical research up to the year 2010.

The first tranches of the initial five-year investment, commencing in 2000-2001, were modest, with increases yet to peak (increasing by \$614 million by 2005-2006). Therefore while it may be possible to assess trends, the full impact of the additional investment in terms of long-term 'return' has yet to be realised.

The re-framing of NHMRC's initiatives is resulting in:

- increased people support/capacity, including salaries, fellowships, scholarships, enabling grants for major databases, and some major infrastructure projects;
- an increase in the number of Fellows;

- an increase in career development awards;
- an increase in public health capacity in the workforce;
- the creation of industry fellowships;
- the move to Program grants that provide greater scope and duration;
- strengthening of high quality peer review;
- a move to a national assessment scheme rather than a state-based assessment system and investment;
- a move to Project grants away from marginal support; providing for basic units of discovery and career paths for Chief Investigators who are not yet able to lead Program grants;
- consolidation of health-related research, enabling a more integrated perspective on research and greater synergies between basic and applied areas;
- significant “real world” applied research in partnership with health agencies through the Strategic research grants scheme and Partnership grants scheme; and
- support for partnerships with international funding agencies.

These developments signal clearly that the NHMRC is well on track to achieving the return on investment objectives set by the Wills reforms.

2. The appropriateness, effectiveness and efficiency of the current level of investment in the NHMRC

The NHMRC moved expeditiously to establish a research outcomes framework in its 2000-2003 Strategic Plan focussed on the strategic directions outlined in the review: increased knowledge; translation of research outcomes and commercialisation; and strengthening Australia’s research capacity. These elements are complemented by the NHMRC’s continuing role in fostering Australia’s system of ethical review and the development of evidence-based guidelines and health advice, informed by consultative processes.

The management and operation of the NHMRC have been strengthened by the appointment of a full-time Chief Executive Officer, the re-structuring of the Office of NHMRC and the streamlining of the Council’s committee structure towards the objectives of the Strategic Plan, and by a greater stakeholder focus.

Like many organisations in contemporary society, the NHMRC faces the challenge of the increasing demands that expansion brings. Notwithstanding the steps taken by the NHMRC in improving delivery on these demands, the Wills recommendation on staffing structure and remuneration levels has not been implemented fully due to insufficient investment in the administrative base to support allocation of research grants. It is vital to the future effectiveness and efficiency of the NHMRC that the Government recommit to providing for a level of professional and administrative support for the NHMRC that enables the Council to fulfil its charter and to ensure the optimum return on the nation’s investment in health and medical research.

The NHMRC's grant schemes: areas for enhancement

The allocation of NHMRC grants through a single, annual round and the slow process of selection are impediments to the timely take-up of research ideas and innovation, thereby delaying the return on investment in health and medical research. The introduction of more than one grant round per year would require increased efficiencies if the process was to avoid being too burdensome on both the NHMRC and applicants, but the potential payoff would be significant.

To further enhance and build on the current suite of NHMRC schemes consideration should also be given to:

- awards for outstanding single investigators to complement the Program grants which are focused on team research;
- increased investment in Program grants which support the basic, discovery research that underpins the applied research supported by other schemes;
- increased investment in institutional and national infrastructure within the context of a national research infrastructure strategy;⁵
- additional 5 year Project grants to support substantive, innovative “blue sky” research projects which have the potential to have significant impact on the nation’s health;
- additional Fellowships to support mid-career researchers;
- strategic investment in the European Union Research Framework 6 and beyond; and
- more effective utilisation of the NHMRC’s web and other communications media in informing researchers of career paths and relevant grant schemes.

Research ethics and associated guidelines

The effectiveness of the NHRMC in fostering ethical research practices and the development of associated guidelines relies heavily on successful collaboration among key stakeholders. The NHMRC is playing a pivotal, coordinating role in working with Commonwealth, state and territory health departments towards greater standardisation between and among Commonwealth and state and territory requirements as they apply to the work of ethic committees.

The development and periodic review of such guidelines is an increasingly collaborative enterprise. Recent examples include the *National Statement on ethical conduct in research involving humans*,⁶ jointly developed and endorsed by the NHMRC, the AVCC, the ARC, the Australian Academy of the Humanities, the Australian Academy of Science, the Australian Academy of Social Sciences in Australia, and supported by the Australian Academy of Technological Sciences and Engineering; and the current review of the *Joint NHMRC- AVCC statement and guidelines on research practice*⁷ involving the NHMRC, the AVCC and the ARC.

⁵ AVCC submission to National Research Infrastructure Taskforce available at: http://www.avcc.edu.au/policies_activities/research/gov_reviews/index.htm

⁶ *National Statement on ethical conduct in research involving humans*, 1999: <http://www.nhmrc.gov.au/publications/humans/contents.htm>

⁷ *Joint NHMRC-AVCC Statement and Guidelines on Research Practice*, 1997: http://www.avcc.edu.au/news/public_statements/publications/glrespra.htm

3. Future directions and priorities for our health and medical research

The recent Access Economics report for the Australian Society for Medical Research⁸, provides extensive, considered analysis of national and international trends which confirms the significant social and economic returns from public investment in health and medical research. However, despite Australia's exceptional track record in terms of its share of global health and medical research activity, both this report and the Wills Report show that our public investment in health and medical R&D remains low by OECD standards (0.25% of GDP in 2000-2001 – in a range of 0.15%-1.1% in other OECD countries), and trending downwards over the late 1990s. This critical statistic is borne out by the findings of the Government's science and innovation mapping exercise⁹, which shows that Australia continues to rank towards the bottom of OECD countries in terms of total R&D investment.

This is at a time when our major competitors and trading partners are increasing their commitment to research and innovation.

The *Exceptional Returns* report rightly points to a number of key issues to be addressed if the benefits from the Wills initiatives are to be maximised:

- the need to boost investment in health and medical R&D relative to GDP given Australia's poor relative ranking to other OECD countries;
- the need for state, territory and local governments to match and stay in line with Commonwealth commitments; and
- the need to capitalise on Australia's comparative advantage in health R&D given our levels of discovery, publications, citations and other evaluative criteria relative to our size in the global market.

These issues align with the AVCC's view that increased investment in our research capacity must be prefaced by the setting of an internationally competitive R&D investment target of 2% of GDP by 2010 and 3% by 2020. Achieving these targets will require:

- a pluralist research framework underpinned by a suitable level of investment in both performance-based block grants and peer-reviewed competitive grants. Such a framework allows strategic planning from multiple perspectives, ensuring an effective research system that does not allow important areas to be ignored because they do not fit within a dominant paradigm;
- reinvestment in the research building capacity of universities and publicly-funded research agencies to ensure the national research base remains responsive to the needs of government, industry, and the nation as a whole;

⁸ *Exceptional Returns: The value of investing in health R&D in Australia* (September 2003) <http://www.asmr.org.au/general/Except.pdf>

⁹ *Mapping Australian Science & Innovation Summary Report, November 2003:* http://www.dest.gov.au/mapping/pubs/summary_report.pdf

- cementing the gains from the Wills initiatives and *Backing Australia's Ability* as baseline investments; and
- a long-term commitment to a national research infrastructure strategy premised on effective access, operation and maintenance, better coordination and cooperation among different elements of the research and innovation system as they apply to infrastructure and multi-use facilities for researchers from a wide range of fields.

A pluralist research and innovation system should encompass:

- (i) performance-based block grants for universities, which allow them to build Australia's research capacity through targeting new research areas, supporting new researchers and pursuing university research priorities;
- (ii) external competitive grants from major research funding agencies including the NHRMC and ARC, which give additional support and depth to the best research in universities, but which rely on the initial development of that research by universities; and
- (iii) external support for specific research and development required by individual organisations, business, the community and governments. This too depends on a strong research capacity in universities while providing some support for universities to extend their capabilities.

The health and medical research dimension

An effective national research and innovation system must involve a plurality of investment mechanisms such that no one body or approach is responsible for determining the system's shape and focus. The NHMRC, the ARC and other public research funding organisations should remain as separate, complementary entities. Given the nature and scope of its remit, it is essential that the NHMRC maintain strong links with Commonwealth Department of Health and Ageing. At the same time it should retain an appropriate level of independence so that it can fulfil its statutory obligations effectively.

These distinctions do not preclude the collaborative development of new mechanisms by the NHMRC and ARC – in consultation with universities, publicly-funded research agencies and relevant private entities - to encourage interdisciplinary and cross-disciplinary research that spans the areas of research supported by each organisation.

There is also a compelling case for greater investment within the NHMRC's policy framework in public health and social sciences research, in line with the national health priorities, in particular, healthy start to life, prevention of disease, and healthy ageing. Such investment would also be consistent with the re-balancing of the national research priorities¹⁰ to encompass the goal of "strengthening Australia's social and economic fabric" under the national research priority, Promoting and Maintaining Good Health. To do this well, there is a need to expand the capacity of the public health and social sciences areas, both in terms of investment and the ability to review applications.

Effective research collaboration

The AVCC has addressed the issues relating to collaboration in its submission to the Research Collaboration Taskforce. In summary, the AVCC supports steps to extend linkages and

¹⁰ *Enhancing National Research Priorities*, Min 539/03 media release, 28 November 2003: <http://www.dest.gov.au/Ministers/Media/Nelson/2003/11/n539281103.asp>

collaboration between and among universities and other bodies but only where collaboration will substantially improve research outcomes. Within the fixed allocation available through block grants there has been extensive pressure on universities' capacity to both meet the expectations of collaborative projects and to support internal research needs. There is therefore a strong case for additional support for collaborative activities, as well as a relaxation of matching investment and leveraging requirements.

Management of Intellectual Property

There have been significant improvements in the capacity of the health and medical sector in Australia to capture and protect intellectual property rights over recent years. This has arisen out of increasing awareness of the value of intellectual property within research organisations and the legislative frameworks which facilitate IP management, originating in the Bayh-Dole Act (1980) in the USA.

Commercialisation of IP not only provides potential financial rewards to public institutions engaged in research; there are also intangible benefits for closer collaboration between university, hospital and institute-based research and the commercial sector. This was recognised in the Wills Review, and some progress has been made in Australia to strengthen these linkages. This has occurred through increased recognition of the basic need for such an approach as well as enhanced expertise and support in order to facilitate the mechanics of patent protection, technology transfer, and the like.

The *National Survey of Research Commercialisation – Year 2000*¹¹ demonstrated the potential economic benefits to Australia of the NHMRC's suite of programs. Based on the available data, a return of over 30% on NHMRC research investment can be achieved through income for medical research institutions from commercial licence options and assignment activity.

However, there is an array of policies concerning ownership of IP across the sector, and the quality and robustness of professional expertise in managing IP portfolios remains variable. Universities have generally improved their capacities in this area, but there remains much to be done. In some states there is a lack of clarity about IP policy. The particular difficulties of IP and the exploitation of IP in the medical and pharmaceutical arenas mean that further attention to this area is vital if we are to realise fully the return on investment in health and medical research.

An important step has been the development of the *National Principles of Intellectual Property Management for Publicly Funded Research*¹² under the impetus of the NHMRC in collaboration with the ARC, the Australian Tertiary Institutions Commercial Companies Association, the AVCC, the Department of Education, Training and Youth Affairs, the Department of Industry, Science and Resources, and IP Australia.

¹¹ National Survey of Research Commercialisation Survey: <http://www.arc.gov.au/pdf/AURC003.pdf>

¹² *National Principles of Intellectual Property Management for Publicly Funded Research*, 2001: [http://www.avcc.edu.au/news/public_statements/publications/FINAL_National_Principles_of_IP_Mgt_\(Sep01\).doc](http://www.avcc.edu.au/news/public_statements/publications/FINAL_National_Principles_of_IP_Mgt_(Sep01).doc)

In conclusion

International quality is the only standard we should consider for our health and medical research effort. We will achieve this if we retain and attract gifted researchers, provide appropriate program and project support, and develop and sustain suitable contemporary infrastructure.

The increased investment in national health and medical research flowed from advocacy for the seamless interface of research, industry and government. The Wills Report's action strategy must remain the focus: maintaining the momentum of the *Virtuous Cycle* – and the mutually reinforcing actions on which the Wills reforms are based – requires that we act now while the window of opportunity remains open.

Recommendations

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2. Australia must meet the challenge of ensuring flexibility and capability in national health and medical research by:
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 - ensuring that Australia's pluralist research framework is underpinned by reinvestment in the research base and the research building capacity of universities.