ACCELERATING DISCOVERY AND CAPTURING THE RETURNS

A 5-YEAR PLAN FOR INVESTMENT IN HEALTH AND MEDICAL RESEARCH IN AUSTRALIA 2006-2011

Response to the Investment Review of Health and Medical Research: Sustaining the Virtuous Cycle for a Healthy, Competitive Australia
December 2004

Prepared and jointly submitted by:

Association of Australian Medical Research Institutes (AAMRI)
Australian Society for Medical Research (ASMR)
Research Australia Ltd

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EXECUTIVE SUMMARY

The world-class performance of Australia's health and biomedical research sector has great potential for enhancing the health and wealth of the nation.

The Howard Government investment in Australian Health and Medical Research

Following the Wills Review (1999), the Commonwealth Government augmented investment in this sector with an historic increase in funding of the National Health and Medical Research Council (NHMRC) by $614 million over six years, reaching a new funding base of approximately $412 million per annum by June 30 2005. In addition other important funding initiatives such as Backing Australia's Ability, National Centres of Excellence, university and research agency funding and programs supporting commercial research developments have contributed to an overall Commonwealth funding contribution for health and medical research of approximately $1 billion per annum in 2003 representing 0.12% of GDP.

Strong and sustained investment and growth in health and medical research has a clear fit with key elements of the Government's policy platform including National Research Priorities, National Health Priorities and other economic and fiscal policies (Intergenerational Report, Backing Australia's Ability 1 and 2, and the Productivity Commission Report).

The Grant Review (2004)

To evaluate the outcomes and benefits of this investment to date and to develop an appropriate forward investment strategy, the Government commissioned a review by an expert committee, chaired by John Grant. Their report, entitled "Sustaining the Virtuous Cycle for a Healthy, Competitive Australia" was published and released in December 2004.

The Grant Report found that the 'Virtuous Cycle' between government, research and industry envisaged in the Wills Review was now well underway and had started to deliver significant gains.

Notwithstanding those positive outcomes, the Report highlighted that the 'Virtuous Cycle' was at significant risk without policy leadership and additional investment from government.

To maintain the momentum and growth to date, to better capture benefits for Australia's health and economic future, and to strengthen Australia's international position over the long term, the Grant Review recommended a second staged increase in Federal Government funding over the next five years to follow on seamlessly from the Wills funding program. Grant recommended a target total government investment of approximately $1.8 billion p.a., which would approach the average OECD average of 0.2% of GDP.

Areas targeted for increased investment through NHMRC include:

- program, projects and other grant funding;
- health policy-and-practice-focussed research (PPFR);and
- people (fellowships).

In addition, the report recommended:

- policies that foster private industry investment to leverage government investment;
- an Australian Fellowship Program be funded;
- a HMR Venture Fund be established;
- infrastructure funding be increased to 40 cents/direct research$;
- implement further structural reform of NHMRC; and
- ensure a robust implementation approach.

The way forward

On behalf of the Australian health and medical research community –

- Association of Australian Medical Research Institutes (AAMRI)
- Australian Society for Medical Research (ASMR), and
- Research Australia Ltd.,

formally request that the government considers and approves in the context of the 2006 Budget a new staged program of increased health and medical research funding over five years with the new program to commence seamlessly at the end of the Wills program.

We recognise and welcome the Government's support relating to infrastructure funding and selected research funding announcements in the 2004 and 2005 budgets. However we urge Government to

support a sustained funding growth through the NHMRC as proposed by the Grant Review.

The Grant Review 5 year funding growth plan has been modified in the following table to adjust for the changed timelines.

Table 1: Proposed incremental staged increase in funding to NHMRC ($m)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
NHMRC Admin	14	11	11	11	11
Policy-and-practice-focussed research	16	33	48	62	71
Project/program/other grants	12	43	99	161	225
	42	87	158	234	307

This investment program is $828 million over the next 5 years building the NHMRC funding base from $412 million in 2005/06 to approximately $720 million by 2010/11.

In addition the one-off endowment of $170 to an Australian Fellowship Scheme as proposed by the Grant Review is also strongly supported as an important initiative in supporting and fostering our best people.

This new staged investment in combination with anticipated growth of research funding to universities, ARC, CSIRO and other government research agencies would approach the total government investment in health and medical research of $1.8 bill per annum targeted by the Grant Review.

Why is this important for Australia?

The as yet unrealised returns on investment to date from the Wills years and the proposed growth under a new 5-year program are substantial – this set of initiatives and investment could arguably be one of the most valuable and critical long-term decisions taken by this Government towards Australia's future, resulting in:

- Healthier Australians living **longer and more productive lives** in the workforce and as contributors to our community
- Addressing some **essential Australian health issues** such as indigenous health, childhood obesity, asthma, melanoma.
- **Turning evidence into action in our health system**, at clinical and policy levels, to achieve better health outcomes and more efficient use of health care resources.
- **Building the human capital** of our knowledge economy of the future.
- **Building 'knowledge assets'** to position Australia's global economic destiny

These initiatives fit well with good long-term national health and economic policy by capturing the value from investment made to date; leveraging government funding with non-government sources; harnessing untapped capacity; improving health system efficiency and accelerating discovery to benefit the health and productivity of an ageing population and strengthening our knowledge economy – for a healthy and prosperous future for all Australians.

1. BACKGROUND

In 1998, the Commonwealth Government commissioned Mr Peter Wills to conduct a strategic review of Health and Medical Research (HMR). This resulted in his description of the concept of a "Virtuous Cycle" between Government, the Research Community and Industry, where increased investment in research and a range of enabling initiatives could advance research productivity and lead to increased health and economic benefits to Australia.

In recognition of this ground-breaking report, the Commonwealth injected an additional $614 million into medical research over five years, effectively doubling the NHMRC annual research budget by mid 2005 to a base of $412 million per annum.

In 2003, the Commonwealth Government commissioned an Investment Review of Health and Medical Research (IRHMR) to assess progress in the implementation of the recommendations Wills Review and early indications of the impact of the additional investment. The Review was asked to advise on future directions and forward investment. An expert committee, chaired by Mr John Grant, evaluated over 400 written submissions, and conducted 89 interviews. The final Report, entitled ''Sustaining the Virtuous Cycle for a Healthy, Competitive Australia' was published in December 2004.

The Government has not yet made a formal response to the Grant Report or indicated how it intends to continue its development of a long-term strategy.

The Association of Australian Medical Research Institutes (AAMRI), the Australian Society for Medical Research (ASMR) and Research Australia, a national alliance of over 150 organizations, community groups and companies standing together to say that health and medical research is vital to the health and economic destiny of Australia, have prepared this joint response to the Grant Review to highlight its thrust, to respond to its major recommendations and to formally request government to initiate a new 5-year research funding package to follow on from the Virtuous Cycle program.

This document should be read in conjunction with the Grant Report, in order to access the detailed evidence and arguments underpinning the case for future investment.

2. THE GRANT REPORT CARD:

- **Australia has a distinctive competence in health and medical research (HMR).**

  Australia's many major research discoveries and breakthroughs of world importance include areas as diverse as lithium, penicillin, bionic ear, hormones for white blood cell production, SIDS, treatment of stomach ulcers, melanoma and AIDS testing. Compared to other areas of national intellectual property development, HMR delivers greater outputs and is a rare example of competitive technological advantage in an area of global growth and innovation.

- **Research quality and quantity is very high and improving**.

  With 0.3% of the world's population Australia produced about 3% of the world's health R&D output in 2002 up from 2.5% at the time of the Wills Review. Australian scientists have received four Nobel Prizes for Medicine and Physiology and our clinical and public health research continues to deliver high publication (5% of world total) and citation rates. The impact of Australian research ranks consistently in the top 8 countries across a wide range of fields.

- **Returns on investment in HMR are very high**.

  An independent report by Access Economics (*Exceptional Returns: the value of Investing in Health R&D in Australia 2003*) has estimated the increase in longevity and quality of life resulting from advances in HMR to be worth a total economic benefit to Australia of over $5000 billion over the last 40 years. Moreover, in 1999, the returns from improved health span attributed to Australian research outcomes alone (based on Australia's contribution of 2.5% of global research), were $3.3 billion - a rate of return of 240% against HMR expenditure for that year.

- **Governance of the sector has been improved**

  NHMRC has implemented a range of reforms to achieve a more globally competitive HMR base, by fostering increased national competitiveness, collaboration and mobility of scientists. It was however noted that the NHMRC reform agenda and funding recommended in the Wills Review had not been fully implemented.

- **Attraction and retention of highly skilled researchers has increased.**

  There is evidence that implementation of the Wills Review has already encouraged the return of talented individuals to Australia, provided expanded opportunities to younger researchers, and opened up new career paths for entrepreneurial researchers with increasing commercialisation.

- **Growth in private funding is encouraging.**

  A range of Commonwealth Government and private initiatives is improving access to capital, including overseas investment, although there is significant untapped potential to gain increased access to large international capital markets and multinational pharmaceutical investment in Australian based R&D.

- **HMR has created new businesses and jobs.**

  There has been a 16% per annum increase in the number of Australian biotech companies based on commercialization of HMR, reaching 350 in 2003. This has created an estimated 3,000 - 4,000 new knowledge-based jobs since 1992.

- **Australians view HMR as a priority for increased Government funding**.

  The public ranks HMR third in priority for public expenditure (following hospitals and schools) and the great majority (87%) support increased investment. 47% of respondents would rather a government surplus be directed to HMR than receive a tax cut. *(Research Australia HMR Public Opinion Polls, 2003 and 2004).*

3. THE GRANT RECOMMENDATION: FURTHER INVESTMENT AND REFORM

The Grant Report identified an exciting vision of how HMR can help deliver a healthy, competitive Australia for future generations. The goal is to sustain and accelerate the momentum of the Virtuous Cycle, building on the impact of gains already achieved.

The Committee found that the Virtuous Cycle would be at significant risk without additional investment and that this risk had been amplified by further research investment growth in other nations.

Accordingly, to ensure that impetus was not lost and to further enhance Australia's international position, the Review recommended:

- a second, staged increase in government funding in targeted areas over the next five years including policy-and-practice focussed research; expansion of project, program and other grants; an endowment for an Australian Fellowship scheme; increased infrastructure support across all research settings; and a HMR Venture Fund;
- leverage of government funding by attraction of increased private investment;
- further policy changes and structural reform of NHMRC; and
- a robust implementation approach.

The proposal is to reach an overall annual investment by the Commonwealth of $1.8 billion, bringing the government investment up to the OECD average 0.2% of GDP. This would be in combination with attracting increased private investment (from $420 million to $1 billion per annum) and encouraging philanthropy and international funding.

Specific staged funding increases were proposed for the NHMRC and investment priorities recommended.

4. THE WAY FORWARD: INVESTMENT PROPOSAL - 2006 TO 2011.

On behalf of the Australian Health and Medical Research Community –

- the Association of Australian Medical Research Institutes (AAMRI)
- the Australian Society for Medical Research (ASMR), and
- Research Australia Ltd.,

formally request that the government considers and approves in the context of the 2006 Budget a new staged program of increased health and medical research funding over five years, to commence seamlessly at the end of the Wills program.

The investment priorities targeted by the Grant Review are generally endorsed. The proposed 5 year funding growth plan has been modified in the following table to adjust for the changed timeline.

Table 1: Proposed incremental staged increase in funding to NHMRC ($m)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
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This investment program is $828 million over the next 5 years building the NHMRC funding base from $412 million in 2005/06 to approximately $720 million by 2010/11.

In addition, the one-off endowment of $170 million to an Australian Fellowship Scheme as proposed by the Grant Review is also strongly supported as an important initiative in supporting and fostering our best people.

In Section 5 below, we comment on and generally endorse the investment priorities targeted by the Grant Review as being highly desirable.

5. INVESTMENT PRIORITIES

In proposing the additional major investment by the Commonwealth, the Grant Report targeted several priority areas:

5.1 Grants and Fellowships

To build on the excellence and impact of Australian research, the Grant Report recommended investing an additional $540 million over 5 year to support a variety of research grants and an endowment of $170 million for an Australian Fellowship scheme.

AAMRI, Research Australia and ASMR strongly endorse this proposal.

The Committee noted that the gains made by the increase in research funding which followed the Wills Report were being rapidly eroded by increasing costs. In addition, other governments had also made major investments, leaving Australia again at a competitive disadvantage. They recommended some further refinement of NHMRC grant and fellowship policies. We note, however, that some of these changes have already been implemented by NHMRC during 2004.

We further note that post-Grant funding announcements in 2004/05 and 2005/06 have provided welcome increased support for specific research areas including dementia, asthma, juvenile diabetes, and clinical cancer research.

5.2 Support of Policy-and-Practice Research

To accelerate progress in Policy-and-Practice Research, the Grant Report recommended targeting this area for additional investment of $230 million over 5 years, to be delivered via a new NHMRC funding scheme.

AAMRI, Research Australia and ASMR strongly support this proposal.

The Wills Review emphasised the need for additional resources for priority-driven research to deliver more immediate benefits either via better health policy or via translation of research findings and/or products and technologies into clinical practice. This was seen as particularly important to address the changing burden of disease and issues, including the importance of enhancing productive ageing, raised in the recent Intergenerational Report.

The Grant Review considered that insufficient progress has been made in developing this area, which it denotes Policy-and-Practice Research (PPFR) and noted that Australia has fallen further behind countries such as Canada and the Netherlands.

Policy-and-Practice Research (PPFR) delivers insight into improvements in the delivery of health outcomes, rather than basic science research. The Committee saw it as involving both top-down and bottom-up initiated research and drawing on a wide spectrum of disciplines that includes basic biomedical, clinical, population health, health economics, health services and broader social sciences.

5.3 Commercialisation

To address financing gaps in commercialisation, the Grant Report recommended Commonwealth invest $100 million to establish a HMR Venture Fund.

Further, the Grant review recommended developing a whole of government program to remove obstacles and increase incentives to invest in Australia, with the goal of attracting $1billion per annum of global industry R&D investment.

AAMRI, Research Australia and ASMR support this proposal, noting in particular that no existing schemes (including the new NHMRC industry grants) adequately address the funding gap at the very earliest stage of commercialising basic research.

Over the past five years, support for development of HMR IP has greatly improved, through a range of initiatives in *Backing Australia's Ability* and others instigated by NHMRC.

The Grant Review nevertheless saw an urgent need for further reform and identified three main impediments to translating promising HMR into successful companies:

- Access to funds to effectively protect intellectual property;
- Access to early stage funds for proof-of-concept studies ; and
- Access to larger amounts of capital at a later stage for clinical trials, regulatory approval and development pre-product launch.

It also noted that medical research institutes were inappropriately excluded from certain schemes, impeding biotechnology development. Specific recommendations to overcome these impediments included:

- Extending BIF or creating an alternative program to address early stage finance
- Making Commonwealth Government pre-seed funding schemes available to all research institutions, including medical research institutes.
- Establishing a major Fund to provide access to larger capital amounts.

5.4 Research Infrastructure

Grant recommended increasing the overall level of funding for indirect research costs to more closely match the real costs (> 50 cents per direct research dollar); awarding infrastructure to all research organizations, not just universities; moving to international best practice by linking recurrent infrastructure funding directly to competitive grants via NHMRC and ARC; widening the grants eligible for Commonwealth infrastructure funding to include those administered by recognized national and international bodies such as the JDRF, National Institutes of Health and WHO.

The Commonwealth Government has taken a significant first step towards implementing this reform. The 2004 Budget provided $200 million over 7 years towards the indirect costs associated with NHMRC-grants awarded to independent medical research institutes. The issues of level of infrastructure funding across all research settings and eligible granting bodies will be important next steps.

The Grant report also supported the recommendations of the National Infrastructure Research Taskforce, which called for a major increase in non-recurrent research infrastructure in five categories: Foundation Facilities; Landmark Facilities; Major Research Facilities; Sector Facilities; and Institution Facilities.

5.5 NHMRC Management

The Grant Review found that the NHMRC had not yet become the high performance organization envisaged by the Wills review. Both the current structure of the organization and inadequate resourcing were seen to be fundamental impediments.

The Grant Report has suggested a model for reform of NHMRC governance and structure, supported by an increase in funding of $58 million over 5 years.

AAMRI, Research Australia and ASMR agree that further reform of NHMRC is needed.

We do not wish to comment at this stage on the specific structure proposed, except to strongly emphasise the need for NHMRC to be strongly linked to the Department of Health and Ageing.

Merging of NHMRC with other research agencies in DEST or Industry may dilute funding available for medical research and may lead to less informed strategic investment decisions and priorities. This would threaten both the health benefit to be derived and possibly disadvantage biotechnology development. Strong links with the health system are fundamental to successfully translating and introducing new treatments and technologies.

Furthermore, NHMRC has important non-research responsibilities such as health advice, regulation and ethics that could not easily be integrated into a general research agency.

6. IMPLICATIONS FOR POLICY

In announcing the Government's acceptance of the recommendations of the Wills Review on 1 October 1999, the Prime Minister indicated his strong support for medical research, noting its importance not only to Australia's health, but to the future social and economic benefit of the nation, which depends on a fit, healthy and motivated workforce.

For health and medical research to become a major economic driver and a continual source of knowledge to sustain a growing, knowledge-based society, the 'Virtuous Cycle' must gain momentum and be reinforced by continued, strategic investment.

To flat-line the funding program after such a progressive start may risk undoing the gains made thus far and result in not achieving the Government's long-term policy objectives.

The **"Intergenerational Report"** (released by the Treasurer in 2001 and updated in 2002) highlighted a series of challenges for Australia in the face of an ageing population. These included reducing the growth in health care costs and improving the "cost benefit" of health care strategies. As a follow up to this Report, the Treasurer released a discussion paper, **"Australia's Demographic Challenges"**, on 25 February 2005, which highlighted improvements in the capacity for work through better education and health as a key priority addressing the issue of ageing.

The prevalence and cost of disease in Australia are predicted to grow dramatically as our population ages. For example, in 2001/2 dollar terms, the total cost of health and aged care in 2041/2 is predicted to rise five-fold (*Intergenerational Report*).

The challenges presented in the Intergenerational Report can only be met through a strategic increased investment in Australian health and medical research. Linking in with the goals of the **National Research Priorities**, the increased investment will act in the national interest to enable development of effective public health policy through informed decision-making (particularly through health systems research) and generation of new knowledge and discovery required to understand and address major unmet disease burdens and health issues currently facing the Australian population.

While research is a global endeavour it is increasingly collaborative and Australia plays a key role in a broad range of research areas such as

immunology; cancer and transplantation; stem cell research; vaccine development; asthma; public health and medical devices.

	Direct economic costs ($bn)	Indirect economic costs ($bn)	Total costs ($bn)
Cardiovascular*	7.2	5.7	12.9
Cancer*	3.7	6	9.7
Arthritis	2.2	4.9	7.1
Schizophrenia	0.7	0.7	1.4
Osteoporosis	1.9	4.5	6.3
Dementia	3.2	2.2	5.4
All other	41.9	53.3	95.2
TOTAL	60.8	77.4	138.1

*Source: Table 38 Indirect costs of uncured disease, Australia. Exceptional Returns: the value of Investing in Health R&D in Australia, Access Economics. *Approximations only.*

As US philanthropist and research advocate Mary Lasker (1901-1994), said “If you think research is expensive, try disease”.

7. RISKS ASSOCIATED WITH FAILING TO INCREASE INVESTMENT

What are the implications of not continuing an upward investment trend? What benefits does Australia stand to lose if we fail to seize the present window of opportunity to invest in the future? Some key benefits and opportunities that might be lost or substantially reduced include:

7.1 Economic returns - capture/realize the investment to date and tomorrow

Trying to put a 'value' or 'yield' on health and medical research is complex and multifaceted. The economic impact will include an improved and more cost-efficient health care system (see also 7.3 below), increased productivity through longer and healthier lives, building of new businesses and jobs; and, invaluably, reducing the human 'cost' of disease.

Australia's innovation capability and performance remains a clear priority for the Federal Government. "Real Results, Real Jobs: The Government's Innovation Report 2002" summarises the programs and projects supported by the Government under Backing Australia's Ability. These included implementation of tax concessions, the development of the Biotechnology Centre of Excellence, and the Pharmaceutical Industry Action Agenda. The State Governments are also showing commitment to innovation through centres and networks such as the BioMelbourne Network, Bio-21, BioFirst, ATPi, IMBcom, Bioinnovations and Biocomm.

The recently released Association of University Technology Managers (AUTM) survey has demonstrated that there is a substantial contribution to the commercialisation of research in Australia by universities, medical research institutes and the CSIRO. The survey showed that in some areas (income from licenses and start-up company formation) Australia's relative performance was well above that of either USA or Canada.

Australia is the sixth largest biotechnology centre in the world, with 370 biotechnology companies (including 215 companies in the human health field), behind the US, Canada, Germany, the UK and France. Increased support for Australian health and medical research is

essential for continued rapid growth of the Australian biotechnology industry at an international level. This also applies if Australia is to be regarded as a preferred location for clinical and applied commercial research.

Currently, many multinational pharmaceutical and biotech companies are choosing to base research and development hubs in countries such as Singapore and Ireland due to more attractive tax environments and industry specific incentives. Australia needs to act now or miss out on these strategic opportunities.

7.2 Access to international funding – the multiplier effect

Their international competitiveness enables Australian researchers to leverage the Commonwealth's HMR investment to obtain access to additional funding sources. A survey conducted by AAMRI has shown that NHMRC funding provided the leverage to obtain $30 million in overseas competitive grants: a 112% increase from 2000 – 2002.

Examples include:

- The Wellcome Trust has provided £6 million for the International Collaborative Research Grants (ICRG) scheme, which fosters collaborative research between the developing countries of our region, and both Australia and New Zealand.
- In the last grant rounds, Australia was third only to Canada (US$28.5 million) and the United Kingdom (US$15.9 million) as the highest funded country for winning overseas NIH grants, obtaining US$12.6 million.

7.3 Evidence-based health practice and policy to improve health outcomes and efficient use of health care spend

Initial investment in priority-driven and strategic research has enhanced the available body of knowledge necessary to make sound policy and practice decisions in health. Increased investment in operations-oriented research will assure the Australian public of an effective, efficient, and evidence-based health care system and will advance the rate of implementation of new knowledge in clinical practice.

In the absence of sound evidence-based decisions, health outcomes cannot be achieved effectively and efficiently. Economic losses arise from poor decisions to fund treatments for which there is insufficient evidence of efficacy and value-for-money or inconsistent provision of treatments for which there is ample evidence of efficacy and value-for-money. Potential for cost-savings in health can be realised only by enhancing demand for evidence among policy makers as a prerequisite to resource allocation and the participation of clinicians and clinician researchers. Funding support for clinician-initiated research will build our capacity and capability in clinical and applied research and assist with rigorously addressing relevant gaps in evidence for issues of priority in policy and practice.

7.4 Ability to address major disease / health issues

Medical research is the key to reducing the health burden of disease in Australia, and on a global scale. Australia faces very specific health issues such as the highest rates of skin cancer and asthma in the world, the fourth highest levels of incidence of bowel cancer, and major indigenous health problems. Australia also has the research expertise to contribute to global health issues such as the development of vaccines for malaria and HIV/AIDS.

7.5 Building a knowledge based skilled workforce

Developing the human capital for a sustainable knowledge based workforce in research, development and key areas of manufacturing such as biologics will be key to Australia's self sufficiency and position in a global knowledge economy. We need a "wide and deep" workforce and require additional investment to build capacity in some priority areas such as indigenous health, socioeconomic research and biotech commercialisation expertise. We are also at threat of continued loss of some of our best scientists and researchers offshore if we do not create an attractive and supportive research environment.

7.6 Investment decisions made now will determine Australia's economic destiny and global position in the future world 'knowledge economy'.

Futurists predict that the 21st century will see the burgeoning of a global knowledge economy of which biotechnology promises to be the key driver.

HMR is a major element of developing "knowledge assets" for future generations of Australians. While other nations make many times the total investment of Australia and are likely to make major contributions to disease prevention, treatment and cure, Australia has a major role to play in both research leadership and as key collaborators. We need to be clever in our development and capturing of commercial opportunities in businesses, joint ventures, licensing or other commercial outcomes. Ultimately the "owners" of intellectual property and "knowledge assets" are the winners of the future so if Australia misses being in the lead group our economic future may depend on finite natural resources and our attractive climate and environment.

CONCLUSION

Increasing investment in health and medical research brings important opportunities for Australians - better health and increased national wealth.

Australia will gain from:

- New knowledge that is translated into improved health for Australians and more effective health services
- Affordable health care in the context of an ageing population
- Improved outcomes for specific Australian health issues
- Older Australians staying healthier longer and continuing to be productive in the national workforce
- Increased leverage for government funding from non-government sources
- A stronger international position, through retention of our best scientists creation of new intellectual property
- Creation of new businesses and jobs
- Continued rapid growth and globalisation of Australian biotechnology industry
- Growth of a sustainable knowledge economy that is able to compete internationally and provide the means for Australia to afford the 'discoveries' of other nations
- A reputation for being a good global citizen by contributing to the global research endeavour.
- Ability to compete in the region, where neighbours such as Singapore, Japan, Korea, India and China are focussing on growth of their biotech industry and knowledge economies
- National security and self sufficiency