Legislative Assembly for the Australian Capital Territory
Standing Committee on Health and Disability

INQUIRY: Health Science in the ACT

The Legislative Assembly Standing Committee on Health and Disability (the Committee) is conducting an inquiry into Health Science in the ACT.

By letter dated 17 May 2005, the Committee has invited the National Health and Medical Research Council (NHMRC) to provide its views on matters relating to the above topic. The NHMRC welcomes the opportunity to provide a submission in response to that invitation.

Terms of Reference:

The Committee set out the following Terms of Reference for the inquiry:

- the communication between primary and tertiary health organisations and the medical research community in the ACT;
- government and industry assistance to medical research in the ACT;
- the use of medical research in planning for health provision to the ACT and surrounding population;
- ways in which medical research can assist to lower the cost of health provision;
- models to support medical research;
- the availability and advancement of diagnostic testing; and
- any other related matter.

In responding to the inquiry, the NHMRC has provided introductory comments followed by specific comments against those terms of reference, that are relevant to the NHMRC.

BACKGROUND

The NHMRC is Australia's leading expert body promoting the development and maintenance of public and individual health standards, and consolidates within a single national organisation, the often independent functions of research funding and development of advice. Established in 1936, it is the Australian Government's principal health and medical research funding body, and operates under its own *National Health and Medical Research Council Act 1992.*

NHMRC's role in improving individual and public health outcomes

Good health is fundamental to all other endeavours, both at an individual level and on a broader, societal scale. While Australians enjoy relatively good health, there are many aspects of healthcare where advancements in health and medical research are still sought.

Arguably the most important function of the NHMRC is to build human and knowledge capital in health through its support of research and the development of health advice. The NHMRC is committed to further strengthening Australia's health and medical research community through funding the best ideas of the most talented researchers at internationally

competitive levels. NHMRC researchers act in a global context and need to be regarded as amongst the world's best to attain NHMRC support. NHMRC's objective is for Australia's investment in health and medical research to produce a contribution to the world's stock of health and medical knowledge which is internationally recognised.[1]

The benefits of investing in health and medical research

A key function of Australia's peak health and medical research body is to ensure that the best possible outcomes are realised from the Australian Government's investment in health and medical research.

Exceptional Returns - The Value of Investing in Health R&D in Australia (2003), a report produced by Access Economics, shows that every dollar invested in health and medical research will be recouped many times over[2]. It highlights, for example, that economic returns to cardiovascular R&D have been 8-fold, to respiratory R&D 6-fold and to digestive system R&D 5-fold[3]. The Report demonstrates that the direct benefits to the companies or industries responsible for producing health and medical technology, as well as indirect outcomes which produce social benefits for all Australians, are significant. It concludes that the outcomes for Australians of continued excellence in health and medical research, namely better health and quality of life and lower costs, will be positive in all regards.

One of the key ways the NHMRC aims to improve the health of all Australians is by contributing to the development of evidence based advice. This assists in translating research into better health practice and outcomes. The impact of these evidence based guidelines – that is, the impact of improvements in knowledge – can be examined in two ways. Firstly, the impact of the guidelines could be examined by evaluating the impact of the treatment paths they propose. In an environment of scarce health resources, both the effectiveness and the cost to the health care system of a proposed treatment path are important. This can be reduced to two key questions: "Is the proposed clinical practice cost effective?" and "Is the proposed clinical practice economically feasible?" The reasons for undertaking the evaluations and mechanisms for answering these questions are described by NHMRC[4] to aid guideline creators in confronting the complex evaluation process that is required.

Secondly, by evaluating costs or savings as a result of the uptake of guidelines into practice, their impact on healthcare expenditure can be examined. While the body of literature exploring the effectiveness of the uptake of clinical practice guidelines is still developing, the NHMRC continues to aid research translation by developing guidelines and advice. Some studies question the effectiveness of guideline uptake[5], while others attempt to quantify the

---

[1] *The Virtuous Cycle – Working Together for Health and Medical Research – Health and Medical Strategic Review – 1999*. This is available on the internet at: http://www.nhmrc.gov.au/wills/contents.htm (accessed Dec 2004).

[2] Access Economics. *Exceptional Returns – The Value of Investing in Health R&D in Australia*. Report for The Australian Society for Medical Research. September 2003. This is available on the internet at: http://www.asmr.org.au/general/Except.pdf (accessed Dec 2004)

[3] Access Economics. *Exceptional Returns – The Value of Investing in Health R&D in Australia*. Report for The Australian Society for Medical Research. September 2003. This is available on the internet at: http://www.asmr.org.au/general/Except.pdf

[4] National Health and Medical Research Council. (2001). *How to compare the costs and benefits: evaluation of the economic advice*, Commonwealth of Australia, Canberra.

[5] Lockwood, S. "Evidence of me in evidence based medicine?" *British Medical Journal*, Vol. 329, no. 7473, 2004, pp. 1033-1035.

benefits to patients and healthcare systems as a result of implementation of evidence-based clinical practice guidelines.[6]

Over the last forty years, health and medical research within Australia is estimated to have created benefits in longevity and quality of life of over $5000 billion[7]. Additionally, this is an area of growing demand and rapid innovation that is attracting investment by governments, industry and financial investors around the world. For these reasons, commercialisation of health and medical research has been supported by a number of reviews[8] as at least an important a reason for the Australian Government to invest in health and health and medical research. State and Territory Governments, especially Queensland, New South Wales and Victoria, have also recognised the benefits of investing in such research.

Understanding the interaction between research and technology implementation

Research, supported by the NHMRC or any other organisation, adds to the international stock of health and medical knowledge. Through further development, utilisation, and possibly commercialisation, research outcomes generated in Australia or overseas can be transformed into health and medical technologies, including new and improved health and medical procedures and devices.

The creation of knowledge through research supported by the NHMRC benefits Australians by delivering improved health outcomes and economic gains. While it is sometimes argued that there is a direct relationship between technological advancements in health care and health care costs, it is also argued that the economic benefits realised from increases in life expectancy and improvements in health considerably outweigh the costs outlaid. Financing and access or eligibility arrangements in relation to the provision of new technologies, are all factors that need to be considered in evaluating the relationship between medical technology and health expenditure, as does commercialisation and intellectual property rights, increased human and institutional capacity for further research and the utilisation of advances in health care practices.

Although in some quarters there is the perception of an adverse relationship between technology and health care costs, it is often the case that advances in medical technology arising from the knowledge generated by research often results in decreases in health care costs (eg. laparoscopic procedures; pharmaceuticals to reduce rejection after organ transplantation; result of new therapies and/or technologies leading to shorter bed days; and decreasing morbidity as a result of population health initiatives).

---

[6] Hunter, E., Brown, J., & McCulloch, B. "Encouraging practitioners to use resources: evaluation of the national implementation of a resource to improve the clinical management of alcohol-related problems in Indigenous primary care settings". *Drug and Alcohol Review*. Vol. 23, no. 1, Mar 2004, pp. 89-100.
White, V., Pruden, M., Giles, G., Collins, J., Jamrozik, K., Inglis, G., Boyages, J., & Hill, D. "The management of early breast carcinoma before and after the introduction of clinical practice guidelines". *Cancer*, vol. 101, no. 3, 1 Aug 2004, pp. 476-485.

[7] Both as a direct result of new therapies, as well as technologies leading to shorter bed days and decreasing morbidity as a result of population health initiatives.

[8] *The Virtuous Cycle Working together for health and medical research*
Health and Medical Research Strategic Review 1999

Comments in relation to the Inquiry's Terms of Reference:

- **government and industry assistance to medical research in the ACT;**

NHMRC support for ACT health and medical research

ACT researchers have demonstrated considerable success in competing for NHMRC funding. Competitive funding of approximately $200 million is annually offered through the NHMRC's Project Grants scheme. In the funding round for Project grants commencing 2005, ACT researchers achieved the highest percentage success rate for applications lodged, compared with the other States and Territories.

Total funding currently allocated to ACT researchers is approximately $56.5 million. A list of all current NHMRC research grants/awards allocated to institutions based in the ACT is provided at Attachment A. The researchers listed in the attachment have successfully competed for funding across a range of NHMRC programs. The NHMRC web-site address http://www.nhmrc.gov.au/ describes in depth NHMRC policies, range of programs and application processes that are available to all Australian researchers.

While all the grants listed are being administered by the Australian National University (ANU), not all researchers listed are based at the ANU. It is worth noting that researchers at the John Curtin School of Medical Research have been successfully competing for NHMRC funding since 2002 when its Department of Education, Science and Training block funding arrangements were changed.

NHMRC support for strategic health and medical research projects and programs

Amongst the programs operated by the NHMRC are strategic research programs to support health and medical research in areas which have been identified as a priority and where there is an unmet need for targeted funding.

Through its strategic grants, the NHMRC has assisted not only the ACT medical research community but community groups and non-medical researchers as well.

In 2000, Dr Adam Graycar of the Australian Institute of Criminology received funding for a study modelling illicit drug use: *Criminal offending behaviour and treatment in the criminal justice population.*

In 2001, the NHMRC's National Illicit Drug Strategy Program funded a study by the ANU's National Centre for Epidemiology and Population Health and the Winnunga Nimmityjah Aboriginal Health Service based in the ACT: *An analysis of the needs of Aboriginal and Torres Strait Islander illegal drug users in the ACT and region for treatment and other services.* (The above mentioned two projects have now ended.)

In 2002, Professor Anthony McMichael of the Australian National University received $2,472,500 for a five year study: *Environment and population health: research development from local to global.*

In 2004, Dr James Butler at the Australian National University was awarded $4,500,000 under the Health Services Research Program for a five year study: *Innovative Analyses of Health Insurance, Ageing and the Economic Burden of Illness and Injury*.

The ACT medical research community will be able to compete for future funding under a number of current strategic research initiatives.

A call for expressions of interest for research proposals to address the priority goal of *Ageing Well, Ageing Productively* (a collaborative venture with the Australian Research Council) was advertised on 29 June 2005. A call for expressions of interest under a targeted research program addressing the priority goals of *Preventive Healthcare* and *Strengthening Australia's Social and Economic Fabric* is expected to be notified in 2005.

The NHMRC is also collaborating with the Australian Research Council on the NRP *Frontier Technologies for Building and Transforming Australian Industries* addressing the priority goal *Breakthrough science* with a focus on thinking systems. A call for research under this program is expected to be made in 2005.

NHMRC support for individual researchers

The NHMRC also offers a broad range of funding schemes that provides funding support for individual researchers. Detailed information concerning these is listed on the NHMRC web-site.

In the context of this inquiry, NHMRC Practitioner Fellowships are of particular interest.

Practitioner Fellowships

As part of the outcomes of the Wills review, the NHMRC introduced Practitioner Fellowships almost five years ago to increase the number of clinical practitioners undertaking research. This targeted award assists experienced and productive clinical and public health researchers who wish to maintain both a research and a professional career. The scheme aims to support clinical (medical, paramedical, allied health) and public health professionals who have undertaken a successful research program and wish to continue at nationally or internationally competitive levels. Successful applicants are, for their non-research time, employed by a health care authority to provide clinical care, or public health services or related policy activity.

Emerging Researchers

NHMRC funds early to mid-career researchers through the Training Awards program. These awards are broadly split into three categories - Career Development Awards, Postdoctoral Fellowships and Postgraduate Scholarships. Within the postdoctoral fellowships there are Overseas Fellowships and Australian Fellowships and relatively recently there have been added the Howard Florey Centenary Fellowship [to attract young researchers back to Australia from overseas] and the Industry Fellowship [to foster linkages with the health industry]. Postgraduate Scholarships are provided for researchers to seek to attain their PhD by full-time research.

NHMRC does not, in the main, seek to direct researchers in the Training Award program into targeted health areas. The applicants are judged predominantly on their undergraduate record and research experience, with only a small emphasis on the intended project.

The Training Awards program has also fostered links with several other health research funding organisations eg. Heart Foundation, Diabetes Australia, National Breast Cancer Foundation, Alzheimer's Australia Research, with benefits to both parties in regard to the exposure of health research to a wider audience.

Established Researchers

The NHMRC's Career Awards provide support for experienced Australian researchers to undertake research that is both of major importance in its field and of benefit to Australian health.

Research Fellowships

The purpose of the NHMRC Research Fellowships Scheme is to provide opportunities for outstanding biomedical and health researchers with proven track records to undertake research that is both of major importance in its field and of significant benefit to Australian health and medical research. Research Fellowships offered by the NHMRC are prestigious awards and are, consequently, highly sought after and extremely competitive.

An NHMRC Research Fellowship is a full time research appointment that enables high caliber biomedical and health researchers with a proven track record in research to undertake research of significant benefit to the health of Australians. Opportunities exist in biomedical, clinical and population health research.

- **the use of medical research in planning for health provision to the ACT and surrounding population;**

In 2001, the NHMRC announced a $50 million program in response to the need for a long term, programmatic approach to research which informs health care policy. This funding is separate from, and in addition to, the funding provided for investigator initiated research.

The Health Services Research Program was established to bridge the gaps between research, policy and practice by offering policy makers and health service providers opportunities to address research questions of crucial importance to them. Its aims are to:

- Support a program linking the Commonwealth, States and NHMRC;
- Fund high quality, policy relevant research which will establish crucial evidence to inform policy and practice;
- Encourage collaborative links between researchers, policy makers and practitioners;
- Increase expertise and capacity in policy and service delivery-related research.

Research supported by this program, such as the grant to Dr Butler at the ANU, is aimed at generating evidence which policy makers and practitioners can use to design and deliver more effective and efficient health care.

- **ways in which medical research can assist to lower the cost of health provision;**

See previous comments concerning the NHMRC's role and capacity to assist in encouraging the use of medical research in planning for health provision to States and Territories.

Additionally, commercialisation of health and medical research can result in returns accruing to the ACT which can be used to offset the costs of health provision.

Below is a brief summary of each of the NHMRC programs that provide research funding support to grants / awards that demonstrate innovation and commercialisation potential:

1. The NHMRC Development Grants scheme

Established in response to the Wills Review, Development Grants provide funding for research commercialisation at the early proof-of-concept stage. While it is not a requirement that applicants have a commercial partner in place at the time of application, this is strongly encouraged.

The scheme is not intended to be an alternative to the NHMRC Project Grants scheme (see below), nor is it meant to be an alternative to industry development schemes. Rather the scheme is pitched at the perceived funding gap between the end of a high quality basic research program and the developments required to make the project commercially attractive to potential investors.

Applications must demonstrate a basic understanding of the process and steps to move from research to outcomes with commercialisation potential, including;

- the process and steps to a market, the nature of the market;
- the milestones and risks of the venture; and
- an understanding of possible means of handling intellectual property connected with the project.

Development Grants are normally awarded for a period of one year, but are extendable, subject to existing milestones being met. The grant request will usually not exceed $200,000 per annum, unless there are exceptional circumstances. Peer review is conducted by the Development Grants Assessment Panel.

Applications for Development Grants are currently called twice a year.

2. The NHMRC Industry Fellowships scheme

Industry Fellowships were established to develop the commercialisation skills available to researchers. The objectives of the scheme are to:

- Provide a vehicle for Australian researchers to gain experience in industrial research including project planning, business planning, and knowledge of business and industry dynamics, and
- Increase knowledge of the commercial aspects of R&D within research institutions.

Industry Fellowships target researchers with a track record of research excellence and commercial interest to spend up to two years in industry (in Australia or overseas), followed by 2 years at a research institution in Australia. Up to ten of these four year fellowships may be awarded annually, determined by the scientific and commercial merits of the applications.

The amount offered in support of the Fellowships is $88,750 per annum. The industry partner is not required to contribute salary but to provide support for research activity during the placement.

- models to support medical research;

See previous comments.

National Health and Medical Research Council
25 July 2005