



28th May 2012

To Whom It May Concern,

Please find enclosed a submission to the McKeon review of medical research from the Monash University School of Public Health and Preventive Medicine.

The major points are

1 Major parts of medical research are fundamental requirements for a properly functioning healthcare system. Much of the work undertaken by clinical researchers, public health researchers and health services researchers are needed for the day-to-day monitoring and improvement of routine health services. If they are not adequately funded the result will include wasted expenses on sub-optimal therapies and inappropriate management of public health hazards and emergencies.

2 Present arrangements have left the Australia severely deficient in several key skills needed to cope with looming health issues. These include epidemiologists, biostatisticians, data-managers & health economists. Unless this deficiency is remedied the country will be poorly prepared to deal with the rapidly increasing amount of data being collected.

3 Amongst looming priorities for medical research, the issue of aging Australians must be amongst the highest priorities. Unless means are found to delay the onset of disability and dementia in older people the costs of caring for aging people will increase sharply. A recent report predicted that Australia will face the prospect of having three working people for each retiree (compared with 5 at present).

4 Incorporation of research data into clinical practice requires its uptake into clinical guidelines and encouragement to ensure guidelines are followed by clinicians. Clinical registries are amongst the most effective means of monitoring and encouraging the uptake of guidelines. Australia should follow other countries in developing a nationwide registry program as a principal strategy for research translation.

Kind Regards,

A handwritten signature in blue ink, appearing to read 'John J McNeil'.

Professor John J McNeil
Head, School of Public Health & Preventive Medicine

WHY IS IT IN AUSTRALIA'S INTEREST TO HAVE A VIABLE, INTERNATIONALLY COMPETITIVE, HEALTH & MEDICAL RESEARCH SECTOR?

1 **NECESSARY EXPERTISE FOR THE NATION:** Virtually every area of medicine & healthcare, ranging from blood transfusion to water quality, is subject to rapid and continuous change. New information must be evaluated and where appropriate assimilated into health-care at an ever increasing rate. Individuals with a **medical research background** are those primarily involved and capable of undertaking this task. Very few without strong research involvement have the credibility to contribute to this activity. Researchers are overwhelmingly represented amongst those providing information to government and industry on health related matters.

2 **INFORMED CLINICAL LEADERSHIP:** in the Australian healthcare system teaching hospitals provide the nucleus of expertise and understanding from which new knowledge spreads to private specialist, general practitioners and other health professionals. They fulfil this role by attracting opinion leaders who typically develop this role through **medical research leadership**. These individuals attract new staff from amongst the brightest graduates and play a major role in developing the high standing and prestige of these institutions. This in turn feeds into high quality patient care.

3 **TEACHING CRITICAL EVALUATION:** In our health system considerable latitude is provided to clinicians to suggest or choose diagnostic and treatment strategies. For this reason those reasons students must be provided with critical evaluation skills that will allow them to provide appropriate advice and explain reasons to patients. This capability is largely confined to those with a **medical research background**. This is a principal reason why Universities seek to expose students to teachers who are accomplished in research as well as clinical practice.

4 **ECONOMIC BENEFITS:** **Medical research** brings economic benefits to Australia. The development of the HPV vaccine and the bionic ear, the commercial trials of new drugs and the products developed by CSL are widely appreciated examples. Another example from the applied area of clinical research is the ASPREE trial of low dose aspirin, funded by the US National Institutes of Health, is expected to bring over 30 million dollars to Australia over the next 5 years. Much more could be done to develop niche areas of high international competitiveness.

5 **INTERNATIONAL RANKINGS & REPUTATION:** The international rankings of universities will increasingly determine which universities are eligible to train international students and which are likely to attract research contracts. The higher education market is currently a major

earner for Australia but would be compromised if Australia's research output declined.

Medical research is an important component of national research activity.

HOW MIGHT MEDICAL RESEARCH BE BEST MANAGED AND FUNDED IN AUSTRALIA?

1 The present strategy of managing research funding has led to a mismatch between strategic requirements and current skills and resources. A variety of important research skills, particularly those involved in data-collection, data-management and data-analysis have left Australia substantially underprepared for the future. To a large extent this situation has resulted from the low funding provided for applied (clinical, public health & health services research) over several decades. It is also a result of the Go8 universities focussing their research interest's primarily on biomedical research and providing few avenues for highly research capable students to enter applied research fields. Since many of the looming priority area of health research will depend on 'applied' researchers it is important that this problem is addressed. In the short term it will be necessary to provide 'bridging' fellowships to allow bio-medically trained PhD's to 'convert' to applied research careers

2 The failure of Commonwealth and State Government health departments to engage in the research process (except to block and retard) is quite notable in Australia and compares unfavourably with both Europe and North America. At present research is considered largely the province of the NHMRC, regardless of how closely aligned to the strategic needs of the healthcare system. The problem is compounded by frequent refusal to allow researchers to gain access to data, regardless of the importance of the public health issue or the appropriateness of the arrangements to manage confidentiality. Examples of the restrictions are the refusal of the electoral commission to approve most applications for randomised population samples and the refusal of the Australian Bureau of Statistics to provide causes of death.

3 A strong case exists to separate the basic and applied funding roles of NHMRC as is the practice in the UK. Applied research should be the direct responsibility of health authorities and the development of a flourishing applied research sector should be made a direct responsibility of Health ministers.

WHAT ARE THE MEDICAL RESEARCH STRATEGIC DIRECTIONS AND HOW MIGHT WE MEET THEM?

We see the following as the principal drivers of medical research

1. Aging Population: A major challenge of health care will be to prolong the time over which older people retain their intellectual faculties and their independence. Epidemiological studies of aging populations will be needed to identify better approaches to delaying the onset of disability and testing their utility amongst aging populations.

NEEDS: Data resources to inform policy

Basic and applied research into dementia and disability

2. Data Accumulation: The pace of data collection throughout the health system has increased at a rapid pace. The ability to develop and analyse large healthcare databases is a specialised skill which requires development over a long term. Skills for undertaking such analyses are developed within schools such as SPHPM.

NEEDS: capacity building (epidemiologists , biostatisticians , data-managers)

3. Increasing pace of innovation and cost: The pace of innovation in healthcare is accelerating, leading to new drugs, new devices and new diagnostic approaches. Unrelenting increases in the cost of healthcare have led to growth in measurement of the **cost effectiveness** of new treatments and technologies. This has spurred increasing interest in **prioritisation** of access to care and to **comparative efficacy** studies designed to establish the superiority (or lack thereof) of new innovations over established approaches.. Finding a place for new innovations in clinical practice requires **translational research** activities.. After introduction into practice, the ongoing monitoring of the safety of innovations, their **cost-effectiveness** and **appropriate use** will also be required.

NEEDS: capacity building (health economists, clinical researchers)

removal of barriers to conduct of research & access of data

4. Prevention: Questions such as how best to target preventive medications and how best to assess their cost effectiveness will require a combination of skills drawn from epidemiology, epidemiological modelling, health economics and actuarial science. These and other skills involving social science, health policy and management, will also be required to measure the cost effectiveness of community based interventions and to compare their effectiveness with individual high risk approaches to treatment

NEEDS: .improved data resources to inform policy]

capacity building (epidemiologists, clinical researchers, health economists, epidemiological modellers)

5. Quality of Healthcare: Improving the safety and quality of healthcare requires measurement using strategies such as clinical quality registries and various indices based on routinely collected administrative data. Epidemiology, biostatistics and clinical and health services research play a key role in the development of improved methods of measuring quality.

NEEDS: data resources: clinical registries

capacity building (clinical researchers, health services researchers)

6. Risk Aversion: New legislation and adverse legal findings are leading to increased safety monitoring and risk assessment of new drugs, devices and new clinical procedures. This will require the establishment of registries, cohort studies, data linkage and case-control studies.

NEEDS: registers of new devices, some new drugs, new surgical procedures

capacity building (clinical epidemiologists)

HOW CAN WE OPTIMISE TRANSLATION OF HEALTH & MEDICAL RESEARCH INTO BETTER HEALTH & WELLBEING?

1 Translation of research findings into medical practice takes place in a three step process, viz (a) publication and validation of research findings, (b) assimilation into clinical practice guidelines and (c) monitoring and encouraging uptake of guidelines. Uptake into clinical guidelines often incurs an appropriate and necessary delay because it reflects the time taken to verify the results and achieve consensus about how they should best be assimilated into clinical practice

2 More important is the delay between the publication of guidelines and their adoption by some clinicians. In the past this has largely resulted from the lack of accountability of clinicians and the vagaries of a payment system that rewards the delivery of treatment but which requires no feedback about the outcomes or the nature of treatment provided. The development of clinical registries which systematically collect information on treatments and their outcomes from hospitals across Australia provide an opportunity to monitor and encourage the uptake of guideline approved treatments.

3 Internationally there are numerous examples where the establishment of clinical registries has improved the uptake of evidence based treatment guidelines by informing clinicians when they are deviating from best practice or from the practice of their peers. Sweden is a country where clinical registries have been widely utilised and now cover approximately 25% of all healthcare encounters. The promotion of best practice by the 90 or so clinical registries in that country are thought to have reduced the growth of healthcare costs by approximately ½ of a per-cent, saving billions of dollars over a 10 year period.

4 Another example of the value of this type of monitoring is the US 'Get with the Guidelines' program which identified wide disparities amongst healthcare institutions in their use of evidence based treatments recommended after hospital treatment for heart attacks. After measuring and publicising this finding institutions where clinical practice deviated from that recommended took rapid action to change their practice.

5 At present the Australian Commission for Safety and Quality in Healthcare is developing a proposal for establishment of a program of key registries in Australia. If developed this scheme will play a key role in promoting this form of translation. The establishment of clinical registries

however requires expertise in multiple skills related to 'registry science' which must be developed in this country. These skills include clinical epidemiology, biostatistics, ethics, governance and data-management.