



School of Public Health and Preventive Medicine
Faculty of Medicine, Nursing and Health Sciences

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Senate Standing Committees on Economics
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Secretariat,

Response to Senate Inquiry into Australia's InnovationSystem

Focus: Workforce Shortage

These comments are confined to the need for innovation in the Health sector of the economy.

Despite being one of the most research intensive sectors, many of the most important areas within the health sector are in urgent need of new innovative ideas and approaches. Amongst these are:

1. Improving the productivity of the Australian Healthcare system
2. Evaluating cost-effective approaches to treatment and prevention
3. Benchmarking clinical outcomes to improve quality of care
4. Improving safety monitoring for drugs, devices and new surgical approaches
5. Redesigning the healthcare workforce

The lack of progress can be ascribed in large part to a lack of individuals with the necessary skills in the 'applied medical sciences' who have clinical knowledge and are capable of **designing and analysing 'large data'**.

To this point much of the innovation in health has been directed towards identifying new drugs, devices and diagnostic agents through investment in basic medical research. A strong 'pipeline' has been developed within Universities and Research Institutes to train students from undergraduate to doctoral degrees in basic sciences. At present over 2,500 doctorates are conferred annually, from Australian Universities in scientific and medical research, only a minority of whom will find direct employment in the areas for which they have been trained.

On the other hand major shortages exist in areas which will be needed to drive innovation in the areas described above. All of these innovation areas are data intensive and will require combinations of skills that are rare in both Australia and overseas. These skills are in increasing demand as the amount of data generated by the health sector increases. The analysis of this information require a combination of skills in medicine, epidemiology and biostatistics and some years of experience before one can be assumed to be judgement safe.



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The shortage of individuals adequately trained to meet this new 'health information age' can be traced to several factors including:

1. Absence of an undergraduate pathway into the applied medical sciences
2. Absence of an attractive postgraduate pathway for career development for clinicians
3. Relative lack of applied research training and practice within both universities and research institutes

Unless this issue is addressed we are heading for a highly innovative biotech sector coupled with an increasingly unproductive health sector as a whole.

Solutions

- 1 Develop undergraduate courses that begin the training pathway to a career in applied medical research.
- 2 Provide attractive career options for clinicians to develop careers in applied medical research.
- 3 Adopt the UK model for funding applied clinical research as part of the health budget rather than the medical research budget.
- 4 Increased funding for dedicated research time for selected hospital-based clinicians.

I hope that these comments are helpful. I would be happy to be participate in relevant discussions about this topic.

Kind Regards,

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