

Australia: Good at medical research; not so good at converting it into patient and economic outcomes

- ▲ **Australia is among the top countries in the world in biomedical research**, producing 3% of the world's published medical research.
- ▲ **In contrast, we rank 20th in a key indicator of commercialisation success**, accounting for less than 0.8% of the world's triadic patents (a patent registered in the USA, Europe and Japan).
- ▲ **This represents thousands of wasted opportunities each year**, reducing the potential health and financial benefits of the Government's substantial investment in research.
- ▲ **Australia must improve its ability to translate its world-class research** into commercially viable health and medical technologies and treatments.

An effective commercialisation system

Build on the success of our most effective commercialising institutions

Enable a local venture capital industry and capital market funding

Align academic culture with commercial objectives and insights

Target Government interventions to high impact points of identified commercialisation failure

Provide an internationally competitive regulatory and policy framework

Consolidate and develop commercialisation skills and experience

Provide seamless knowledge and communication flow between business, clinicians, funders and scientists

Diagnosis: The Australian system

Australia has several success stories – the commercialisation arm UniQuest, and seed funds Uniseed and the Medical Research Commercialisation Fund are great examples. Let's emulate them.

Venture capital is limited in Australia in part because the intellectual property (IP) that forms the basis for investment decisions remains under-developed and under-funded in the early stages.

Researchers are effectively 'punished' by the Australian grant system for any activity that does not generate peer-reviewed publications, including commercialisation activities.

The risk profile of human research is a barrier to commercial investment in the early, higher-risk stages of commercialisation, i.e. demonstrating proof of concept, IP protection, early clinical development. Government programs targeting this market failure are too small, prescriptive and unresponsive to the longer timescales (10-20 years) and needs of medical endeavours.*

There are several unnecessary regulatory burdens, particularly for clinical trials, reducing the attractiveness of Australian medical research as a commercial investment opportunity.

Commercialisation expertise is thinly spread across the 39 universities, 42 MRIs and over 100 hospitals where potentially commercialisable research is performed. Some research organisations and hospitals do not have a single full time person dedicated to the many faceted task of commercialisation.

There is limited opportunity for professional linkages between the academic and commercial sectors, so the cultures remain separate.† Many researchers in Australia will finish their careers having had no contact at all with the commercial world.

* In 2011, the NHMRC Development Grant (proof-of-concept) scheme funded just 16 grants to a total of \$7.5 million. In contrast, the ARC Linkage Projects scheme awarded 336 grants to a total of \$101 million in 2012. † In 2011, the NHMRC awarded just four Industry Career Development Fellowships, its only industry placement program.

Enhancing returns on Australia's investment in health and medical research

Five key initiatives to put Australia on par with the best in the world

AAMRI has proposed five initiatives in its report *Enhancing the commercialisation outcomes of health & medical research*. The report is the outcome of a roundtable of representatives from the research, commercialisation, venture capital and biotech sectors.

1. Establish 'proof-of-concept' funds on up to ten health-research precincts

- ▲ These funds would enable experiments aimed at demonstrating a product concept, and the early protection of potentially valuable intellectual property. Currently, funding for this crucial first step in the commercialisation process is extremely limited.
- ▲ Precinct level funding would maximise flexibility, capitalise on local knowledge of precinct expertise and objectives, and engender further collaboration between health precinct partners.
- ▲ **Outcome: More Government-funded research will find its way out of the laboratory and into a world in which its potential for benefit to patients can be tested and protected.**

2. Consolidate and integrate the commercialisation expertise in Australia's research institutions and hospitals into a small number of commercialisation arms

- ▲ These commercialisation hubs would create a critical mass of skills and knowledge necessary for the many-faceted task of commercialisation, currently lacking in the many small, under-resourced commercialisation arms of research organisations and hospitals.
- ▲ **Outcome: Commercialisation will be more effectively carried out and de-risked, increasing the likelihood of success.**

3. Create a further two seed funds based on the models of the Medical Research Commercialisation Fund and Uniseed

- ▲ These seed funds would provide much needed early stage venture capital for products that have passed the 'proof-of-concept' stage, and would leverage further venture capital funding.

- ▲ Investors are much more likely to engage with experienced seed funds representing research catchments of substantial size and range. By subsidising the administration costs of these seed funds, the Government could further enhance their attractiveness as an investment.

- ▲ **Outcome: Australian and international venture capital, including the large, mostly-untapped superannuation industry, will be attracted back to Australian biotech.**

4. Include and comprehensively evaluate metrics of commercial success in all National Health and Medical Research Council (NHMRC) grant and fellowship applications

- ▲ Commercialisation metrics would be evaluated alongside traditional academic measures, and people with commercial experience would sit on all grant panels.
- ▲ All medical research PhD programs would also include a commercialisation component.
- ▲ **Outcome: Commercial value realisation will be encouraged (rather than penalised) as a priority outcome of the academic research endeavour.**

5. Optimise regulation and Government support programs

- ▲ Unnecessary barriers to commercial investment in research and commercialisation would be removed, particularly in the area of clinical trials.
- ▲ Existing Government initiatives supporting commercialisation would be re-configured to ensure they are flexible and address biomedical commercialisation market failures.
- ▲ **Outcome: Investment bottlenecks in the medical research commercialisation pipeline will be addressed, ensuring an effective commercialisation system.**

Find AAMRI's report at

www.aamri.org