

Submission to the Strategic Review of Health and Medical Research in Australia

Geneva, March 30, 2012

Dear Reviewers,

I am an Australian medical researcher who has been working with a nonprofit organization in Geneva for the last seven years. In my current role as Director for Drug Discovery and Preclinical Research at the Drugs for Neglected Diseases initiative (www.dndi.org), I am responsible for the design and early development of new drugs to treat a number of tropical, infectious diseases. In the last six years, DNDi has produced six new treatments for neglected diseases which include malaria, sleeping sickness, Chagas disease and leishmaniasis and has also built a strong drug research pipeline for these and other diseases including filariasis and paediatric HIV. Prior to moving to Switzerland, I was senior Vice-President of Research and Development at the Australian biotechnology company, Progen Pharmaceuticals.

I believe strongly that Australia is a world leader in medical research and that over the years we have made a significant contribution to improvements in global health. Several examples, you are no doubt aware of are: the early discovery of penicillin by Sir Howard Florey, to more recent innovations such as, Gardasil, the Nobel prizewinning development of an antibiotic treatment for *Helicobacter pylori* associated gastric ulcers, and the development of the bionic ear.

As recognized by the Terms of Reference of this review, there have been some challenges in Australia to translate high quality work into products that address global health needs. This can be evidenced by the offshore development and commercialisation of Australian research. Product development is a multidisciplinary research exercise, requiring a broad range of skills; some of which are best accessed within a public research environment and others within the biomedical industry's research laboratories. Whilst Australia is moving to remedy this, through investment in translational research centres and initiatives, there is little expertise to draw on locally.

Opportunities for Australia's health and medical research community

1) Improving translation of research outcomes through international collaborations with the support of PDPs
A recent innovation, which has been designed to facilitate and optimise partnerships between the public and private sectors with the goal of developing new products to address global health needs, is the Product Development Partnership (PDP) model.

PDPs are public health-driven, not-for-profit organisations that typically use private sector management practices to drive product development with external partners, from academic institutions to Pharmaceutical companies. PDPs tend to focus on one or more neglected diseases and aim to develop products suitable for developing country use. Their primary goal is improving and saving lives through developing new tools, rather than commercial gain. Still, they apply industry best practices in their R&D activities – for instance, portfolio management and industrial project management.

PDPs such as DNDi have been very successful ventures: as can be evidenced by the number of new treatments that have been developed and taken to patients over the last few years. The annual rate of new product approvals for neglected diseases increased from an average of 1.8 between 1975 and 1999 to 2.6 between 2000 and 2009. During the same time period, PDPs accounted for a growing share of all products gaining regulatory approvals to treat neglected diseases from 15 percent to 46 percent annually.

Australian researchers are already collaborating in global research partnerships with PDPs. One example, sponsored by DNDi is a partnership with Monash and Murdoch Universities, an Australian biotechnology company, Epichem together with the University of Ouro Preto in Brazil and Advinus Therapeutics in India. This collaboration has yielded a new drug candidate for the treatment of Chagas disease. To a very large degree, these collaborations have been funded by the PDPs.

An increased commitment to support Australian researchers to participate in such global public/private partnerships with PDPs would leverage investment and support from the private and philanthropy sectors. It would also foster research expertise for the development of new health products for the developing world.

2) Australian researchers combating neglected diseases, a major barrier to improved health in the developing world

Australian fundamental biomedical research already has the potential to benefit global health needs that do not exist in Australia. This includes research into neglected tropical diseases which blight the lives of a billion people worldwide and threaten the health of millions more. For many of those diseases such as leishmaniasis, helminth infections and Chagas disease, no adequate treatment exists.

Therefore, Australian researchers have an opportunity to take fundamental biomedical research for neglected diseases to the next step through collaboration with PDPs. Increased funding to encourage and enable participation in PDP facilitated research consortia would allow this to occur.

A major outcome of these collaborations with these PDPs would be increased capacity in Australia to translate medical research into solutions for Australian medical needs. It may also contribute to increased capacity to commercialise Australian medical research for health markets in developed countries.

I strongly believe that Australia's research community can join forces with PDPs and their pooled expertise, to find solutions to effectively tackle neglected diseases. We are now at an historic turning point in global health. We've had more than a decade of unprecedented public and private funding and commitment to fighting neglected diseases. The time has come for Australia to step up to take its place as a direct supporter of this important work.

Recommendations to assist in improving health globally, especially in the developing world

1. Expand the scope of research funded by NHMRC to generate health benefit outside of Australia, to include developing countries (in the Pacific region and beyond).
2. Encourage multi-disciplinary translational research.
3. Encourage NHMRC-funded Australian researchers to collaborate internationally, to leverage additional skills and funding in translational research, to improve global health.
4. Develop funding programs/mechanisms for translational research and product development, to yield health benefit for the developing world and contribute to the public good.

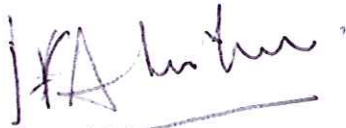
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Submission made on behalf of DNDI, a non-profit Product Development Partnership (PDP). Submission approved by DNDI's Director of Advocacy, Communications and Fundraising, Jean-François Alesandrini. DNDI's submission is available to being made public.



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