Lions Eye Institute Submission
Parliamentary Inquiry into Support for Health and Medical Research Funding Priorities

Introduction

The LEI mission is to help prevent the devastating impact of vision loss and blindness. We invest in medical research, world-class researchers, cutting-edge medical equipment and community programs, in the metropolitan and outback areas of Western Australia, and internationally. We are a not-for-profit organisation that exists to help make people's lives better through the saving of sight.

Our innovative research has culminated in recognition from global leading organisations including NASA, Google Health and the World Health Organisation. We have a strong reputation for research translation that include improvements in clinical practice, new technologies, artificial cornea and gene technologies. Our research program is successful because of the excellence of our research teams and the generous support of community and industry leaders.

LEI strongly supports the submission made by WA AAMRI and its recommendations under each of the terms of reference for the Inquiry.

Response to Terms of Reference

1 Western Australia's small share of national competitive funding

The problems of loss of sight and blindness are not major drivers of national health and hospital costs, and hence not necessarily prioritised for the national research grants which provide longer term funding for research programs. LEI receives significant shorter term and smaller grant support awarded by industry organisations, charitable institutions, other research grant funders, but each year is carrying a larger research deficit funded from its own source internal revenue.

Our recommended actions address three themes

1) Sustaining a research workforce
   a) Securing and sustaining young researchers. This could be achieved by providing funded mentoring programs in the first year or two which would greatly assist the pipeline of early career researcher establishment and success. Often senior active researchers do not have enough time, nor skills, to be a good mentor.
   b) Assisting in the provision of career pathways into research for clinicians. LEI is very keen to foster pathways for clinician researchers. We currently pay a small amount to clinicians to take up academic positions at 0.1FTE at UWA, and the Department of Health enables some research time. However, this is a drain on our budget and the amount of time for research is simply not enough. It would be good to have a funded strategy from the State, as clinician researchers are often very successful at translation of research into clinical practice.

2) Provide more incentives for WA applicants to national funding bodies.
   The WA applicants have been shown to be just under the bar for achieving funding at the rate of other jurisdictions. While many are rated high enough to be very competitive, the pool cannot extend to these applicants. In such cases the applicants are awarded near-

miss funding by WA Health Department for one year of research to improve the application and be more competitive in the following year.

It is recommended that the outcomes of the near miss funding are reviewed, with open questions on possible alternatives. It seems rare that the second submission is successful. Successful applications are built on many years research - and one year funding while welcome, is often too tight a timeline to secure research staff and materials needed to progress the research to the highly competitive category.

One option LEI recommends, is WA government co-funding the second application for the first 1-2 years to reduce overall cost and be an incentive to the NHMRC, MRFF or ARC .

2 How the state's health and medical research priorities are determined

There are compatible priorities between WA Health Medical Research Strategy and the FHRI Fund.

- Under the WA Health Medical Research Strategy, LEI would emphasise the importance of assisting to provide career pathways
- Under the FHRI Strategy, LEI endorses and prioritises two focus areas:
  - Aboriginal eye health is a high priority
  - Burden of disease – eye disease burden is carried by individuals, community and national unemployment, age care, social and disability funding.

3 The impact on specific types of research and areas of need

The economic, social, mental health and wellbeing impacts of loss of sight are enormous and increasing as the population ages. The majority of loss of sight and eye disease occurs late in adulthood and most significantly after age 65. It is frequently reported that *the proportion of the Australian population that is aged 65 years or over is expected to increase from 16% in 2019–20 to 23% by 2060–61.*

Accordingly, LEI recommends that the State's health and medical research priorities consider broad population impacts, and potential for positive impacts through service-oriented research translation. This can be achieved by continuing and enhancing the recent focus on research translation and invention.

We suggest the creation of a new category of support for 'service innovation'. Where research translation does not have significant commercial financial opportunity/upside, it will often not attract external investment or interest. However, there may be significant social benefit to the community or WA health service costs/outlays. For example, a new mode of delivering services, new or different ways to build the clinician workforce (including diversified workforce models of care), alternative clinical facilities, precision health, data-driven analytics, digital health and artificial intelligence are all areas of innovation for the purpose of service improvement. As such, service innovation needs to be included in the definition of medical research translation and given some specific and identified funding support. The recent WA 'Pilbara Challenge' is an excellent example of this.

Dr Glen Power
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Lions Eye Institute

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Attachment Summary of LEI Innovation

Over the years the emphasis in eye research has changed with increasingly sophisticated imaging technology, data capture and analytic capability and artificial intelligence that can draw on very large population data. What was once a hard line between ophthalmic (and other specialist research) and optometric research, driven by occupational division, has now become a fluid line that increases diagnostic capability, disease cause and treatment identification, by using the eye as the window for non-invasive detection methodologies.

Some of our highlights from 2023 are

a) Making home monitoring equipment available to patients with glaucoma to remotely monitor patient conditions and alert the clinic and clinicians when unfavourable conditions occur that require intervention; and to collect research information on glaucoma progression and opportunities for optimal treatment responses.
b) Expanding our corneal research to benefit from personalised therapeutic technologies that will allow patients with damaged corneas to have corneal replacements that are created by using the patients' own cells
c) Major steps forward to identify the genetic and environmental causes of myopia and the interplay between these. This will result in preventative treatments that can curb consequential loss of sight in later years.
d) Developing non invasive technology to pre clinical trials standard to measure and monitor intra cranial pressure. The technology can help identify and manage treatment for intra cranial pressure associated with several different causes, of which hydrocephalus in children is a particular concern occurring in about 1 in 800 children.
e) Progressing the paediatric retinopathy project to establish the optimal points of intervention in diabetic retinopathy to prevent loss of sight and also identify developing renal and other systemic problems caused by diabetes
f) Getting our research on Ushers Syndrome fully operational with the aim of identifying genetic interventions and potential drug options that will prevent symptoms of blindness, deafness and loss of balance developing as a result of this rare disease.
g) Continued focus on reducing health inequality by building our knowledge of population sectors that are disadvantaged in receiving poor eyecare and suffering increased vision loss. In particular for regional and remote area populations for whom we are testing innovative means to increase service provision using more technology and linking patient data for outcomes research.
h) we have begun an exciting longitudinal study of improved visual Field technologies to more accurately and rapidly detect glaucoma changes in patients. This project is being led by professors Mckendrick and Turpin. And is already making differences to patient lives in the clinic.