University of South Australia

South Australian Productivity Commission
Issues Paper: Health and Medical Research in South Australia
Responses from the University of South Australia

The University of South Australia thanks the SA Productivity Commission for the opportunity to contribute to the review of health and medical research.

Overall, the University sees a great opportunity to build on the successes achieved in clinical trials management, and in the collaborative response to COVID-19, to develop a Statewide, coordinated approach to the determination of health and medical research priorities. This will have flow on benefits such as the development of a strategic roadmap for major research infrastructure and data management; mechanisms for the attraction and retention of talent and growth of talent in the Aboriginal and Torres Strait Islander community; minimization of research bureaucracy; and the harnessing of clinical—across the broad range of healthcare—and academic talent to address pressing health needs for SA and beyond.

The current **Policy environment** (3.1) is fractured, and this often places conflicting demands on researchers. The division of responsibility in Australian and state government policy settings for primary and secondary care, for example, creates barriers to research on ageing, rehabilitation and community health. These difficulties are enhanced, though, by the absence of a clear health and medical research strategy and set of priorities at State level. In the absence of that, approaches to major infrastructure requests, talent acquisition and retention, and major grant opportunities fall to bottom up approaches time and time again. The MRFF is an example of an opportunity that might not have been harnessed strategically, and this has been to the overall detriment of SA. Moreover, processes such as ethics approval have become more and more local, with the resulting number of committees and amount of red tape multiplying, and approaches to data acquisition and management and consumer engagement becoming expensive items for individual researchers.

As the examples of cooperation for NCRIS initiatives, and combating the effects of COVID-19 show, there is now a strong spirit of cooperation between the universities, SAHMRI, SA Health, the Office of the Chief Scientist, and wider state government. SA has managed to secure major investments in infrastructure upgrades through Microscopy Australia in ways that other states have struggled to achieve. Examples like this show that much can be gained from a spirit of proactive, competitive collaboration: the bringing of individual differences to major projects will help SA to regain ground, particularly in competitive funding. These efforts will be accelerated through the identification of priorities by an integrated, overarching governance structure for health and medical research in SA, which is currently absent. To our view, it is timely for SAHMRI and SA Health to take the lead in this, working with the universities, and local health providers.

The Commission's approach to ***measurement and data*** **(4.1)** is welcome. In particular, the focus on strategic investment at state level in the comparative analysis should provide clear guidance on supporting a statewide strategy. The University encourages the Commission to look more closely at the innovation pipeline, as seen through disclosures and patents, as a further diagnostic, as well as to drill down on outputs data to identify quality indicators—such as 1% publications—and international as well as local and national collaboration rates in publications. This will help to further identify whether innovation in the state is—crudely put— inward, or outward looking, and whether any claims about lack of university and SAHMRI collaboration hold water.

The University also holds that there is a great opportunity for **workforce (5.1)** development and attraction to be more systemic, and outward looking. SA lacks a statewide approach—and supporting resources—to attract outstanding health and medical researcher talent, or to grow the population of Aboriginal and Torres Strait Islander researchers. Poaching of researchers within the State is a zero-sum game, and in the case of Aboriginal and Torres Strait Islander capacity, lack of investment in the long development pipeline for that group does little to address the fundamental challenges that communities face day to day. We strongly encourage the Commission to see Aboriginal and Torres Strait Islander peoples as a focus for workforce investment—they are presented as the subjects of research, rather than as researchers in the issues paper—as well as the attraction and retention of world-class researchers to the State.

There are very fruitful connections between UniSA researchers and clinical researchers but approaches from clinical researchers are often driven by individual imperatives rather than organisational strategy. In the case of allied practitioners and nurses, too, there is also no EB-sanctioned research time. This is compounded by contractual arrangements and part-time practitioners. This poses a major barrier to participation in research activities, and thus to upskilling. With a wider clinical workforce research strategy in place, it is a logical next step to ensure that there is a clear and effective system of clinical leads, to ensure that leadership capacity and collaboration are built proactively. These leads should represent expertise across the health workforce, from medical through to allied health.

Access to data (5.2) and information architecture require critical attention at state level. Access to data is often piecemeal or requires individual researchers to pay. SA/NT Datalink, for example, is funded by very tenuous subscription models whereas in other states its counterparts have government support. This type of data linkage for databases across health and welfare is vital. The absence of State-supported high-performance computing capability is also a major bottleneck for larger-scale, collaborative, data-driven research. It is important to address this gap in an infrastructure strategy, and to treat data as part of that infrastructure strategy, not a separate user pays component. Relatedly, the importance of defence research in SA suggests that investment in secure data networks could reap benefits in health defence research. These points all reflect the primary point of this submission: that a high-level strategy facilitates the kind of infrastructure planning needed to address these critical points.

Health and medical research in South Australia is supported by research **infrastructure (5.3)** extending beyond the specific infrastructure available at recognised precincts such as Biomed City and Tonsley. This includes NCRIS facilities which are not specific to health and medical research but health and medical researchers are heavy users. For example, at least 40% of all research infrastructure usage across NCRIS nodes hosted by UniSA (Microscopy Australia, ANFF, Bioplatforms Australia) is used for health and medical research.

What is lacking in SA is connection between research infrastructure, both public and private, resulting in duplication and/or lack of scale to support larger infrastructure. Given the size of Adelaide, physical proximity is less critical than developing high levels of connectivity between precincts so that researchers can check availability. This was attempted previously through AIB Labs with BioSA then TechinSA. A challenge with the AIB Labs model is that it wasn't open for all infrastructure and created new barriers to collaboration as a result.

A good example of the value of shared infrastructure is the GMP manufacturing facility at Mawson Lakes, established by UniSA and supported by the Cell Therapy Manufacturing CRC. This facility is currently shared by 3 startups (TekCyte, Ferranova, Carina Biotech). Each of the startups could not afford to establish such a facility. However, they have recently attracted significant investment as a result of their access to this facility.

Collaboration (5.4) is vital in health and medical research. There are significant but not exceptional levels of collaboration between HMR researchers/institutions. Much stronger incentives could be provided to favour SA collaboration on larger-scale grants. While small-scale collaboration is rewarded via funding schemes, it does not necessarily provide encouragement for collaboration between SA researchers. It may be more beneficial to collaborate outside SA and compete with others within the state. As the examples of NCRIS and response to COVID-19 impacts show, there has been strong collaboration between the universities, SAHMRI and SA Health. As with major health precincts in Victoria, major initiatives do not need a single player: agreed strategy is a great starting point. The SA Chief Scientist, in particular, has shown great leadership in infrastructure coordination and mapping. This has helped to set the tone for collaboration at all levels, and across institutions.

SA share of **funding (5.5)** has fallen as a consequence of lack of statewide strategy and strategic investment in initiatives, as noted at a number of points above. The MRFF, in particular, provides an outstanding opportunity for key players to build upon other major successes, such as clinical trials, to embark on an ambitious strategy for translational research. UniSA is an industry-intense research institution,

with well-earned gains in category 2–4 funding built upon decades of partnering with the community and business to ensure the translation of knowledge into translational outcomes. It looks forward to working more closely with the Chief Scientist, SAHMRI and SA Health to develop industry research plans at scale in ways that will benefit the State, and in particular the sectors it has identified as important. Health has a bearing on quite a few of them, and it is timely for the connection to be made.

Lack of statewide strategy and incentives to university and translation inhibit **translation of research (5.6)**. The success of the State In clinical trials is a firm foundation upon which to build further successes, given its enabling potential. The biggest immediate opportunity is to re-connect health and medical research back into the State's economic growth strategies, and to address any assumption that the biomed precinct is a sealed container for research in health and medical fields. The State's track record in defence research, and the burgeoning interest in space research, for example provide opportunities to recognize convergent opportunities with health. This convergent work can be encouraged via incentives for seed, series and series B support for projects that cross precincts.

South Australia has a number of competitive advantages (5.7 and 5.8 and 5.9, 5.10 and 5.11). Logistically, it is able to take advantage of routes opened up through Perth, as well as those directly from Adelaide, through to Europe, and important geoeconomic partners in the Indo-Pacific, such as India, Indonesia and Singapore. A stronger focus on larger-scale, strategic projects can mean more advantage is taken of these routes for collaborative projects and address the perception that VCs will only work the east coast. The scale of the population of SA fosters collaboration, and its segments also reinforce the value of its notable success in clinical trials work. The state boasts research capacity in preventative allied health, prescription oversight and management, bioinformatics, wastewater research on illicit substance use, medical devices, child protection and population health at levels that are excellent. Beyond that, performance on sits more on the scale of individual groups, and it is in the medical space that most gains can be achieved from strategic focus. On the medium to micro scale, precincts do provide a strategic opportunity, but as noted above, convergent opportunities that play to the State's existing economic strengths should be further encouraged.

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