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of ADELAIDE

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South Australian Productivity Commission Inquiry into Health and Medical Research in South Australia – Draft Report – submission from the University of Adelaide

On behalf of the University of Adelaide, please find attached a submission in response to the SAPC Health and Medical Research Inquiry Draft Report released on 2 September 2020.

As a major partner in the South Australian Health and Biomedical system, the University is pleased to participate in this initiative to identify opportunities to improve the State's capability to attract investment in Health and Medical Research.

Yours sincerely

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Deputy Vice-Chancellor and Vice-President (Research)

Attachment: University of Adelaide submission to the Draft Report of the SAPC Inquiry into Health and Medical Research in South Australia.

South Australian Productivity Commission Inquiry into Health and Medical Research in South Australia – Draft Report released 2 September 2020

Submission from the University of Adelaide, 16 October 2020

This submission is presented on behalf of the University of Adelaide by Professor Anton Middelberg, Deputy Vice-Chancellor and Vice-President (Research).

1. SUMMARY

The University of Adelaide commends the Commission for the considerable amount of work it has dedicated to the production of its draft Report. There is fundamental agreement with its key messages, and broad support for the findings of the draft Report and its draft recommendations.

The University is entirely committed to building a strong, transdisciplinary and highly-competitive Health and Medical Research (HMR) ecosystem in South Australia. In this context, we provide in this submission a number of options for the reimagining of existing structures and their integration.

2. INTRODUCTION

The University's research produces demonstrable benefits for the State, and it is a major contributor to State GDP. It underpins and contributes to the growth and development of key industries such as health and medicine, as well as informing and enriching policy-making and public debate in areas including social well-being. The existence of world-leading research in several areas also helps to attract major projects and investment into the State. The University's research is a key enabler for the Government's [Growth State](#) strategy.

There is no doubt that HMR is an area of significant importance to South Australians, and an intensely competitive global enterprise. HMR is increasingly and inexorably becoming interdisciplinary, requiring not just clinical research, cell biology, or biochemistry, but mathematics, physics, computational science and engineering, to name just a few. The technological sophistication and specialisation of expertise that must be brought to bear on the health and medical problems we are yet to solve grows almost exponentially.

One of the biggest HMR challenges for South Australia is attaining competitive critical mass in areas of fundamental importance to the State, such that we can make an impact locally, but also nationally and internationally. This requires investing in areas of strength, but also in identifying and rectifying gaps in critical research capabilities (both disciplinary and technological in nature). Research institutions (especially in a small state such as South Australia) should work together in way that optimises synergies, while supporting focussed effort on what it is they do that is excellent and internationally competitive, rather than broad-based. While there is value in shared spaces and physical proximity, co-location of institutions is not required for every site. Like collaboration, it should be pursued where it optimises synergies and leads to logical efficiencies.

As the draft Report correctly points out:

Pursuing a competitive edge in HMR necessarily means prioritised choices and limiting areas of focus. Excellence in every area of medicine, allied health and nursing is not practical for South Australia, nor any other Australian jurisdiction for that matter.¹

We know that global competition is intensifying, and many nations are investing far more in research than Australia. As the only Group of Eight university in the State, and with one of the two medical faculties, the University of Adelaide seeks to be competitive nationally and internationally, collaborating where appropriate synergies exist. Within South Australia, the primary competition comes from the national and international spheres. For example, in the most recent [Times Higher Education rankings](#), in the subject area of 'clinical,

¹ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.21

preclinical and health', the University of Oxford ranks as no.1 in the world, and the University of Melbourne (Australia's top ranked university) comes in at no.13 in the world. The University of Adelaide sits in the 101-125 band for this subject (seventh best in Australia). Through our 'Investing in Top Talent' appointments in HMR, to date comprising Professor Mark Jenkinson (jointly appointed with Oxford University and part funded by SAHMRI), Associate Professor Dan Thomas and Professor Alex Brown (the latter two jointly appointed with SAHMRI), we are seeking to expand and enhance our research in areas of existing strength that have profound clinical importance.

At its heart, success in HMR requires a focus on both Research Excellence and Clinical Research Impact. To this end, the University of Adelaide needs to work more closely with Local Health Network (LHN) partners. The draft Report correctly identifies that research has become de-emphasised in the LHNs, and the subsequent impact which this has had on the State's HMR sector. Anecdotally, the best clinical researchers are attracted to and retained within an ecosystem which facilitates easy physical access between a hospital and medical faculty with world-class research facilities. Also important is an environment in which they are supported and valued in their research endeavours across the entire ecosystem.

3. THE SAPC DRAFT REPORT – KEY MESSAGES

The draft Report has identified weaknesses of the current South Australian HMR ecosystem as a whole, as well as those of its individual components including the University of Adelaide, which have contributed to the relative decline.

As stated in its Executive Summary:

The position can be fixed but only with a practical and staged long-term plan that ensures all relevant South Australian Government affiliated or associated entities:

- *eliminate complexity and duplication;*
- *establish alignment among the components of the HMR system; and*
- *focus on encouraging and building a grassroots revival of clinical research in the public hospital system with efficient and direct interaction with SA universities and medical research institutes.²*

The University is very supportive of this approach to address the fundamental areas where the State can capitalise on its underlying strengths to grasp the opportunities to build a strong, transdisciplinary and highly-competitive HMR ecosystem. Of course, this will require a necessary, if challenging, re-imagining of existing structures and their integration.

We are also pleased to see that numerous aspects of the draft Report align well with key recommendations contained in the University's May 2020 submission to the SAPC Inquiry Issues Paper. In particular:

- Attracting and retaining high-quality research teams in South Australia through collaborative State investment in people.
- Re-integration of academic and clinical research endeavours for interdisciplinary HMR funding.
- Expansion and leverage of clinical trials and confidential data management and analysis.
- Creation of a clearer governance structure for the SA HMR ecosystem which avoids duplication, clarifies responsibilities, facilitates synergies and complementary capabilities, and assists with coordinated national funding initiatives.

The draft Report, where focussed on universities, also accords with many of the recommendations arising from an external review of the University of Adelaide's own HMR performance, conducted earlier this year by a panel of interstate experts. That review also focused on the need for strategic leadership, attracting and retaining talented people, promoting partnerships, collaboration and interdisciplinarity, etc., with the aim of seeing the University regain lost momentum and ensuring a strong and sustainable future.

The draft Report contains five draft recommendations which the University broadly supports, in particular:

- The prioritisation by SA Health and the LHNs to achieving excellent clinically-based health and medical research with translation impact, in collaboration with research partners.

² SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.14

- The simplification of regulatory frameworks by the Department for Health and Wellbeing to reduce impediments to achieving excellence in clinician-based research.
- Encouragement for members of the Adelaide BioMed City to search for and deliver precinct synergies, efficiencies and general value.
- Raising the proficiency and effectiveness of the HMR workforce within SA Health, including the provision of more scope for research time to attract, retain and develop clinician researchers.
- Increasing the number of clinical/academic joint appointments between LHNs, universities and other institutions, with top priority given to clinical research leaders.
- Ensuring the ongoing security and stability of SA NT DataLink.
- Streamlining the current regulatory environment as it relates to data access and privacy protection, which would facilitate clinical research by improving access to approved, patient-related data.

These draft recommendations would assist with the necessary task of re-connecting the components of the SA HMR ecosystem, and provide a greater sense of scale and focus.

4. BIG PICTURE SYNTHESIS - MAJOR ISSUES FOR CONSIDERATION

4.1 Precincts

One of the key messages of the draft Report, and of considerable importance to the University, is:

Sustained long term reform of South Australia's institutional architecture – governance, accountabilities, roles and relationships between the state's key HMR organisations – is needed.³

A primary component of a reformed HMR architecture in the State is the proposed creation of two HMR precincts based on geography and complementarity. As mentioned above, research institutions (especially in a small state such as SA) need to be able to work together in way that optimises synergies, but allows focus on specialised or niche areas of excellence.

As noted in the University's May 2020 submission to the SAPC HMR Issues paper, while there have been strong efforts to promote the (North Terrace-focussed) biomedical precinct, the precinct has yet to deliver as an interconnected and collaborative ecosystem.

To be successful, this has to generate a new focus on excellence and a different model of collaboration, not just within the Adelaide area, but also between centres of excellence and regions. We need precincts of innovation and excellence linked to a distributed system which encompasses both patients (e.g. via the University's Adelaide Rural Clinical School with multiple rural training sites across the State) and capabilities (e.g. the Australian Institute for Machine Learning on North Terrace utilising artificial intelligence to support biomedical research).

This approach is needed to provide a step-change in performance and delivery of sustained and impactful outcomes, facilitating the reduction of overlapping jurisdictions, unnecessary duplication of existing capabilities, and misaligned partner aims and strategies. It needs to be focused on excellence, as recruiting and supporting top-talent researchers in key academic domains is fundamental to enhancing the State's national and international standing.

This fits with the University's strategic approach to build scale and focus in research where, over the next 5 years, the University plans to lead development, in particular, on three main sectors of significant potential mid-term growth. We will *inter alia*:

- Amplify our digital and defence capabilities in the STEM precinct (leveraging the opportunities of Lot 14 and including Information Capability);
- Raise economic value through the Waite Campus (including the emerging Agri-tech area); and
- Build our biomedical impact (e.g. cellular reprogramming, cancer immunotherapy) around SA's leading medical school.

The draft Report promotes the idea of a precinct-focussed approach comprising two main parts:

³ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.12

- A North Terrace geographic cluster that is the basis of the Adelaide BioMed City (ABMC) precinct, which would include the University of Adelaide, SAHMRI, the Royal Adelaide Hospital and the University of South Australia, and would work with the Central Adelaide Local Health Network (CALHN); and
- A southern precinct comprising Flinders University, the Flinders Medical Centre and the Southern Adelaide Local Health Network (SALHN).

The University of Adelaide believes there is considerable merit in the two-precinct approach with all of their various partners, and focusing clinical research primarily around Adelaide’s two largest hospitals and its two medical faculties/schools. These latter elements are critical for attracting and retaining the clinical researchers who are at the heart of what we do, and who by extension draw from outside these precincts related and supporting areas including allied health, digital capabilities, engineering medical technology and drug delivery, as well as capitalising on existing capabilities within the precincts such as pharmacy, food nutrition, physiotherapy, etc.

As it is not possible to locate everything within a specific, geographic precinct focused on clinical excellence, it becomes necessary to view the two precincts as being the hubs within a much bigger system that draws all trans-disciplinary capabilities together. For example, the system needs to include the Northern Adelaide Local Health Network (NALHN) as well as CALHN and SALHN. The following map provides an indication of this idea:



Importantly, and an advantage of a hubs and spokes model, within the areas of particular focus there needs to be differentiation of function not duplication. For example, much of the State's cancer research is located in North Terrace institutions, logically in close proximity to the RAH. This rationale approach would provide clinician researchers with seamless physical access from the clinic to the medical school to the research laboratory. This will help in attracting and retaining researchers in a precinct which facilitates optimal interaction with both patients and research teams. Less clinically-focused, but nevertheless important, research does not have a strong need to be in close proximity to the major hospital in the State, or to a medical school, particularly if precinct space is limited within a 'Growth State' context and, hopefully, by an increase in clinical trials. For example, the Therapeutics Research Centre at the Queen Elizabeth Hospital, which is engaged in developing, formulating and characterising new nanosystems for delivery of therapeutic, diagnostic or prophylactic substances, is not physically located within the ABMC, and its researchers do not need immediate physical access to the RAH or the Adelaide Health and Medical Sciences Building to deliver effective outcomes. Similarly, researchers in Artificial Intelligence located on Lot 14 do not need to be able to walk daily to access patients.

The draft Report states that:

... the HMR interests between the two universities [Adelaide and the University of SA] appear to be significantly complementary – one largely focuses on medicine with the other largely focuses on nursing and allied health.⁴

In the context of an overall system re-design, with growth in HMR a required outcome, we need to ask what components need to be co-located within precincts and what could be more usefully conducted within a connected spoke. Even more ambitiously, could Allied Health and Nursing be more usefully located within a third precinct, for example centred at the Queen Elizabeth Hospital and projecting into under-served (e.g. NAHLN) regions? Might the two-precinct model logically become a three-precinct approach, with different partners leading within each precinct but connecting system-wide?

4.2 South Australian Health and Medical Research Institute (SAHMRI)

We agree with the draft Report's assertion that:

The central agenda is to fix the HMR system, not focus on any single component such as SAHMRI.⁵

However, the future of SAHMRI is of critical importance to the success of the ABMC precinct. The University has a profound interest in both, given our physical presence within, and relationships with, ABMC precinct partners, and the fact the University of Adelaide has by far the largest presence in SAHMRI itself. The University is a founding member and major stakeholder in SAHMRI, with approximately 190 salaried staff and 80 Higher Degree by Research students providing critical mass to its endeavours.

As the draft Report states:

SAHMRI was established to arrest the decline in South Australia's share of national research funding. While it has achieved some important successes to date, the Commission also considers it has been challenged by conflicts in its objectives and membership model and by flaws in the business model for medical research institutes (MRI) more generally.⁶

The draft Report sets out three structural options for SAHMRI to align its structure more closely with a purpose to develop as a centre of HMR excellence, and these options are addressed in the next section.

Therefore, we have a very keen interest in its future, as well as in the improvement of HMR performance in the State and, naturally enough, the University of Adelaide. In that context, the University is very much in accord with the objective (as stated in the draft Report) of eliminating complexity and duplication.

While we have worked collaboratively with and within SAHMRI, and will continue to do so, the University is of the belief that the central obstacle to SAHMRI delivering on its original intent is that with three university

⁴ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.22

⁵ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.20

⁶ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.12

partners, no single partner has been willing to make a full commitment to the success and sustainability of this joint institution. As the draft Report states:

While it [SAHMRI] has achieved some important successes to date, the Commission also considers it has been challenged by conflicts in its objectives and membership model and by flaws in the business model for medical research institutes (MRI) more generally.⁷

In this regard, we believe that the models of the [Walter and Eliza Hall Institute](#) and the [Murdoch Children's Research Institute](#), which both involve an exclusive model of linking to a single university partner (i.e. the University of Melbourne), are widely seen as preferable to the current SAHMRI model.

If pursued, this would require a substantial commitment by a university partner, and is one that the University of Adelaide would likely be willing to make. For example, the University is home to a new South Australian Cancer Institute seeded with \$80M in funding from the Federal Government. To be delivered in partnership with CALHN, the vision of this new institute is to diagnose and treat cancer by using the latest genomic, epigenetic and immunotherapeutic approaches. This initiative is an outstanding opportunity for the growth of health and medical research, of national standing, within South Australia. If the University of Adelaide were to be the sole university partner in SAHMRI, there would be a great opportunity to embed the new cancer research institute within SAHMRI, spearhead the development of comprehensive cancer care in South Australia, and ultimately, link into the national network of cancer institutes.

For such an arrangement to be successful, one of the central points made by the Inquiry (and acknowledged by the University), namely recruiting, retaining and mentoring a cohort of high-performing researchers, must be addressed. Recruitment should be at the highest international standard and include sufficient funding to support the work of entire teams. This could build on the University's own 'Investing in Top Talent' scheme, which has seen the appointment of several truly world-class researchers, as noted earlier.

To sum up, the University's overall suggestion is to make the ABMC a Precinct of Research Excellence and Clinical Research Impact, anchored by the Royal Adelaide Hospital and the University of Adelaide's Faculty of Health and Medical Sciences, where both the clinical and academic partners are fully committed to the success of SAHMRI through a new governance structure and business model. We believe this is more easily achieved with a single university partner in SAHMRI.

5. KEY POINTS AND CONCLUSION

Health and Medical Research in South Australia must deliver on two main objectives:

- Research excellence which is nationally competitive and benchmarked internationally; and
- Positive impact for patients and the wider community across the State.

In this context, the two intertwined elements of Excellence and Impact require:

- Close collaboration between research providers (universities) and those which translate research to patient impact (Local Health Networks);
- A breadth of excellent research from the fundamental (or basic) to the applied; and
- A depth of world-leading research in future-facing enablers (e.g. artificial intelligence, biophotonics, personal genomics).

Key Point 1: The University of Adelaide will build stronger partnerships with the Health Networks to maximise the translation and impact of its research excellence.

A research culture within a health network environment provides several tangible and intangible benefits. A research-enabled network/hospital will attract the best workforce, adopt evidence-based protocols of care and save system resources by providing the appropriate level of care in a cost-efficient manner.

Innovation leading to translation of excellent research is a 'contact sport'.⁸ Talented researchers and clinicians must be able to interact within a precinct, and this can be facilitated by the co-location of university and LHN staff for mutual benefit.

⁷ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.12

⁸ <https://www.siliconrepublic.com/innovation/trinity-innovation-awards-research-society-industry>

Precincts should incorporate:

- A clinical medical school as it will amplify clinical impact through its staff and students, and attract and retain clinical talent; and
- A tertiary or quaternary hospital as precincts must have a clinical as well as research focus.

Key Point 2: The University of Adelaide supports the development of a two-precinct model primarily centred around the State's two large medical schools and two major hospitals, and suggests that an extension of this model, to bring together allied and non-clinical research into a third precinct focused toward areas north of the CBD, merits discussion among key stakeholders.

Of course, in supporting the principle of the multi-precinct model, it is acknowledged that considerable work will be required in designing an optimal structure. As a starting point, this will require addressing a number of questions:

- How should the precincts differentiate?
- How should precincts collaborate with each other?
- What is the best way to connect precincts with contributing external organisations to ensure appropriate support, benefit and collaboration?
- How can non-precinct LHNs and rural clinical schools benefit from precincts?

Key Point 3: The University of Adelaide recommends that a State-wide process to architect the HMR system within and beyond the precincts to ensure benefit for all South Australians be put in place following the final SAPC Report.

Following on from the discussion under section 4.2 above, it is important to note that the University believes that broad collaboration as a *raison d'être* for SAHMRI is a model from the past - not the future - for the following reasons:

- There is duplication of functions which can be better provided by universities;
- The interfacing of three university systems via an extra system is complex and inefficient;
- No single university has been motivated or able to commit fully to the success and sustainability of SAHMRI as an entity; and
- Effective decision-making is hampered by the cross-cutting aims of multiple university members.

Key point 4: The University of Adelaide recommends a re-setting of the membership, structure and governance of SAHMRI to deliver greater agility, operational efficiencies, commitment to success by university partner(s), financial sustainability, and a focus on Research Excellence and Clinical Research Impact in just a few areas of critical need such as cancer.

The draft Report sets out three structural options⁹ for SAHMRI to develop as a centre of HMR excellence:

- Option 1: Incorporate SAHMRI into a Local Health Network with close attachment to the Royal Adelaide Hospital;
- Option 2: Incorporate SAHMRI into one of the State's CBD-based public universities; and
- Option 3: Modify SAHMRI's current structure, purpose, constitution, governance and membership to enable a stronger alignment of member interests in HMR.

⁹ SAPC Inquiry into Health and Medical Research in South Australia – Draft Report, p.146

Key Point 5:

a) SAPC Option 1 has the merit of ensuring a clinical focus although, as the draft Report notes, this option might 'de-emphasise commercialisation to some extent'. If adopted, this option should be amended to include the University of Adelaide as a partner. This would assist in both supporting research commercialisation endeavours, and in enabling research excellence via interdisciplinary interactions with 'disruptive' capabilities (e.g. artificial intelligence, bio-photonics, personal genomics).

b) The University of Adelaide is open to considering incorporation of SAHMRI into the University of Adelaide, as canvassed in SAPC Option 2. The University would then be able to make a full and proper investment in, and commitment to, the success and sustainability of SAHMRI, for the benefit of HMR in South Australia. We would seek to partner with CALHN, and possibly the Women's and Children's Health Network, to ensure both Research Excellence and Clinical Research Impact. The University of Adelaide is, for a variety of reasons, already the main University partner within SAHMRI, and has carriage of the Medical School which delivers an important clinical research focus within the ABMC precinct. Under this amended option the University would want to create a Governance model that guaranteed Excellence and Impact, including through the formation of an independent skills-based board.

c) Notwithstanding the possible benefits of incorporating additional clinical engagement, the University of Adelaide believes that SAPC Option 3 would require further consideration and design to ensure transformational change. We remain concerned that a core limitation with the current model – the difficulty of a single university fulsomely investing in, and committing to, the success and sustainability of SAHMRI – would need to be resolved under this Option.

The University recognises that not all stakeholders will feel comfortable with the University's vision. Nevertheless, we feel that the detailed analysis provided by the SAPC merits an honest and ambitious response from the University of Adelaide, and that now is the time to take bold decisions in the context of the 'Growth State' agenda.

The University first and foremost sees itself as an integral part of the future performance of the South Australian economy and an essential contributor to the health and well-being of South Australians. To that end the University remains totally committed to working with all stakeholders to deliver excellence in a collaborative, productive and practical manner at a State-wide level. As noted above in Key Point 3, the University believes that the need and aspirations of all the component institutions that comprise South Australia's HMR landscape must be factored into a shared approach to the future.

- Ends -